

10-A: BECOMING A SUCCESSFUL CLINICIAN-INVESTIGATOR<sup>1</sup> - dls, rbh  
( 5617 words; 7 Apr 03)

"To become a professor of medicine or surgery now you have to be young, impossibly specialised to the point of non-functionality in any clinical reality zone, and skilled either in the treatment of rats and cats or in plagiarising other people's research through meta-analysis."<sup>2</sup>

I wrote this section with both mentors and the mentored in mind. However, my primary target is the reader who is being mentored, whom I will call "you." I hope it also will help mentors (whom I will call "they") identify their duties and evaluate their effectiveness.

I think that the determinants of your "academic success" as a clinician-investigator (defined in terms of principal investigatorship, lead authorship, promotion, tenure, career awards, honours, power, and reputation) are not "academic" (defined in terms of intelligence, theoretical understanding, mastery of a body of knowledge, and teaching skills). Some clinician-investigators fail because they are crazy. Others fail because they lack minds that are "prepared" to generate important questions based on their clinical observations. However, the range of their intelligence is so compressed at the top of the scale that even if it were an important determinant, attempts to correlate it with success are doomed. Furthermore, academic failure is common among those who do and don't understand the theory and know the facts, and are and aren't excellent teachers. The ability to generate novel, imaginative hypotheses does play a role in the academic success of basic researchers. However, this rarely applies in patient-based and clinical-practice<sup>3</sup> research (where the hypotheses usually are common knowledge and often originate with patients). Finally, I'm confident that none of you will seriously argue that being a nice person is a prerequisite for academic success.

What, then, are the determinants of your academic success for the clinician-investigator? I've concluded that they are three: mentoring, creating periodic priority-lists, and time-management. However, the evidence supporting my conclusions is of shaky validity. Most of it is based on a Level 4 case-series<sup>4</sup> of young academics I've mentored and to whom I've taught priority-lists and time-management. I've also repeated Level 2b cohort observations of individuals who did and didn't receive mentoring or employ time-management. In addition, I've made several Level 3b case-control observations of academics who clearly were and were not successful.

A literature search provided some confirmation for my conclusions, but no higher levels of evidence. Applying the MeSH terms MENTORS (510 hits) and TIME MANAGEMENT (901 hits) didn't turn up any Level 1 evidence, but the Level 2-4 evidence I encountered there<sup>5,6,7,8,9,10,11,12,13</sup> supports my thesis. I also found important evidence on the experiences and perceptions of women in medicine<sup>14,15</sup>. A final note of caution: most of the clinician scientists I've mentored and observed in the USA, Canada, and the UK have been hospital-based internists. If you and your mentor are from another health discipline, you will have to decide whether and where the conclusions and recommendations I make in this section apply to you.

### Mentoring

Mentoring is vital to your success as an academic clinician. For example, graduates of US-style primary care internal medicine research fellowship programmes were 5 times as likely to publish at least one paper and 3 times as likely to be PIs on a funded research grant if they had an "influential mentor" during their fellowship<sup>16</sup>. Effective mentoring is of two sorts, depending on whether you are a newcomer or an established academic. For newcomers (such as graduate students or new faculty), mentoring provides three things. First, it provides resources without obligations. Second, it provides opportunities without demands. Third, it provides protection. I hope it's already obvious (and I'll reinforce this point later) that it requires an already successful and secure academic to provide this sort of mentoring.

57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111

By resources, I mean that a really good mentor would provide you with:

- space to work;
- productivity-enhancing equipment;
- free photocopy, email and internet;
- occasional secretarial support;
- money to go to courses and meetings;
- salary supplements if your fellowship doesn't provide for necessities and simple graces; and
- bridge-funding of your research until you get your first grant.

In some departments, all or most of these resources are provided by the chair, and in others, none. In either setting, your mentor should "wheel and deal" until the resources are in place. You should be spared both the time and the humiliation of begging for these resources on your own.

By opportunities at the beginner's level, I mean the systematic examination of everything that crosses your mentor's desk for its potential contribution to your scientific development and academic advancement:

1. The opportunity to join one of your mentor's ongoing research projects. This can provide more than just "hands-on" practical experience in the application of your graduate course content. You can also learn how to create and function as a member of a collaborative team, and to develop skills in research management.

