

## PERSPECTIVES

## A Survival Guide for Generalist Physicians in Academic Fellowships

### Part 1: Getting Started

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Fellowship programs provide valuable additional training for generalist physicians seeking academic careers, but they also pose unique challenges. Learning and development in a fellowship are largely self-motivated, in contrast to the structured programs of other medical training. Optimizing the fellowship experience therefore requires a strategic approach. As former fellows, we offer lessons from our collective experience, and from the advice we have culled from mentors and colleagues, to serve as a “survival guide” for generalist physicians pursuing fellowship training.

Although fellowship graduates often become leaders outside academia,<sup>1</sup> our focus here is on topics relevant to those pursuing academic careers as clinician-researchers or as clinician-educators who plan to engage in a substantive amount of scholarly work. For those whose primary goal is to become excellent clinical teachers, recent surveys suggest that time may be better spent developing clinical and teaching skills through primary care experience and faculty development courses rather than through fellowship training.<sup>2-4</sup> Before pursuing fellowship, careful consideration should be given to assessing career goals and to determining which fellowship programs, if any, are most suited to achieving those goals. Issues related to

choosing a fellowship program have been reviewed elsewhere.<sup>5</sup>

In part 1 of this two-part series, we focus on topics relevant early during fellowship: getting started, selecting projects, time allocation, balancing course work and independent projects, and mentoring. In part 2, we will address issues of importance to fellows preparing for the transition to junior faculty positions: disseminating project results, writing for grants, and securing an academic position.

### GETTING STARTED

For physicians entering fellowship from highly structured residency programs or other clinical settings, the prospect of two relatively unstructured years can be daunting. Accordingly, many new fellows immerse themselves in course work, which affords the structure to which they are accustomed. While classroom-based learning is useful for acquiring desired skills, fellowship time passes quickly, and independent work should not be delayed.

We suggest three activities to get started outside the classroom. First, finish any research projects begun before fellowship. Finishing ongoing projects may generate early publications, possibly before you begin searching for a job, as well as ideas for new projects.

Second, review the literature pertinent to your interests. Even if you have read the seminal articles in a given area, it is essential to become familiar with other relevant work early during fellowship for several reasons: to avoid “reinventing the wheel,” to discover gaps in current knowledge that may serve as areas for fellowship projects, to begin developing expertise in a specific area, and to build a firm foundation on which to base future work. Literature searches should be directed initially at a focused area of interest and can then be broadened or narrowed as your thinking evolves. Depending on your area of interest, search databases other than MEDLINE, such as those covering literature in education (ERIC), health services (HealthSTAR), and psychology (PsycINFO). Finally, take notes when reviewing the literature; you may be able to use them to write a review article or the background section of a grant proposal.

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Third, network. Become familiar with the faculty and resources at your institution. Who has interests similar to yours? Who has data that might serve as substrate for a fellowship project? Who might be interested in collaborating with you? Productive fellows rarely work alone, and even if you do not identify a faculty member whose interests mirror your own, there will always be faculty who can offer valuable administrative and methodologic expertise. Your fellowship program director should provide you with names of people to contact. Those people will generate more names, and in time a network of potential advisors and collaborators will evolve. Also, expand the network beyond your institution. Find out who the experts are in your area of interest and contact them. Most faculty are happy to exchange ideas with fellows who share their interests. Knowing your academic “community” is vital as you establish the foundation for your career in academic medicine.

## SELECTING PROJECTS

Fellowship projects are the centerpiece of most training programs. Projects typically involve research, but for clinician-educators, they may also include designing a new curriculum or evaluating an existing course. No matter what type of work is involved, it is important to remember that fellowship projects serve multiple functions: developing skills, developing expertise in an area, working with particular people, and demonstrating productivity. None of these functions is necessarily more important than the others. When selecting projects, consider how they will serve each of these functions. With regard to any project under consideration, ask yourself the following questions:

