

Mentoring and networking: how to make it work

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Mentoring and networking are critical components for success in science. Here the importance and steps required for good mentoring and networking are described.

At the annual meeting of the American Association of Immunologists in Miami, Florida, in May 2007, the Committee on the Status of Women sponsored a workshop that focused on mentoring and networking for scientists. Mentoring is considered so important for the development of scientists that the National Science Foundation now requires its grantees to provide information on how they will mentor postdoctoral fellows. The benefits of mentoring and networking were discussed at the workshop, and advice on how to accomplish both was provided. The roles of mentors in young scientists' careers, including assistance with scientific and administrative duties, were presented. Why a mentor is necessary and the best way to choose a mentor were discussed, along with how to be a good mentee. Also, the importance of networking connections and how they benefit scientists at all stages of a career were presented. Overall, this session emphasized that scientists cannot 'go it alone' and that interacting with others can greatly benefit career advancement.

Mentoring: how and why

A mentor is a trusted counselor or guide. In terms of academia, a senior faculty member usually functions as a mentor by providing direction and support in the professional

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career development of new, untenured faculty members. Mentoring is known to improve career satisfaction, thereby helping to increase recruitment and employee retention time. Thus, there are clearly benefits and incentives for both the mentee and the institution.

Why is a mentor necessary? At many institutions, the requirements for promotion and tenure are somewhat vague, and it may be unclear what is expected of junior faculty members. A mentor can help explain what is needed for success in a particular field in immunology and at a particular institution. A mentor can also provide guidance in research direction. Newly independent scientists may find it difficult to determine an appropriate direction for their research program. In this context, a mentor can help to set priorities and goals for projects and help reach these goals, for example, by reviewing grants and manuscripts of junior faculty members before submission. Identifying potential research collaborations not only to expand the research potential of newly independent researchers but also to provide new networking opportunities and increase their visibility in the field is another useful function of mentors. The main responsibility of students is research, but faculty members must balance basic research with teaching, service on study sections, administrative duties and, in some cases, clinical responsibilities. Juggling family life with all this makes it even more challenging. A mentor may help junior researchers prioritize these many responsibilities and provide guidance on the most important areas to focus on at different points in a career. However, an individual mentor is unlikely to provide guidance in all these areas, which is why many departments and schools have adopted a committee or team approach to mentoring.

What is the best way to find a mentor? Many institutions are beginning to establish formal mentoring programs, and all junior researchers are encouraged to make use of such programs should their institution offer one. If not, it is recommended that the help of the department chair, division chief or other senior faculty member be enlisted to set up informal mentoring relationships. Networking at departmental seminars and in committee meetings may also prove useful. Once a potential mentor is identified, junior researchers should talk with present and past mentees to determine if this person is suitable. For example, does the potential mentor have a reputation for being available and helpful? Notably, although a department chair or division chief may be able to provide advice in many areas of a junior faculty member's career, they should not be the sole mentor, because their primary interest must be the department and not the mentee.

After a mentor (or a team of mentors) is chosen, the mentee should, in preparation for their first meeting, gather the following items: an up-to-date curriculum vitae; information on time spent doing bench research, teaching, administration and clinical responsibilities; and a list of short-term goals (6 months to 1 year) and longer term goals (3 to 5 years). These items should be discussed during the first meeting, as should the format and frequency of these meetings. It is recommended that a mentee meet formally with their committee at least twice a year, although this will vary from person to person depending on the circumstances. At subsequent meetings, goals discussed in the previous meeting should be reviewed and progress should be discussed, as well as any new concerns or problems that have arisen in the interim, along with new goals for the next period. As the mentee



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matures in their faculty position, their needs will obviously change and evolve. Thus, the relationship with the mentor(s) must be periodically reassessed to ensure goals are being met, which can sometimes lead to a change in or addition of mentor(s).

For a mentoring relationship to work, both the mentor and mentee must contribute equally. The mentee needs to take responsibility for the relationship and must be prepared to seek advice from the mentor and be willing to listen to this advice. On the other hand, the mentor must be able to act in the best interest of the mentee rather than the department, school or institution and, of course, must be available to give advice.

Being a mentor and a mentee

Everyone needs career advice and anyone can be a mentor. However, a good mentor is patient and is able to listen, provide advice and determine what the mentee is trying to accomplish in their career. Advice given by a mentor should be clear, without conflict, and transparent, pointing out both the benefits and pitfalls.

Equally, the mentee must identify their goals and determine what help is really necessary to accomplish these. The mentee may need someone to listen, give advice on career and family, and help with career decisions. Alternatively, help may be required to manage employees, direct research and write manuscripts and/or grant proposals. The mentee should be conscious of their career at all times and be informed of the opportunities that exist. In addition, as mentioned above, the mentee must also listen and be prepared to take the mentor's advice.

Good time management is of high priority for a mentee. New faculty members have

many more demands on their time than do postdoctoral fellows or students. In addition to managing laboratory staff, a new investigator must devote effort to writing grants and manuscripts. Learning to manage time is a surprisingly difficult skill. Common problems include spending too much time making lists, starting the same task multiple times, and not taking control, so that projects become delayed by others' mismanagement.