Taking on a piece of your mentor's project to run, analyze, present and publish is a two-edged sword. On the one hand, it provides an excellent opportunity to go beyond the classroom and develop your practical skills in data management and analysis. Moreover, it gives you the opportunity to start to learn how to combine "science and showbiz" in presenting your results and writing for publication. Finally, your CV will benefit.

On the other hand, being given a project by your mentor can be harmful. The greatest risk here is that your mentor might "give" you a pre-designed sub-study or research project and encourage you to use it as your major (e.g., thesis) learning focus. Although often done with the best intention, accepting this "gift" is bad for you. This is because taking on a pre-designed project robs you of the opportunity to develop your most important research skills. First, you'll lose the opportunity to learn how to recognize and define a problem in human biology or clinical care. Second, you'll lose the opportunity of learning how to convert that problem-recognition into a question that is both important and answerable. Third, you'll lose the opportunity to learn how to select the most appropriate study architecture to answer your question. Fourth, you'll lose the opportunity to identify and overcome the dozens of "threats to validity" that occur in any study. These four skills are central to your development as an independent investigator. Without them, you'll master only the methods that are required for your "given" project. Like the kid who received a shiny new birthday hammer, you'll risk spending the rest of your career looking at ever less important nails to pound with your same old limited set of skills.

2. The opportunity to carry out duplicate, blind (and, of course, confidential) refereeing of manuscripts and grants. The comparison of these critiques not only sharpens your critical appraisal skills. It also permits you to see your mentor's refereeing style and forces you to develop your own.
3. The opportunity to accompany your mentor to meetings of ethics and grant review committees to learn firsthand how these groups function.
4. The opportunity, as soon as your competency permits, to join your mentor in responding to their invitations from prominent, refereed journals to write editorials, commentaries, or

112 essays. Not only will the joint review and synthesis of the relevant evidence be highly  
113 educational. It also provides you the opportunity to learn how to write with clarity and style  
114 (see the section on writing). Finally, it adds an important publication to your CV. As soon as  
115 your contribution warrants, you should become the lead author of such pieces. The ultimate  
116 objective is for you to become the sole author (all the sooner if your mentor casts a wide  
117 shadow).

118  
119 One note of caution about invited chapters for books: unless the book is a very prestigious  
120 one, its authorship adds little or no weight to your CV.

- 121  
122 5. The opportunity to take over some of your mentor's invitations and learn how to give  
123 "boilerplate" lectures (especially at nice venues and for generous honoraria).  
124  
125 6. Your inclusion in the social as well as academic events that comprise the visit of colleagues  
126 from other institutions should become automatic.  
127  
128 7. The opportunity to go as part of a group to scientific meetings, especially annual gatherings  
129 of the research clan. This has several advantages. First, it gives you the chance to meet  
130 and hear the old farts in your field. Second, it allows you to meet and debate with the other  
131 newcomers who will become your future colleagues. Third, you can compare your  
132 impressions and new ideas with your mentor while they are fresh, in a relaxed and congenial  
133 atmosphere.

134  
135 Another note of caution: spending time going to meetings carries risks as well as benefits, as  
136 I'll describe under time-management at the end of this section.

- 137  
138 8. The opportunity to observe, model and discuss teaching strategies and tactics in both clinical  
139 and classroom situations. When you are invited to join your mentor's clinical team, you can  
140 study how they employ different teaching strategies and tactics as they move from the post-  
141 take/morning report, to the daily review round, to the clinical skills session, to grand rounds.  
142 With time, you should take over these sessions and receive feedback about your  
143 performance. The same sequence should be followed in teaching courses and leading  
144 seminars in research methods.

145  
146 As you become an independent investigator, your opportunities mature and incorporate two  
147 additional areas. First, your mentor should start nominating you to more advanced opportunities  
148 for increasing your academic experience, networking, and recognition. Examples here include  
149 scientific committees (e.g., grant review committees), task forces (e.g., for the development of  
150 methodological standards or evidence-based guidelines), and symposia (especially those that  
151 can result in first-authored publications). Second, your mentor should start nominating you for  
152 academic posts, writing letters of support and counselling you as you negotiate space, support  
153 staff, rank, and salary. Finally, your mentor should continue to be available for discussions of  
154 your triumphs and troubles and for letters of support as you proceed through the various stages  
155 of academic development, promotion, and tenure.