1. *How interesting is the project idea to you?* Fellowship projects are labors of love. If you are not enthusiastic about a project, it is unlikely that you will ever complete it. Many fellows find motivation in projects aimed at solving problems they have faced in clinical or educational settings.
2. *Is the question important?* Be sure that you can cogently reply to the person who, upon hearing your project idea, responds, “So what?”
3. *Does the project entail skills you want to (or should) learn?* Conducting a project that requires specific skills is one of the best ways to ensure that you will learn them.
4. *Will the project allow you to nurture expertise in a field of interest to you?* A good fellowship project can be a springboard for many future projects and may form the foundation of your scholarly career.<sup>6</sup>
5. *Will the project allow you to work with individuals with whom you would like to build relationships?* Mentors are much more accessible if

you are working with them closely. In addition, working successfully with a prospective employer or program director may provide incentive for that person to find a position for you after fellowship. We encourage you, however, not to work solely on projects initiated by others. There is no substitute for the learning and satisfaction derived from taking a fellowship project from start to finish.

6. *How risky is the project?* Fellowship programs typically last only 2 years and provide minimal funding to use for projects. As with financial investment, diversification is the key to a successful fellowship. We believe fellows should aim to establish a diversified portfolio of risky and safe projects.<sup>7</sup> Assessing the risk of a project rests on the answers to at least three questions: Can the project be completed in the time allotted? How much of your time and effort will the project take? And will the results be interesting and publishable regardless of the outcome? You should probably choose one or two projects that are low risk and one that is moderate risk (it is usually unwise to take on high-risk projects as a fellow).<sup>6</sup> Although you should work on projects that you find meaningful, you should not reject a project idea simply because you think it is not substantial enough. Completing a low-risk project and being able to present it and submit it for publication by the end of fellowship will help you demonstrate the productivity that academic employers will be looking for when you are searching for jobs.

Many prospective general medicine fellows have a project in mind before they enter fellowship, and a few carry these projects, as initially conceived, to fruition. Do not be disheartened, however, if you arrive without a well-developed project idea or if your early ideas do not work out. One of the primary purposes of fellowship is to teach you how to generate ideas for scholarly work and to assess the quality and feasibility of those ideas. Moreover, do not be afraid to change your focus if necessary. Fellowship is a time for flexibility and exploration. Take advantage of it.

Before pursuing any project idea, subject it to the scrutiny of your mentors and colleagues. Do not, however, discount your own assessment or spend too much time deliberating. Fellows who get caught up endlessly weighing the pros and cons of a particular project can develop a demoralizing paralysis. Sometimes pitfalls can be identified only after you have forged ahead with a project. Remember that fellowship is in essence a learning experience, and there are often important lessons to be gleaned from unsuccessful projects. The key is to be willing to discontinue pursuing a project once it becomes apparent that it is not feasible.

## TIME ALLOCATION

Fellowship programs vary substantially in their organization and content, but activities generally fall into five categories: scholarly projects, didactic course work, clinical activities, teaching, and seminars. Decisions about how much time to devote to each type of activity will vary according to your individual needs but are essential to maximizing your learning and productivity.

Future clinician-researchers should spend the majority of time on independent projects, with a substantial amount of time taking courses to learn the foundations of research. Early on, we suggest devoting 50% to 60% of your time to developing and conducting independent projects and 20% to 30% to course work. Later, after you have taken basic course work and have projects under way, you should spend 70% to 80% of your time on projects and no more than 10% in the classroom. Plan to spend no more than 10% to 20% of time in patient care and teaching activities. After you leave fellowship and have your research career under way, you can begin to spend more time and effort expanding your clinical and teaching expertise. Aside from "work-in-progress" meetings in which most programs will require you to participate, you should attend seminars sparingly.

For future clinician-educators, decisions about time allocation are more challenging. Surveys of fellowship graduates and academic employers suggest that clinical and teaching skills are more important than research skills for clinician-educator trainees.<sup>2-4</sup> We believe, however, that carrying out independent projects and cultivating an area of scholarship is essential for intellectual de-

velopment, which is the primary purpose of fellowship training. We therefore suggest clinician-educator fellows spend up to 50% of time on independent projects, which may or may not incorporate teaching activities. We suggest establishing the appropriate mix of clinical and teaching activities based on early consultation with program directors, mentors, and junior and senior faculty members whose careers most closely represent your own envisioned career. Improving teaching skills, which are typically underemphasized in fellowship programs,<sup>2</sup> may require pursuing activities outside the fellowship curriculum, including course work in education or faculty development workshops.

