

Career Development Resource [CDR]

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. While 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 which allow advancement in faculty rank based on a surgeon's educational efforts.

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Introduction

Academic surgeons play an instrumental role in the training of our medical students and surgical residents. While 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. Over the past two decades, a growing appreciation of the importance of the academic surgeon has emerged. Broader definitions of scholarship have emerged, (1-3) along with corresponding modifications in academic award systems (4, 5) which allow advancement in faculty rank based on a surgeon's educational efforts. Glassick (2) articulated common criteria for judging all forms of scholarship: clear goals; adequate preparation; appropriate methods; significant results; effective presentation; and reflective critique.

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 must also 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, as recommendation for promotion will refer to achievement in the areas outlined therein.

Educational Opportunities in Surgical Education

Medical Students

While medical students spend their M3 core surgical clerkship with surgical faculty in hospitals and clinics, 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, on-line curricular modules such as WISE-MD [6] are providing interactive high-fidelity learning modules for M3 students. Finally, M4 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 al 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. (7) However, the time commitment is significant. The cross-disciplinary consensus of the Alliance for Clinical Education (ACE) guidelines prepared in 2003 suggests that the minimum faculty effort needed for 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 clearly delineated in the surgeon’s job description and contract. In the setting of a multi-site surgical clerkship, the medical school may employ Curriculum Directors *for the core M3 clerkships*. This position allows the surgeon-educator to further collaborate 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 the 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, SICU, classroom, skills lab, research lab and auditorium. Curricular initiatives developed institutionally are often 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 (RRC), 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 to not only 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 ACGME duties associated with the position (Reference ACGME website). 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 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 RRC requirements, and 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 be integrated into a residency "lab" year. If educational training is not integrated into residency or fellowship, completion of additional training is paramount.

Additional training

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

Table 1.

<p>ACS Surgeons as Educators Course¹⁰</p>	<p>Week-long intense course organized annually by the American College of Surgeons.</p>
<p>University of Illinois at Chicago Masters in Health Professions Education Program¹¹</p>	<p>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. Coursework can be completed on campus or online.</p>
<p>Association for Surgical Education (ASE) Surgical Education Research Fellowship (SERF)¹²⁻</p>	<p>One year, home-site fellowship designed to equip investigators with the skills and knowledge needed to perform research in surgical education.</p>
<p>UCLA Medical Education Fellowship¹³</p>	<p>A two year seminar-based program emphasizing curriculum development, scholarly endeavors, educational leadership and teaching skills.</p>
<p>Harvard Macy Institute¹⁴</p>	<p>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.</p>

Documenting Educational Activity

While 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 (AAMC) Group on Education Affairs (GEA) convened a Consensus Conference on Educational Scholarship in 2006 in order 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 five education activity category contents and documentation standards (teaching, curriculum, advising and/or mentoring, education leadership and/or administration, and learner assessment) (15). Additionally, participants reiterated the need for evidence of quantity **and** quality of educational activities (16). A generally accepted framework for organizing a teaching portfolio, modified from a University of Virginia template for admission to the Academy of Distinguished Educators, is shown in Table 2 (17).

Reflective statement-	Generally a one page statement on the educator’s teaching philosophy that is supported by the content of the teaching portfolio. Important items to include in this statement are 5 year goals, strategies for improvement in teaching, areas of research interest or personal motivation for teaching.
Introductory statement-	A short statement that defines the educator’s role as related to teaching responsibilities, percent effort devoted to teaching, courses taught, and area of research.
Material representative of teaching practices-	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 are important to include. ¹⁵
Appendix: Evaluative material-	Teaching awards or honors received, and description of award and award process.

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 (17).

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 is often available through intramural institutional grants.

Center for Excellence in Surgical Education, Research and Training (CSERT) -grants administered through the Association for Surgical Education Foundation	http://www.surgicaleducation.com/mc/page.do?sitePageId=28551&orgId=ase
Robert Wood Johnson Foundation	http://www.rwjf.org/grants/
Association for Women Surgeons-annual competition for grants	http://www.womensurgeons.org
Industry- Companies such as Ethicon Endo-Surgery support educational grants	http://www.ethiconendo.com/dtcf/pages/Funding_Requests.htm

Professional Societies for Academic Surgeons

Many surgical organizations have sections organized for surgical education (see 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 the educational activities and facilitates tenure and promotion.

Organizations that promote surgical education are examples below.

Table 4

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 Education	http://www.womensurgeons.org/

Journals

Many traditional surgical journals publish manuscripts related to medical student and resident education, either in print or on-line format. Several are open-access and provide a forum for exclusively publishing peer-reviewed research articles relating to the training of healthcare 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 AAMC MedEdPORTAL provide a free peer-reviewed publication service and repository for medical teaching materials, assessment tools, and faculty development resources.

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