156  
157 It is important that these opportunities are offered without coercion and accepted without  
158 resentment. Crucially, they must never involve the off-loading of odious tasks with little or no  
159 academic content from overburdened mentors to the beholden mentored.

160  
161 By advice, I mean providing frequent, unhurried, and safe opportunities for you to think your way  
162 through both your academic and social development. Topics here include your choices of  
163 graduate courses, the methodological challenges in your research projects, the pros and cons of  
164 working with a particular set of collaborators, and how to balance your career with the rest of your  
165 life. For example, some mentors refuse to discuss academic issues at such sessions until they  
166 have gone through a check-list of items encompassing personal and family health, relationships,  
167 finances, and the like. Their advice should take the form of "active listening," should focus on

168 your development as an independent thinker, and should eschew commands and authoritarian  
169 pronouncements.

170

171 As long as gender-based inequalities exist in running households and raising children, mentors  
172 must be knowledgeable and effective in addressing and advising around the special problems  
173 that face women in academic careers. Although only 20% of female academics in one study  
174 stated that it was important to have a mentor of the same gender<sup>12</sup>, it is imperative that all women  
175 pursuing academic careers have easy access to discussing and receiving informed, empathic  
176 advice about issues such as timing their pregnancies, parental leave, time-out, part-time  
177 appointments, sharing and delegating household tasks, and the like. When the principal mentor  
178 is a man, these needs are often best met by specific additional mentoring around these issues  
179 from a woman.

180

181 I'll discuss your mentor's role in helping you evaluate your "priority list" and time-management  
182 strategies later in this section.

183

184 When listening to you sort through a job offer, it is important for your mentor to help you  
185 recognise the crucial difference between "wanting to be wanted for" and "wanting to do" a  
186 prestigious academic post. You'd be crazy not to feel elated at "being wanted for" any prestigious  
187 job, regardless of whether it matched your career objectives and academic strengths. However,  
188 an "actively listening" mentor can help you decide whether you really "want to do" the work  
189 involved in that post. It is here that they may help you realize that the post is ill-matched to your  
190 interests, priorities, career stage, competencies, or temperament.

191

192 By protection, I mean insulating you from needless academic buffeting and from the bad  
193 behaviour of other academics. Because science advances through the vigorous debate of ideas,  
194 designs, data, and conclusions, you should get used to having yours subjected to keen and  
195 critical scrutiny. For the same reason, you needn't be tossed in at the deep end. Thus, for  
196 example, you should rehearse formal presentations of your research in front of your mentor (and  
197 whoever else is around). They can challenge your every statement and slide in a relaxed and  
198 supportive setting. As a result (especially in these days of PowerPoint), you can revise your  
199 presentation and rehearse your responses to the likely questions that will be asked about it. The  
200 objective here is to face toughest, most critical questions about your work for the first time at a  
201 rehearsal among friends, not following its formal presentation among rivals and strangers.

202

203 Similarly, your mentor can help you recognize the real objectives of the critical letters to the editor  
204 that follow your first publication of your work. Most of them are attempts to show off (the  
205 "peacock phenomenon"), to protect turf, and to win at rhetoric, rather than to promote  
206 understanding. When serious scientists have questions about a paper, they write to its authors,  
207 not to the editor. Your mentors also can help you learn how to write responses that repeat your  
208 main message, answer substantive questions (if any), and ignore the tawdry slurs that your  
209 detractors attempt to pass off as harmless wit.

210

211 Finally, disputes between senior investigators often are fought over the corpses of their graduate  
212 students. This means you. Your mentor must intervene swiftly and decisively whenever they  
213 detect such attacks on you, including especially those related to your sex, gender, race, or  
214 orientation. The intention of your tutor's rapid retaliation needn't be to overcome your attacker's  
215 underlying prejudice or jealousy. It should merely make the repercussions of picking on you so  
216 unpleasant for him that he never tries it again. If it wasn't already part of your core training, a  
217 study of the classic paper on "how to swim with sharks" should be part of this exercise<sup>17</sup>.