We strongly suggest developing an individualized timeline, in consultation with program directors and mentors, early on during fellowship, to ensure timely productivity. Table 1 provides a framework for fellows conducting at least one independent project.

## BALANCING COURSE WORK AND PROJECTS

One aspect of time allocation, striking the appropriate balance between taking courses and conducting independent projects, deserves special mention. Most fellowships offer course work in various disciplines; many also offer the opportunity to obtain an advanced degree (e.g., MPH or MS). The amount of course work you pursue must be balanced against other competing demands. Deciding on the appropriate balance requires consideration of three distinct elements: (1) the degree to which skills should be acquired through course work versus independent projects;

Table 1. Suggested Timeline for Fellowship Activities

Activity	July – Dec, Year 1	Jan – June, Year 1	July – Dec, Year 2	Jan – June, Year 2
Getting started	Finish ongoing projects. Literature review.	Write review article (if relevant).		
Research project	Develop project proposal.	Refine proposal. Collect/acquire data.	Collect/analyze data.	Analyze data and prepare report. Present findings at national meeting.
Education project	Identify need for educational program. Develop curriculum/ program proposal.	Collect baseline data. Implement curriculum/ program.	Continue curriculum/ program. Collect/analyze data.	Analyze data and prepare report. Present findings at national meeting.
Grant writing (if relevant)		Look into grant opportunities.	Write grant proposal.	Refine and submit proposal.
Course work:	Begin basic course work.	Continue basic course work. Begin advanced course work (few selected courses).	Continue focused course work (if necessary).	
Professional relationships	Begin networking, develop local relationships.	Broaden network. Attend national meeting.	Develop new relationships through job search.	Continue networking. Maintain relationships.
Career planning	Begin thinking about career options.	Refine goals and priorities.	Write "dream job" description. Begin job search.	Continue job search, negotiation.

(2) the decision to pursue a degree if available; and (3) the trade-off between acquiring skills and demonstrating productivity.

There is no simple formula for deriving the right admixture of courses and independent work for acquiring the skills you desire. Both courses and independent projects are vehicles for learning, and striking the right balance will depend on your learning style. A reasonable approach, however, is to begin with a core set of courses with the intent of acquiring “essential” skills. Which skills are essential depends on your interests and goals. Researchers typically should include basic epidemiology and biostatistics, which are usually core elements of general medicine fellowships,<sup>2</sup> and educators might include adult learning theory or program evaluation. You might choose to take other courses that facilitate designing or conducting a specific project (e.g., a statistics course that allows you to use your own data to fulfill course assignments). Beyond this, we advise being extremely selective with course work. Although some courses may appear indispensable, they will often require a substantial workload. Look at the course agenda or talk to the instructor beforehand to determine whether or not you can learn the relevant material more efficiently on your own. When taking courses, remember that your goal for most subjects should be competence, not mastery. It is unlikely that any amount of course work that you can complete during fellowship will allow you to declare independence from statisticians or other methodologists in your future endeavors. Realistically, course work should be seen as a vehicle for developing basic competency and for understanding methodologic theory and principles, which will serve as a foundation for continued learning and as a means to converse intelligently with future collaborators. Finally, limit the extent to which course work interferes with your productivity. Beyond what is necessary to confidently learn the relevant material, minimize the effort you put into course assignments. If necessary, take as many classes as possible “pass/fail.”

The question of whether or not to pursue an advanced degree also has no simple answer. Some argue that a degree will increase your market value when searching for jobs, while others rightly counter that your training, coupled with your creativity and productivity, will be all that matters in the long run. In general, if financial and time burdens are not large, future clinician-researchers should consider obtaining a degree. However, if the degree is not paid for or will require fulfilling obligations that will significantly impair your productivity, it is difficult to justify. For clinician-educators, a degree provides little added value.

