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Clinician-trialist rounds:

8. Mentoring – part 2: the structure and function of effective mentoring: linkage, resources, and academic opportunities

Sharon E Straus* and David L Sackett

The first of four *Clinician-Trialist Rounds* in this series summarized some evidence on why clinician-trialists like you had better get mentored if you are to achieve academic success, realise personal satisfaction, and have fun [1]. The second and third *Rounds* will describe the structure and function of effective mentoring, and the last one will define the essential attributes of an effective mentor and help you decide whether you're ready to take on this role. In preparing these *Rounds*, we've drawn upon both the relevant literature and our own previous works on these matters [2,3].

Effective mentoring makes sure that mentees are linked to excellent mentors, obtain the resources required for success, are offered the full spectrum of academic opportunities, receive both career and personal advice, and are protected from academic predators. We'll cover the first three of these elements in this *Round*.

Linkage

The really good RCT groups link prospective graduate students and junior faculty with mentors as an essential element of their recruitment process. Indeed, if the outfit you are considering joining doesn't describe a mentorship programme on its website or tell you about it during your first visit, you should reconsider going there.

Linkage strategies vary, but the one preferred in mentee exit-surveys provides prospective mentees with brief biographies of available mentors and encourages brief, individual meetings between them until consensual pairings are formed. Dr.

Straus often uses a 'speed mentoring' approach in which she invites new mentees to meet several potential mentors within one evening by scheduling appointments every 15 min. When organised as part of a national or international meeting, it gives mentees the opportunity to meet potential mentors from different cities and to explore possibilities for later fellowships and jobs. Formal assignment of mentors by a department chair was the least popular linkage strategy among mentees; they felt it led to superficial and artificial relationships.

Although a recent study of otolaryngology residents found that the least important characteristics for mentorship matching were age, gender, and race [4], if you want to be matched for any of these be sure to let your recruiters know. Finally, in addition to seeking a sense of interpersonal comfort ('chemistry') and learning how the prospective mentor has worked with previous mentees, you should ask about the latter's subsequent careers to see how well they match your own aspirations. If the fit looks good, we suggest that you get additional feedback about your candidate mentor from their previous mentees.

The first meeting

The relationship usually starts in the mentor's office and this has to be a place where you feel safe and welcome. The first session should address the 'ground rules' for the relationship, including especially the assurance that all mentoring conversations are kept confidential. These ground rules should also include a discussion of apportioning credit for any intellectual property (such as grants

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and publications) which may develop from the mentorship.

Subsequent meetings

Subsequent mentoring meetings should be spaced and timed to fit your changing needs, but should be scheduled in advance. You will gain the most from them when you keep and present updated lists of both prioritised topics for discussion and urgent items requiring action. Communication between meetings can occur *via* email and telephone.

For their part, effective mentors employ a 'reiterate and review' process in which they summarize and clarify the discussion topics and action items to ensure mutual understanding of the issues and what is to be done about them. The mentoring literature suggests that it may be helpful for the mentor to use a checklist or task-list to frame this discussion to ensure that time is spent addressing the full range of your career, administrative, educational, and work-life/balance issues [5].

Resources

Good RCT centers give graduate students or new faculty like you sufficient office space and equipment, email and Internet access (including free downloads of the world-literature), photocopy rights, and enough secretarial/professional assistant support to free you from administrative tasks that detract from your academic pursuits. Great RCT centers also provide you with money to go to out-of-town meetings and courses, start-up or bridge funding until you get your own grants, and – if necessary – salary supplements when you (and your family) can't survive on your fellowship.

Some programs provide all or most of these resources to everyone who joins their ranks; others provide few or none unless coerced or shamed into doing so. The bottom line here is that you shouldn't have to grovel or beg to fill any resource gaps. An effective mentor finds out whether you've received the resources you need, and 'wheels and deals' with the hierarchy to fill any gaps. After all, they know the ropes and have the clout to get rapid results, protecting you and your precious academic time.

Academic opportunities

Effective mentors examine every item that crosses their desks for its potential contribution to your scientific development and academic advancement. It is important that these opportunities are offered

without coercion and accepted without resentment. Crucially, they must never involve the off-loading of odious tasks with little or no academic content from overburdened mentors to beholden mentees. Here are 10 opportunities they should offer you:

1. At the top of the list is the opportunity to join one of their ongoing research projects. In addition to giving you 'hands-on' practical experience in applying your graduate course contents, you'll also learn how to create, manage, and function as a member of a collaborative team.