218

219 I don't believe that academics ever outgrow their need for mentoring. As you become an  
220 established investigator, you'll require gentle confrontation about whether you are becoming a  
221 recognised "expert" and taking on the bad habits that inevitably accompany that state<sup>18</sup>.  
222 Moreover, given the huge number of highly prestigious but simply awful chairs and deanships that  
223 are pressed upon even unsuccessful academics, these offers need the dispassionate (even

224 cynical) eye of a mentor who can help you distinguish the golden opportunities from the black  
225 holes. Finally, mentors can help senior academics find the courage to seize opportunities for  
226 radical but fulfilling and even useful changes in the directions of their careers. For example, I am  
227 ever indebted to my then-mentor Bill Spaulding, who helped me confirm the sense, and then find  
228 the courage, to repeat my internal medicine residency shortly before my 50<sup>th</sup> birthday.

229  
230 What should you look for when picking a mentor (or in sizing up the one to whom you've been  
231 assigned)? I think your mentor should possess five crucial prerequisites:

- 232
- 233 1. Your mentor has to be a competent investigator. Although most will be clinicians, this needn't  
234 be the case. Some of the most successful academic clinicians I know (including me) were  
235 mentored by biostatisticians .
  - 236  
237 2. Your mentor must not only have achieved academic success themselves, but must treat you  
238 accordingly. That is, your mentor must feel secure enough that they are not only comfortable  
239 taking a back seat to you in matters of authorship and recognition. They must actively pursue  
240 this secondary role. Everything fails if your mentor competes with you for recognition.  
241 Unfortunately, such competition is common, and you should seek help from your chair or  
242 program director if this happens to you (I devote lots of time to trying to resolve such conflicts  
243 before they destroy friendships and damage careers).
  - 244  
245 3. Your mentor should not directly control your academic appointment or base salary. Such  
246 controls interfere with the free and open exchange of ideas, priorities, aspirations, and  
247 criticisms. For example, you may find it difficult to turn down an irrelevant, time-consuming  
248 task offered by your mentor when they also control your salary.
  - 249  
250 4. Your mentor must like mentoring and be willing to devote the time and energy required to do  
251 it well. This includes a willingness to explore and solve both the routine and the extraordinary  
252 scientific and personal challenges that arise when they take on this responsibility.
  - 253  
254 5. Finally, your mentor must periodically seek feedback from you about how well they are  
255 performing. They must periodically evaluate their own performance, decide whether they  
256 remain the best person to mentor you, and identify ways to improve their mentoring skills.

257  
258 Do the benefits of mentoring flow just one way, or do mentors benefit as well? A qualitative study  
259 of Faculty Advisors in Maryland identified several benefits of being a mentor<sup>19</sup>:

- 260
- 261 • An enhanced academic reputation from spotting and developing highly talented young  
262 people.
  - 263 • The development of a dependable junior colleague.
  - 264 • The satisfaction of repaying a past debt owed their own mentors.
  - 265 • The thrill and pride resulting from seeing a protégé succeed.
  - 266 • The enjoyment and excitement of taking partial credit for their protégé's success.

267  
268 Making and updating your "priority-list"

269  
270 You should start making and updating your "priority list" as soon as you gain the smallest degree  
271 of control over your day-to-day activities and destiny. This control might start the day you take up  
272 your first faculty appointment, or maybe after your successful thesis-defence. Updating,  
273 discussing, and acting on this list will be central to your academic success throughout the rest of  
274 your career. You should review and update this list at least every 6 months, and more often if  
275 needed. Its discussion is a key element of the mentoring process. For established academics,  
276 your mentor need no longer be a senior colleague; indeed, the most effective mentoring I'm  
277 receiving in the twilight of my career comes from younger colleagues.

278

279 Making, updating, and following your priority list is trivially simple in format, dreadfully difficult in  
280 execution, and vital to both your academic success and happiness. It has 4 elements:

281

282 List 1: Things you're doing now that you want to quit.

283 List 1a: Things you've just been asked to do that you want to refuse to do.

284 List 2: Things you're not doing that you want to start doing.

285 List 3: Things you're doing that you want to keep doing.

286 List 4: Strategies for improving the balance within your lists by shortening List #1 (want to quit)  
287 and lengthening List #2 (want to start) over the next 6 months.

