

Career Resources

Career development resource: academic career in surgical education★

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Abstract. Academic surgeons play an instrumental role in the training of our medical students and surgical residents. Although volunteer faculty often have an important role in the clinical development of surgeons-in-training, the tasks of curricular development, structured didactic sessions, professional advising, research sponsorship, and mentoring at all levels fall to the academic surgeon. Historically, the career advancement path for an academic physician favored grant acquisition and scholarly publication. Broader definitions of scholarship have emerged, along with corresponding modifications in academic award systems that allow advancement in faculty rank based on a surgeon's educational efforts.

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Each academic health center will have its own rules and regulations for advancement within its clinician-educator track, and the individual surgeon should familiarize themselves with their institution's faculty handbook. While developing clinical excellence in their chosen field of surgery, educators also must determine their area(s) of teaching expertise and participate in additional coursework as necessary to expand their skill set. A clear and mutually agreed upon job description must be negotiated with the department chair, spelling out the percentage of time devoted to teaching, research, clinical work, and community service. Significant changes in clinical or educational practice should prompt an update to the job description because recommendation for promotion will refer to achievement in the areas outlined therein.

Educational Opportunities in Surgical Education

Medical students

Although medical students spend their third year (M3) surgical clerkship with surgical faculty in hospitals and clinics,

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opportunities for interaction and educational involvement are present throughout all years of medical school. Surgeons are welcomed during the preclinical years, giving formal lectures on topics such as wound healing, providing a surgical approach to gross anatomy dissections, and bringing a clinical perspective to physical examination didactics. During these years, surgeon educators can provide a unique exposure to their field through shadowing experiences and informal and formal advisement for interested students. Surgery interest groups are supported by many institutions and provide an additional venue for small group instruction. Many institutions are transitioning from small-group didactic sessions to streaming video lecture presentations, developed and recorded by clinical faculty. Nationally, online curricular modules such as the Web Initiative for Surgical Education-MD⁶ are providing interactive high-fidelity learning modules for M3 students. Finally, fourth year medical school electives such as surgery acting internships, surgical anatomy, and surgical boot camp are sought after by students entering surgical disciplines and are staffed by clinical surgical faculty.

The position of Clerkship Director (CD) allows the surgeon the opportunity to participate in small group instruction, skill instruction, curricular development, simulation, test development and evaluation. In addition, the ability to participate collaboratively across disciplines with other CDs allows integration of educational research efforts. Ephgrave et al⁷ reported that more than 95% of surgery CDs report that being a CD enhances job satisfaction and 70% perceive a positive effect on academic advancement. However, the time commitment is significant. The cross-disciplinary consensus of the Alliance for Clinical Education guidelines prepared in 2003 suggest that the minimum faculty effort needed for a CD role was 25% for administrative responsibilities and paperwork, plus an additional 25% time for hands-on teaching. In addition, clerkship resources included the equivalent of a full-time clerkship coordinator.⁸ These time and support considerations must be delineated clearly in the surgeon's job description and contract. In the setting of a multisite surgical clerkship, the medical school may employ Curriculum Directors for the core

M3 clerkships. This position allows the surgeon-educator to collaborate further with other Curriculum Directors and directly with the Dean of the Medical School, developing curricular modules, integrating the curriculum, conducting educational research, and providing leadership and administrative support to Surgical Site Directors. Finally, each medical school provides opportunities for surgeons to serve on committees critical to its educational mission such as the Admissions Committee or Curriculum Committee.

Residents

Opportunities to participate in significant surgical resident education occur in multiple venues: the operating room, clinics, wards, surgical intensive care unit, classroom, skills laboratory, research laboratory, and auditorium. Curricular initiatives developed institutionally often are well received by other surgical residency programs that are confronted by similar educational and work-hour challenges. As simulation programs are mandated by the relevant Resident Review Committees, the need for structured simulation curricula and outcomes assessments by clinical surgeons increases. Residents are eager collaborators in educational research as well as clinical and basic science projects. Ongoing mentoring or advising relationships with surgical residents provide opportunities not only to nurture residents in their clinical and basic science experience but also to encourage participation in surgical education. The position of Residency Program Director requires a significant commitment to the Accreditation Council for Graduate Medical Education duties associated with the position. The Program Director must "devote his or her principal effort to the program,"⁸ often leaving little time for clinical or research activity.

Faculty

Collaboration between surgical faculty with similar interests in education can occur within one's own institution or be

Table 1 Opportunities for professional development

ACS surgeons as Educators Course ¹⁰	Week-long intense course organized annually by the American College of Surgeons
University of Illinois at Chicago Masters in Health Professions Education Program ¹¹	Disciplinary and interdisciplinary offerings are available on topics related to management and leadership in health professions education, scholarship methods, curriculum, instruction, competence assessment, program evaluation, quality assessment, primary care education, clinical decision making, and medical humanities and ethics
Association for Surgical Education Surgical Education Research Fellowship ¹²	Coursework can be completed on campus or online
University of California, Los Angeles Medical Education Fellowship ¹³	1-y, home-site fellowship designed to equip investigators with the skills and knowledge needed to perform research in surgical education
Harvard Macy Institute ¹⁴	A 2-y seminar-based program emphasizing curriculum development, scholarly endeavors, educational leadership, and teaching skills
	Continuing health care education programs designed to instruct faculty educators in the health professions in methods for translating their knowledge and capabilities into organization-wide improvements

