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# How to Become a Successful Clinical Investigator

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The purpose of this article is to help residents, fellows, and junior faculty who aspire for an academic career, and seasoned plastic surgeons who may wish to have a second "lease on life," to become successful clinical investigators. It is of particular relevance to those who love the intellectual challenge of research, and are keen to find answers to clinically important problems in plastic surgery.

Successful clinical investigators are the primary investigators of important clinical research, the lead authors of high impact publications, recipients of career awards and honors in their profession, and eventually leaders in their field. It is never too late to become a successful clinical investigator: all it takes is passion and initiative.

There are tangible benefits to being a clinical investigator. In conjunction with the high quality clinical care you provide your patients is the opportunity to educate medical students, residents, and colleagues. In addition, there is the prospect of working in a stimulating environment with young minds, finding answers to clinically important questions, or dismantling entrenched dogmas passed on by the so called "experts" of a previous generation of plastic surgeons.

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## Preconditions for academic success

The motivations for a clinician to become a clinical investigator will vary, depending on their circumstances, specialty, and interests. Plastic surgeons may not be happy with a routine and unchallenging clinical practice and may wish to pursue the challenge of scholarship.

Various factors have been identified that prevent clinicians from becoming clinical investigators, such as competing clinical service demands, lack of methodologic training necessary to conduct clinical research, lack of mentorship, and other unique factors relevant to their own specific specialty [1–4]. In 1994, the Institute of Medicine identified five main obstacles to careers in clinical research: a lack of protected time, insufficient formal methodologic training, lack of mentors, student debt, and academic emphasis on cellular or molecular research over patient-oriented research [5]. In a later publication, Sackett [6,7] narrowed this list and espoused that academic success as a clinician-scientist is predicated on three preconditions: mentoring, the periodic priority list, and time management. These preconditions for academic success will be discussed in detail.

### *Mentoring*

Mentorship can be defined as "a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (mentee/protégé), aimed at promoting the development of both" [8]. Mentorship is a common theme in publications addressing the present topic, and is considered essential to one's success. For example, graduates in internal medicine research fellowships were five times more likely to publish at least one paper, and were three times more likely to be principal investigators on a funded research grant, if they had an influential mentor during their fellowship [9]. We can speculate that this "mentor factor" also applies to plastic surgery. In addition, in a survey of faculty from 24 United States medical schools, faculty members with mentors had significantly higher career-satisfaction scores than those without mentors (mean score, 62.6 versus 59.5 on a scale that varies from a low of 20 to a high of 100; $P < 0.003$) [10], and having a mentor was associated with a higher likelihood of promotion to professor [11].

Despite the known benefits of mentoring, few junior faculty members feel as though they have a true mentor. A study that surveyed junior faculty at the University of Washington found that 36% felt that they had mentors [12]. In a more recent systematic review, less than 20% of faculty members had a mentor. Additionally, women perceived that they had more difficulty finding mentors than their male colleagues [13].

It is unclear from the various published reports why the mentoring system is not working well in academic centers. The authors can only speculate that the leadership in many institutions has not recognized the critical role of the mentor and embedded it in the vision plans of the center (or program). Other possibilities could be: the obstinacy of the young faculty member to admit that he or she needs a mentor, thinking they can do it alone; or, the competitive atmosphere in which the young faculty member is working in may make the mentor-protégé relationship not possible.

#### *Finding the right mentor*

Finding the right mentor is crucial. "Mentors need to be congenial persons who have had a variety of successful teaching experiences, who have also had success in research, grantsmanship and publication, and who have demonstrated common sense, discretion and good judgment in their service to the institution and in their relationships with graduate students, colleagues and administrators" [14]. The important considerations when selecting a mentor are found in Box 1.

The ideal mentor will provide resources, opportunities, advice, and protection (Table 1). The mentor should provide you with the resources you will need early on in your career, such as space to work, free photocopying, secretarial or research

**Box 1: Important considerations when selecting a mentor**

1. The mentor should be a competent plastic surgeon clinical investigator who understands your career at your institution, university, or hospital.
2. The mentor must have achieved his or her own academic success and must be comfortable taking a back seat to those being mentored in matters of authorship, and not compete with you for recognition.
3. The mentor should not directly control your academic appointment or your base salaries.
4. The mentor must be willing to devote the time and energy to assist you in both routine and unexpected academic and personal challenges
5. You must provide periodic feedback to your mentor to ensure he or she remains the best person capable to continue mentoring you.

*Data from* Sackett DL. On the determinants of academic success as a clinician-scientist. Clin Invest Med 2001;24:94–100; and Haynes RB, Sackett DL, Guyatt GH, et al. Clinical Epidemiology 3rd Edition. Philadelphia: Lippincott Williams & Wilkins; 2006.