288

289 Note that the entries on this list are about doing (things like research, clinical practice, teaching,  
290 writing, and the like). They are not about having (things like space, titles, rank, or income). Note,  
291 too, that there are no "cop-out" entries for "things you have to do." These "have-to-do" entries  
292 must be thought through until they can be allocated to either List 1 (*want to quit*) or List 3 (*want to*  
293 *keep doing*).

294

295 You can generate Lists #1 (want to quit) & #3 (want to keep doing) by reviewing your diary for the  
296 period since your last update. List #1a (want to refuse) comes from your mail and from recalled  
297 conversations with bosses or colleagues who were attempting to transform their problems into  
298 your problems.

299

300 List #2 (want to start) is more exciting. It comes from multiple sources:

- 301 • the next research question that logically follows the answer to your last one;
- 302 • ideas that arise from successes and failures with your patients;
- 303 • brain storms that occur while reading, or during conversations with colleagues;
- 304 • ideas that are formed during trips to meetings or other research centres;
- 305 • inspirations that arise in reading other people's research in depth and with a critical eye
- 306 • long-held aspirations that are now within reach;
- 307 • job offers
- 308 • changes in life goals or personal relationships;
- 309 • etc.

310

311 Contemplating the length and content of List #3 (want to keep doing) enables self-diagnosis and  
312 insight. If it's long, is it comfortable but complacent, stifling further growth? Worse yet, is it the  
313 list of an expert, comprising the tasks required to protect and extend your personal "turf" in ways  
314 that are leading you to commit the "sins of expertness"<sup>15?</sup>

315

316 The next, crucial step is to titrate Lists #2 (want to start) & #3 (want to keep doing) against List #1  
317 (want to quit or refuse). Academic and personal disaster results from a dislocation between what  
318 you are doing and what is expected of you. This dislocation is inevitable when you fail to stop  
319 doing enough old things on List #1 (want to quit or refuse) to make it possible to pursue List #2  
320 (want to start) while keeping up with List #3 (want to continue).

321

322 Dislocation and its sequelae are not new, and their causes have been acknowledged for  
323 decades. The special vulnerability of clinicians was reported over 20 years ago as they were  
324 already experiencing the constant pressure of trying to provide more and better patient care with  
325 resources that had already begun to diminish<sup>20</sup>.

326

327 For "time-imbalanced" clinician-scientists, there are two outcomes. First, you can work day and  
328 night, keep up, and trade your family, friends, and emotional well-being for a reputation as a  
329 "world-class" academician. Second, regardless of whether you work day and night, you can fall  
330 behind and gain a reputation as a "non-finisher." Either way, you increase your risk of slipping  
331 into emotional exhaustion, cynicism, feeling clinically ineffective, and developing a sense of  
332 depersonalization in dealing with patients, colleagues, and family<sup>21</sup>. The term "burnout" has been  
333 applied to the resulting deterioration of values, dignity, spirit, and will. This process can start

334 early in your career (even during your training), can take years to become full-blown, but by then  
335 has a poor prognosis in terms of ever gaining career satisfaction or personal well-being.

336  
337 Making and up-dating lists has two goals, then. One is the prevention of burn-out. The other is  
338 the realization of a set of research, teaching, and clinical activities that would make it fun to go to  
339 work.

340  
341 All the foregoing leads to List #4, a tactical plan for improving the balance within your lists by  
342 terminating entries in Lists #1 (want to quit or refuse) and having more time for Lists #2 (want to  
343 start) and #3 (want to continue). You will add greatly to your academic reputation when your List  
344 #4 (improving the balance) advocates gradual and orderly change through evolution, such as  
345 giving 6-months notice on List #1 (want to quit) entries and helping find and train your successor.  
346 Along the way, you can gain administrative skills by sorting out which of the List #1 (want to quit)  
347 tasks can be delegated to your assistants, with what degrees of supervision and independence.  
348 By the same token, it will greatly damage your academic reputation if your List #4 (improving the  
349 balance) calls for revolution, resignation, or running away.