Table 2 Teaching portfolio organization¹⁶

Reflective statement	Generally, a 1-page statement on the educator’s teaching philosophy that is supported by the content of the teaching portfolio
Introductory statement	Important items to include in this statement are 5-y goals, strategies for improvement in teaching, areas of research interest, or personal motivation for teaching
Material representative of teaching practices	A short statement that defines the educator’s role as related to teaching responsibilities, percentage of effort devoted to teaching, courses taught, and area of research
Appendix: evaluative material	Direct teaching activities, curriculum and material development, learner assessment, educational scholarship/creation of enduring educational materials, educational administration and leadership activities, professional development in education, and evidence of mentorship
	Teaching awards or honors received including description of award and award process

extended internationally. Locally, fellow educators can provide mentorship to junior colleagues, in particular with regard to academic promotion, while pursuing the clinician-educator pathway. Optimally, surgical educators should identify mentors who have a national reputation in education. Similarly, mentorship can be provided to junior faculty interested in surgical education. The process of mentoring can take many forms, including counseling, advising, facilitating introductions, providing constructive criticism of teaching, critiquing grant proposals or developing professional portfolios.⁹ Innovative faculty development curricula are required locally to update and nurture the teaching skills of core faculty in the face of changing Resident Review Committee requirements. These curricula are welcomed by other institutions facing similar educational challenges.

Training Requirements

Residency/fellowship training/board certification

Completion of an accredited surgical residency and fellowship with appropriate board certification is required for academic clinical practice. During residency and fellowship, opportunities for educational experience with medical students and residents should be sought. Institutional programs that provide advanced training in teaching and research skills, such as a graduate degree in Health Professions Education, can potentially be integrated into a residency laboratory year. If

educational training is not integrated into residency or fellowship, completion of additional training is paramount.

Additional training

In most cases a fully trained clinical surgeon will desire additional training to become a qualified surgical educator. There are numerous formal structured professional development activities that an educator may consider for career advancement, designed to provide the basic skills necessary to become effective teachers and administrators in surgical education programs (Table 1).

Documenting Educational Activity

Although a traditional curriculum vita accurately reproduces a surgeon’s clinical scholarly activity, documentation of teaching accomplishments can be more elusive. The Association of American Medical Colleges Group on Education Affairs convened a Consensus Conference on Educational Scholarship in 2006 to outline a set of documentation standards for use by educators and academic promotion committees.¹⁵ This consensus conference resulted in re-affirmation of the 5 education activity category contents and documentation standards (teaching, curriculum, advising and/or mentoring, education leadership and/or administration, and learner assessment).¹⁵ In addition, participants reiterated the need for evidence of quantity and quality of educational activities. A generally accepted framework for organizing a teaching portfolio, modified from

Table 3 Funding sources for surgical education and research

Center for Excellence in Surgical Education, Research and Training grants administered through the Association for Surgical Education Foundation	http://www.surgicaleducation.com/mc/page.do?sitePageId = 28,551&orgId=ase
Robert Wood Johnson Foundation	http://www.rwjf.org/grants/
Association for Women Surgeons annual grant competition	http://www.womensurgeons.org
Ethicon Endo-Surgery educational grants	http://www.ethiconendo.com/dtcf/pages/Funding_Requests.htm

Table 4 Medical organizations offering educational resources

American College of Surgeons	http://www.facs.org/
Association for Surgical Education	http://www.surgicaleducation.com
Association of Program Directors in Surgery	http://www.apds.org/index.htm
Association of American Medical Colleges	http://www.aamc.org/
Association for Medical Education in Europe	http://www.amee.org/index.asp?pg=75&cookies=True
Association of Women Surgeons	http://www.womensurgeons.org/

a University of Virginia template for admission to the Academy of Distinguished Educators, is shown in Table 2.¹⁶ In addition, the portfolio can contain a detachable section containing self-reflective formative material and an appendix containing supportive materials for contributions as an educator.

Grant Funding, Research Fellowships, and Travel Fellowships

Procuring funding for educational research or the development of innovative curricula can be challenging. Examples of extramural sources of funding for developed projects available through application or competition are shown in Table 3. In addition, funding often is available through intramural institutional grants.

Professional Societies for Academic Surgeons

Many professional medical organizations have sections devoted to education (Table 4). Medical schools and universities increasingly give surgeons promotion credit for teaching medical students and residents. Detailed teaching documentation, such as following the guideline of a Teaching Portfolio,¹⁶ organizes a surgical educator's activities and facilitates tenure and promotion.

Organizations that promote surgical education are discussed later.

Journals

Many traditional surgical journals publish articles related to medical student and resident education, either in print or online format. Several are open-access and provide a forum for exclusively publishing peer-reviewed research articles relating to the training of health care professionals. Examples are the *Journal of Graduate Medical Education*, *Academic Medicine*, *Medical Education*, *Medical Teacher*, and *Teaching and Learning in Medicine*. In addition, resources such as the Association of American Medical Colleges MedEdPORTAL provide a free peer-reviewed publication service and repository for medical teaching materials, assessment tools, and faculty development resources.

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