A mentor can assist the mentee in learning how to prioritize tasks and, thus, how to get things done efficiently. High-priority tasks, such as grant submissions and reviewing manuscripts, have deadlines and should be completed promptly. Some lower priority but still important tasks, such as completing experiments and writing manuscripts, are critical for immediate career advancement but generally do not have specific deadlines and therefore run the risk of being put aside. It is critical that this does not happen, because these are very important for career advancement. Other less critical tasks, such as ordering new equipment or settling conflicts in the laboratory, often run the risk of distracting the mentee from completing tasks of higher priority and should not be given rigid deadlines.

A mentor can help the mentee with writing and publishing manuscripts. For a new investigator, it is often difficult to determine when a project should be written up and published. It is essential to balance the 'minimal publishable unit' versus a large, all-encompassing treatise. A short 'minimal publishable unit' will get ideas and results into the literature quickly, but will most likely be published in a lower tier journal. In contrast, a full feature story should have greater impact and will probably be more publishable in a high-tier journal. Publication of

both types of manuscripts can ensure a successful career. Sometimes, especially during the grant-renewal process, expedient publication is the best tactic, and a mentor can help determine where the research is best suited to be published.

Assisting in the preparation of grant applications is another usual task of the mentor. To take advantage of this, the mentee should begin writing early and give the mentor(s) ample time to provide feedback. Grant applications may require several major revisions before they are ready to submit. A mentor can also provide guidance on which type of grant best suits the particular line of study being pursued. For example, an exploratory 2-year proposal may be better than a full-fledged 5-year proposal for a project. A mentor may also be able to suggest additional sources of funding (other than the National Institutes of Health), such as private foundations.

Although establishing a mentor-mentee relationship may take some time, the effort is not onerous and should be rewarding to both parties. Overall, the 'take-home message' is that a mentor should equip the mentee with the necessary advice and tools to establish themselves as a researcher, while the mentee must be prepared to translate advice into action.

How to get started networking

Although many think of networking only in the context of finding a new job, it is also important for continued success in a researcher's present position. Networking involves making meaningful contacts that are long lasting, and it can be accomplished in almost any situation that allows interaction with other scientists. It is essential that all scientists learn how to network, because it enhances the visibility of a researcher's work to others in the field and ultimately boosts a person's success in the scientific arena. It should be remembered that those people met during networking are the very same ones who review grants and manuscripts, invite speakers to give seminars, and provide job references. The 'bottom line' is that researchers are more likely to trust people they know and admire. It therefore behooves all researchers to spend some time networking.

Many networking opportunities present themselves every day. This includes networking with peers, superiors, postdoctoral fellows and students. Departmental colleagues offer great networking connections and can assist junior faculty members with an abundance of career advice. If a department has a seminar series, it is vital to attend and meet the visiting speakers, however busy. Lunch or dinner with the speaker is another great way to network in a more relaxed setting. Connections at an

institution can also be made through service on various institutional committees. This aids contact between peers in different departments, thus leading to the possibility of new collaborative options.

Although networking within an institution is important, making good contacts with scientists outside the institution is also highly recommended. This is especially critical for promotions, as most institutions will ask for external references. Obviously, the better a reference is, the greater the chance for promotion. One option for outside networking is attending small local meetings. Attendance at these smaller meetings eliminates expensive travel costs and provides an easy opportunity for meeting people with similar interests from nearby institutions. In general, scientific meetings, both regional and national, are ideal venues for networking. Although networking at a meeting can be difficult, it is critical that researchers attend meetings and make new contacts.

Researchers should be prepared to briefly describe their work in a casual setting at meetings. All the important points should be conveyed without being too long-winded. When seeking out a particular scientist, it is essential to take time before the meeting to be familiar with their work. Introductions by mentors help place junior faculty members in a specific con-

text and increases the likelihood that the new contact may remember them. Also, during the meeting, it is important to attend poster sessions and other organized functions. Again, this allows for more extended conversations in a more relaxed atmosphere. Also, it is imperative to always wear a name badge during meetings. Business cards that include email addresses and phone numbers are useful to pass to new contacts. In fact, in certain countries, such as Japan, it is customary to give a business card to every new contact.

After the meeting is over, to maintain any new connections, it is imperative to keep in regular contact. Remember that networking connections are beneficial only if contact is maintained. The simplest way to keep in touch is by email. Keep new contacts up to date with research and career progress. Also, if possible, it might be beneficial to outline projects for potential collaboration. This can expand a scientist's research horizons and benefit both parties involved. Another way to maintain connections is an invitation to present a seminar. This provides additional networking opportunities for all involved.

More recently, new and innovative ways to network have become available to the more technologically savvy researcher. One example is Nature Network, which is an online meeting place for local scientists to gather, talk and find

out about the latest scientific news and events in their area (<http://network.nature.com/>). Among other features, the website allows researchers to create personal profiles and set up groups for labs, departments or institutions, and it allows each member to build a network of like-minded scientists. Although networking can take many different forms and is often difficult, in the end, making these new connections will serve any researcher well and help advance their career.

Conclusion

Even though it is not taught in graduate school, it is critical that all young scientists understand that mentoring and networking are valuable tools for their career. These contacts can provide a new scientist advice and assistance that will be beneficial for many years. The National Science Foundation now requires that grantees document how they will mentor postdoctoral fellows, including career counseling and training in writing and teaching skills. A scientist must also understand that both being a mentee and networking require preparation and effort. This investment of time should be seen as an investment in one's career. By taking advantage of mentoring and networking contacts, a scientist's career can be greatly enhanced, leading to new research opportunities and more rapid career advancement.