350  
351 My psychiatric colleagues taught me that troubled families achieve about 80% of the benefits of  
352 family therapy before they ever sit down with a therapist. The explanation is that they have  
353 already acknowledged their problem and resolved to seek help in solving it. I likewise suggest  
354 that most of your benefit from the periodic priority-list will occur before it is presented and  
355 discussed with your mentor. Nonetheless, additional insights can come with presenting your lists  
356 to someone else. Moreover, additional List #4 strategies for improving the balance, such as  
357 learning how to say “no” constructively, can arise in these discussions.

358  
359 Aspiring clinician-investigators, especially women, often face their greatest academic demands  
360 during the period of greatest physical and emotional dependency of their children and partners.  
361 The ability to discuss gender-specific conflicts in balancing priorities with an informed, empathic  
362 mentor is essential.

363  
364 The List #4 strategies for improving the balance that emerge from these discussions often focus  
365 on the effective and efficient use of time, which leads us to the third determinant of academic  
366 success: time-management.

367  
368  
369

### Time-Management

370  
371 The most important element of time-management for academic success is setting aside and  
372 ruthlessly protecting time that is spent writing for publication. I've encountered several successful  
373 academics whose only control over their schedule has been protected writing time. Conversely,  
374 I've met very few academics who succeeded without protecting their writing time, regardless of  
375 how well they controlled the other elements of their schedules. For some academics, this  
376 protected writing time occurs outside “normal” working hours, but the price of such nocturnal and  
377 week-end toil is often paid for by family and friends, and is a set-up for burn-out. The  
378 prototypically successful academic sets aside one day per week (except during periods of  
379 intensive clinical responsibilities; vide infra) for this activity, and clearly means it by telling  
380 everyone that they aren't available for chats, phone calls, committees, classes, or departmental  
381 meetings that day.

382  
383 I've never admired the publications of any academic who told me writing was easy for them;  
384 those whose work I admire tell me they find it very difficult to write (although many find it  
385 nonetheless enormously enjoyable and gratifying). Given the difficulty of writing well, no wonder  
386 so many academics find other things to do when they should be writing for publication. The great  
387 enemy here is procrastination, and rigorous self-imposed rules are needed for this protected  
388 writing time:

389 • it is not for writing grants,

- 390 • not for refereeing manuscripts from other academics (aren't they already ahead of you
- 391 with their writing?),
- 392 • not for answering electronic or snail mail,
- 393 • not for keeping up with the literature,
- 394 • not for responding to non-emergencies that can wait until day's end,
- 395 • not for making lists of what should be written about in the future,
- 396 • not for merely outlining a paper, and
- 397 • not for coffee-breaks with colleagues.

398  
399 Early on, self-imposed daily quotas of intelligible prose may be necessary, and these should be  
400 set at realistic and achievable levels (as small as 300 coherent words for beginners).

401  
402 It is imperative that no interruptions occur on writing days. Unless you are protected by a ruthless  
403 secretary and respected by garrulous colleagues, this often can best be achieved by creating a  
404 "writing room" away from the office; whether this is elsewhere in the building or at home depends  
405 on distractions (and family obligations) at these other sites (for a time, I simply traded offices with  
406 a colleague who wrote the same day as I). Writing in a separate, designated room permits you to  
407 create stacks of drafts, references and the other organized litter that accompanies writing for  
408 publication. It also avoids your unanswered mail, unrefereed manuscripts, undictated patient  
409 charts and the other distracting, disorganized litter of a principal office. Moreover, if email is  
410 disabled in the computer in your writing office, a major cause for procrastination is avoided.

411  
412 Mondays hold three distinct advantages as writing days. First, the things that "can't wait" are  
413 much more likely to arise on Fridays, and very few things that arise over the week-end can't wait  
414 until Monday night or Tuesday. Second, a draft that gets off to a good start on Monday often can  
415 be completed during brief bits of free time over the next 4 days and sent out for comments by  
416 week's end. Third, the comforting knowledge on a Sunday night that Monday will be protected for  
417 writing can go far to improving and maintaining your mental health, family function, and  
418 satisfaction as an aspiring academic. And, of course, the more of your colleagues who write on  
419 the same day each week, the greater the opportunity for trading offices and the lesser the  
420 conflicts in scheduling meetings on other days in the week.