But taking on a piece of your mentor's project to run, analyse, 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 Curriculum Vitae (CV) will benefit. On the other hand, being given a project by a less effective mentor can be harmful if they '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' robs you of the opportunity to develop four of your most important research skills:

- First, you'll lose the opportunity to learn how to recognise and define a problem in human biology or clinical care on your own.
- 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. Without these research skills, you'll master only the methodological tactics 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.

In any case, you may not have the same interest and enthusiasm for answering your mentor's research question as answering your own, and

this conflict can not only strain your relationship but also delay your productivity in the areas of your primary interest. Your research passion has to come first.

2. The next opportunity comes from carrying out duplicate, blind (and, of course, confidential) refereeing of manuscripts and grants. The comparison of these critiques not only sharpens your critical appraisal and writing skills, but also reveals your mentor's refereeing style and forces you to develop your own.
3. If local ground rules permit you to accompany your mentor to meetings of ethics and grant review committees, you'll learn firsthand how these groups function.
4. As soon as your competency permits, your mentor can include you in responding to their invitations from prominent, refereed journals to write editorials, commentaries, or essays. Not only will the joint review and synthesis of the relevant evidence be highly educational, it also will provide you with the opportunity to learn how to write with clarity and style. Finally, it adds an important publication to your CV. Indeed, as soon as your growing competency warrants, you should become the lead author of such pieces. The ultimate objective is for you to become the sole author (all the sooner if your mentor casts a wide shadow). One note of caution, however, applies to co-authoring invited chapters for books: unless the book is a very prestigious one, its authorship will add little or no weight to your CV.
5. After showing you how they handle 'bread and butter' speaking invitations, your mentor can refer some of them to you so that you can learn how to give 'boilerplate' lectures (especially at nice venues and for generous honoraria).
6. Your inclusion in the social as well as academic events that comprise the visit of colleagues from other institutions should become automatic.
7. You should seize opportunities to join your mentor's group at scientific meetings, especially annual gatherings of the research clan. This has several advantages:
 - First, it gives you the chance to meet and hear the old farts in your field.
 - Second, it allows you to meet, debate, and explore collaborations with the other newcomers who will become your future colleagues.
 - Third, you can compare your impressions and new ideas with your mentor while they

are fresh, in a relaxed and congenial atmosphere.

Another note of caution, however: spending time going to meetings carries risks as well as benefits, since it robs your writing and research time.

8. Your mentor should offer you the opportunity to observe, model, and discuss their teaching strategies and tactics in both clinical and classroom situations. When you are invited to join your mentor's clinical team, you can study how they change them as they move from the post-take/morning report, to the daily review round, to the clinical skills session, to grand rounds. With time, you should seize the opportunity to take over these sessions and receive feedback about your performance. This same sequence of observation, evaluation, and then taking over should be followed in teaching courses and leading seminars in research methods. As soon as you've defended your own thesis (or equivalent), you'd gain a lot from participating along with your mentor in fellows' and postdocs' advisory and thesis committees.
9. As you become an independent investigator, your opportunities mature and incorporate two additional areas. First, your mentor should start nominating you to more advanced opportunities for increasing your academic experience, networking, and recognition. Examples here include scientific committees (e.g., grant review committees), task forces (e.g., for the development of methodological standards or evidence-based guidelines), and symposia (especially those that can result in first-authored publications). Second, your mentor should start nominating you for career awards and academic posts, writing letters of support and counselling you as you negotiate space, support staff, rank, and salary. Finally, your mentor should continue to be available for discussions of your triumphs and troubles and for letters of support as you proceed through the various stages of academic development, promotion, and tenure.

As usual, that's not the end of this round, for our discussion period has just begun. Rounders who have other or contrary thoughts about effective mentoring, or have questions or comments about the ones presented here are encouraged to send them to the Editors, with a copy to me at sackett@bmts.com. I'll summarize them in a later round.

Part 3 in this series of *Clinician-Trialist Rounds* on mentoring will describe how effective mentors provide mentees like you with career and personal advice, and how they protect you from academic predators.

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