Balancing skill acquisition and productivity can be seen as competing short-term and long-term goals. In the short term, when you are looking for a job, prospective employers will judge your capacity to do substantive work based more on whether you have been productive than on the skills you have developed. Hence, finishing projects

will help achieve the short-term goal of securing employment. However, future opportunities to learn the skills required for independent scholarly work may be rare. In the long run, as long as you are able to finish and present at least one project by the end of fellowship, you will be better off having spent adequate time learning fundamental skills—through projects as well as course work—on which you will depend throughout your career.

## MENTORING

A mentor is “a close, trusted, and experienced counselor or guide.”<sup>8</sup> Advancement in academic medicine depends in large part on the success of relationships with mentors,<sup>9</sup> and fellowship provides an excellent opportunity to begin developing these relationships. Mentors serve many functions, including providing moral support, project-related guidance, methodologic expertise, and career counseling. They should also help you identify opportunities for projects, grants, and junior faculty positions. In order to successfully carry out these functions, mentors should be supportive individuals invested in your well-being. Thus, when choosing mentors, remember that their personality and accessibility may be as important as their stature and expertise.

Although one mentor may offer guidance in all aspects of fellowship training, we have found it helpful to identify several mentors who can serve specialized functions and offer different perspectives. For example, one mentor might be involved with your scholarly activities, one with long-term career planning, and another with teaching and clinical work. Mentors do not all need to be senior faculty members, nor do they need to be local. It may be useful to have a mentor from another institution who has expertise in your research area, or a junior faculty mentor who can orient you to the culture and politics of an academic department. We advise, however, that at least one of your mentors be a senior faculty member at your institution who has a record of supporting fellows and junior faculty.

Mentors need not be the only individuals you turn to for help. It is also useful to have a group of advisors who can offer specialized help on your projects (e.g., providing methodologic expertise). Many programs have a pool of affiliated core faculty who serve as advisors for fellows.

Finding good mentors is a necessity,<sup>6,10</sup> but the success of a mentoring relationship depends on you. The following guidelines are essential to maintaining a successful relationship with your mentor:

*Be proactive.* Do not wait for your mentors to call you. Schedule appointments to discuss your progress and plans. The frequency of meetings with mentors will depend on the particular relationship. If you are working on a project with a mentor, you may need to meet weekly or more. If you are seeking career guidance, you may need to meet quarterly or less.

*Be respectful.* Successful mentors in academic medicine are extremely busy. Do not expect your mentors to be

available whenever you think of a question. Always ask when it would be convenient for them to meet with you. Be punctual for meetings. Give them adequate time to read and comment on your abstracts, papers, and proposals. In general, you should allow at least a week for a mentor to comment on a draft of your abstract or paper, at least 3 weeks to write a letter of recommendation, and at least a month to read and comment on drafts of major grants or projects.

*Be organized.* When you have a meeting, prepare a list of the points you want to cover and ask if your mentor would like to see the list in advance, in order to use your meeting time more efficiently. These points may be specific to a project you are working on together or more generally relevant to your career. If you are having a quarterly meeting with a senior mentor, plan to seek advice on prioritizing your projects, identifying opportunities for future projects or funding, and searching for jobs.

*Be responsive.* When mentors spend time reading and commenting on a paper or proposal, respond to their suggestions. Even if you disagree with a suggestion, the fact that a problem was identified means that you probably need to revise. If a mentor suggests that you get information on a certain grant or job opportunity, send a follow-up e-mail message with the information you have found and how it might apply to your situation.

*Be appreciative.* Acknowledge the time and effort your mentors spend on your behalf. Mentors derive great satisfaction from your progress. Let them know how instrumental they have been in helping you achieve your goals.

## SUMMARY

Generalist physicians pursuing fellowship training should develop an early strategic plan to guide them through their fellowship years. Though each fellow's plan must be individualized, fellows should get started on independent projects early, decide how much time to allocate to various activities, strike an individualized balance between course work and independent projects, and learn how to choose and maintain relationships with mentors. Early decision making with regard to these aspects of fellowship will allow trainees to maximize their learning, development, and progress toward career goals.

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