421  
422 The second important element of time-management requires you to schedule clinical activities  
423 with great care. On the one hand, you want to maximize the delivery of high-quality care and  
424 high-quality clinical teaching. On the other hand, you want to avoid, or at least minimize, conflicts  
425 with the other elements of your academic career. Of course, your clinical work should  
426 complement your research. Indeed, your clinical observations, frustrations and failures should be  
427 a major source of the questions you pose in your research. But both of them require your full  
428 attention. Having to switch back and forth between them several times a week is a recipe for  
429 frustration and failure.

430  
431 I reckon this conflict is best resolved in in-patient disciplines by devoting specific blocks (of, say,  
432 one month) of "on-service" time to nothing but clinical service and teaching. When on-service,  
433 your total attention is paid to the needs of patients and clinical learners. No time is spent writing,  
434 travelling, attending meetings, or teaching non-clinical topics. This total devotion to clinical  
435 activities often will permit you to take on more night call and a greater number of patients and  
436 clinical learners (on my medical in-patient service at Oxford I was on call every 3<sup>rd</sup> day, my clinical  
437 team of up to 16 learners and visitors, and admitted 230 patients per month, and in addition to our  
438 individual daily bedside rounds my Fellows and I provided 13 hours of extra clinical teaching each  
439 week).

440  
441 When "off-service" your time and attention should shift as completely as possible to research and  
442 non-clinical teaching. Ideally, you should have no night-call when you are off-service. Moreover,  
443 you should not routinely see every admitted patient at a post-hospital out-patient follow-up visit



444 (again on my service, post-admission and pre-discharge telephone conversations with the  
445 patients' GPs reduced out-patient follow-up to <5% of my admissions).

446

447 If you are worried about getting rusty or out of date between your months on service, precede  
448 them by shadowing a colleague for a week just before reassuming command (I alternated  
449 between the coronary care and intensive care units for my "warm-up" weeks). Like so many  
450 other elements of your academic success, this sort of time-management is fostered by the  
451 development of a team of like-minded individuals who spell one another in providing excellent  
452 clinical care.

453

454 Clinicians in other fields (e.g., intensive care and many of the surgical specialities) sometimes find  
455 it preferable to allocate time to clinical practice in units of one week. Another variant of  
456 scheduling is practiced by two of my former residents whose current incomes are derived solely  
457 from private practice. They devote 3 weeks each month to intensive clinical practice in order to  
458 free up the fourth for their highly successful applied research programmes.

459

460 This still leaves you with the out-patient dilemma. Academic clinicians usually accept ambulatory  
461 referrals to their general or sub-specialty clinics 1 or 2 half-days every week. In addition to the  
462 time you spend during the clinic session itself, you have to spend several hours during the  
463 following 2-3 days chasing down lab results, talking with referring clinicians, and dictating notes.  
464 This additional time conflicts with your research, teaching, and travel to meetings and other  
465 centres, diminishing your research and writing productivity, peace-of-mind, and fun.

466

467 Moreover, I think that this pattern of weekly clinics lowers the quality of patient care. What  
468 happens when you are 1000 Km away when one of your out-patients gets sick during the  
469 diagnostic tests you've ordered or has an adverse reaction after starting a new treatment  
470 regimen?

471

472 A solution you should at least consider is to stop holding your out-patient sessions every week  
473 and concentrate them into back-to-back-to-back clinics just once a month. By staying in town for  
474 the few days following this out-patient "blitz," you can tie up four clinics' loose ends all at once  
475 (especially if you can delegate chasing down lab results) and the rest of your month is free for  
476 academic activities.

477

478 My final advice concerns taking time to go to annual scientific and clinical meetings. Such  
479 meetings usually are fun and relaxing. They also can be highly educational (especially, as noted  
480 above, when you attend with your mentor), and sometimes offer the chance to meet or at least  
481 observe the ephemeral experts in the field. However, you have to pay the opportunity costs of  
482 attending meetings. You have taken time away from your teaching and patients, and especially  
483 from your writing. I know lots of world-renowned clinician scientists who seldom or never go to  
484 annual meetings (which should show you that attending them is not a prerequisite for academic  
485 success).

486

487 You might want to set up and follow some rules about annual meetings. I close with the set I give  
488 my fellows:

489

- 490 1. Never go to an annual meeting for the first time unless you have submitted an abstract  
491 that will get published in a journal (thus inaugurating your curriculum vitae).
- 492 2. Never go to that meeting a second time until you have a full paper based on that earlier  
493 abstract in print or in press (thus making a major contribution to your curriculum vitae and  
494 academic recognition).
- 495 3. Thereafter, only go to that meeting if both Rule #2 has been met and this year's abstract  
496 has been selected for oral presentation (or you have been invited to give the keynote  
497 lecture).

497

498

499

REFERENCES

- 
- <sup>1</sup> Many elements of this section are taken from: Sackett DL. On the determinants of academic success as a clinician-scientist. *Clin Invest Med*. 2001;24:94-100.
- <sup>2</sup> Murdoch C. *BMJ* 2002;324:1275.
- <sup>3</sup> Sackett DL: The fall of “clinical research” and the rise of “clinical-practice” research. *Clin Invest Med* 2000;23:331-3.
- <sup>4</sup> Centre for Evidence-Based Medicine at the University of Oxford: Levels of Evidence. <<http://cebm.jr2.ox.ac.uk/docs/levels.html>>
- <sup>5</sup> Verrier ED: Getting started in academic cardiothoracic surgery. *J Thorac Cardiovasc Surg* 2000;119(Part 2):S1-S10.
- <sup>6</sup> Morzinski JA, Diehr S, Bower DJ, Simpson DE: A descriptive, cross-sectional study of formal mentoring for faculty. *Fam Med* 1996;28:434-8.
- <sup>7</sup> Goldman L: Blueprint for a research career in general internal medicine. *J Gen Intern Med* 1991;6:341-4.
- <sup>8</sup> Rogers JC, Holloway RL, Miller SM: Academic mentoring and family medicine’s research productivity. *Fam Med* 1990;22:186-90.
- <sup>9</sup> Applegate WB: Career development in academic medicine. *Am J Med* 1990;88:263-7.
- <sup>10</sup> Stange KC, Heckelman FP: Mentoring needs and family medicine faculty. *Fam Med* 1990;22:183-5.
- <sup>11</sup> Williams R, Blackburn RT: Mentoring and junior faculty productivity. *J Nurs Educ* 1988;27:204-9.
- <sup>12</sup> Eisenberg JM: Cultivating a new field: Development of a research program in general internal medicine. *J Gen Intern Med* 1986;1(Suppl):S8-S18.
- <sup>13</sup> Bland CJ, Schmitz CC: Characteristics of the successful researcher and implications for faculty development. *J Med Ed* 1986;61:22-31.
- <sup>14</sup> Palepu A, Friedman RH, Barnett RC, Carr PL, Ash AS, Szalacha L, Moskowitz MA: Junior faculty members’ mentoring relationships and their professional development in U.S. medical schools. *Acad Med* 1998;73:318-23.
- <sup>15</sup> Levinson W, Kaufman K, Clark B, Tolle SW: Mentors and role models for women in academic medicine. *West J Med* 1991;154:423-6.
- <sup>16</sup> Steiner JF, Lanphear BP, Curtis P, Vu KO. Indicators of early research productivity among primary care fellows. *J Gen Intern Med* 2002;17:845-51.
- <sup>17</sup> Johns RJ: How to swim with sharks: The advanced course. *Trans Assoc Am Physicians* 1975;88:44-54.
- <sup>18</sup> Sackett DL: The sins of expertness and a proposal for redemption. *BMJ* 2000;320:1283.
- <sup>19</sup> Romberg E, Mentoring the individual student: Qualities the distinguish between effective and ineffective advisors. *J Dent Ed* 1993;57:287-90.

---

<sup>20</sup> McCue JD. The effects of stress on physicians and their medical practice. *N Engl J Med* 1982;306:458-63.

<sup>21</sup> Maslach C, Leither MP. *The truth about burn-out*. San Francisco: Josey-Bass, 1997. Pp 13-15.