

“Having the Right Chemistry”: A Qualitative Study of Mentoring in Academic Medicine

Vicki A. Jackson, MD, MPH, Anita Palepu, MD, MPH, Laura Szalacha, PhD, Cheryl Caswell, MBA, Phyllis L. Carr, MD, and Thomas Inui, ScM, MD

ABSTRACT

Purpose. To develop a deeper understanding of mentoring by exploring lived experiences of academic medicine faculty members. Mentoring relationships are key to developing productive careers in academic medicine, but such alliances hold a certain “mystery.”

Method. Using qualitative techniques, between November 1999 and March 2000, the authors conducted individual telephone interviews of 16 faculty members about their experiences with mentoring. Interviews were taped and transcribed and authors identified major themes through multiple readings. A consensus taxonomy for classifying content evolved from comparisons of coding by four reviewers. Themes expressed by participants were studied for patterns of connection and grouped into broader categories.

Results. Almost 98% of participants identified lack of mentoring as the first (42%) or second (56%) most important factor hindering career progress in academic

medicine. Finding a suitable mentor requires effort and persistence. Effective mentoring necessitates a certain chemistry for an appropriate interpersonal match. Prized mentors have “clout,” knowledge, and interest in the mentees, and provide both professional and personal support. In cross-gender mentoring, maintaining clear boundaries is essential for an effective relationship. Same-gender or same-race matches between mentor and mentee were not felt to be essential.

Conclusions. Having a mentor is critical to having a successful career in academic medicine. Mentees need to be diligent in seeking out these relationships and institutions need to encourage and value the work of mentors. Participants without formalized mentoring relationships should look to peers and colleagues for assistance in navigating the academic system.

Acad. Med. 2003;78:328–334.

Dr. Jackson is instructor of medicine, Departments of Medicine and Palliative Care, Dana Farber Cancer Institute, Brigham and Women’s Hospital, and Massachusetts General Hospital Harvard Medical School, Boston, Massachusetts. *Dr. Palepu* is assistant professor of medicine, Division of General Internal Medicine, St. Paul’s Hospital, University of British Columbia, Vancouver, B.C., Canada. *Dr. Szalacha* is assistant professor, Department of Education, Brown University, Providence, Rhode Island. *Dr. Caswell* is senior research scientist, director, Survey Research Center, New England Research Institutes, Watertown, Massachusetts. *Dr. Carr* is associate professor of medicine, associate dean of students, Boston University School of Medicine, Boston, Massachusetts. *Dr. Inui* is president and CEO, Regenstrief Institute, Sam Regenstrief professor of health services research, associate dean for health care research, and professor of medicine, Indiana University School of Medicine, Indianapolis.

Correspondence and requests for reprints should be addressed to Dr. Jackson, Dana Farber Cancer Institute, 44 Binney Street, SW 411, Boston, MA 02115; e-mail: (vjackson@partners.org).

Mentoring relationships are often cited as key to developing productive careers in law, business, and medicine.^{1–3} Palepu and colleagues surveyed 3,013 full-time faculty in academic medicine using the 177-item National Faculty Survey (NFS). They focused their analyses on 1,808 junior faculty and found more than 50% of respondents had had a recent mentoring relationship. There was no difference in prevalences of a mentoring relationship with respect to gender or racial and ethnic minorities, although most mentors in the study were white men, a fact that highlighted the limited numbers of women and minorities in senior positions.⁴

Mentoring relationships are prevalent in academic medicine. Studies have

shown that faculty members who identified a mentor felt more confident than their peers, were more likely to have a productive research career, and reported greater career satisfaction.^{4–6} Recognizing the importance of mentoring, many institutions have created formalized mentoring programs to assist faculty members with career advancement.^{7–9} Although mentoring has been well described in other professions, the characteristics of successful mentoring relationships in academic medicine are just beginning to be described.

Recently, Ramanan et al. surveyed over 700 Harvard faculty members who reported having had a mentor and found several characteristics of the mentoring relationship to be associated with

increased overall satisfaction with mentoring. These qualities were keeping in touch regarding progress, not abusing power, helping to build professional networks, providing career and research advice, and helping the protégé improve communication skills.¹⁰

The most common form of mentoring is a relationship in which a senior individual works to promote the career of a more junior individual. Mentoring, as described by the joint committee of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine consensus statement on mentoring, is a personal and professional relationship.¹² In its traditional form, this complicated relationship is subject to transference, countertransference, personality clashes, and lack of congruence of the mentor's and the protégé's goals.⁷ The studies of mentoring in academic medicine to date have used primarily quantitative methods which, although helpful, give only limited insight into the experiences of the protégé in this complex relationship.

The purpose of our study was to develop a deeper understanding of mentoring by exploring the lived experiences of academic medicine faculty members. We sought to describe empirically the mentoring experience, describe qualities of more and less effective mentoring relationships, and develop a language to describe these relationships. This knowledge should foster more meaningful discussion and assist with developing mentoring programs. Finally, we explored special challenges in mentoring with respect to gender and race, as well as options for those who do not have a mentor.

METHOD

We chose in-depth, individual telephone interviews in a semistructured format as our data-gathering method for the qualitative assessment of faculty members' experiences. The content of the telephone interview questions was derived from a review of the mentoring

literature and the analysis of content from a focus group on mentoring. The sample for the mentoring focus group consisted of faculty members who answered two questions in the 1995 NFS⁴: Can you identify a person or persons who currently performs some aspect of mentoring to you?; Have you had a mentor in the past three years?

From this sample, we chose faculty members who held ranks of less than associate professor, because junior faculty were felt to be most in need of mentoring. Nine faculty respondents had not had a mentor. Seven had had a mentor; two of these had had poor mentoring experiences. To ascertain a variety of experiences we chose faculty members based on their responses to questions in the NFS on mentor behavior: Has a mentor reviewed your career progress at least annually?; Has your mentor facilitated opportunities for co-authoring and reviewing articles, editorials, or book chapters?; Has your mentor facilitated opportunities for research collaboration, being on an editorial board, invitations to or chairing of conferences?; Has your mentor enhanced your visibility outside your institution?

Our focus group had seven academic medicine faculty members who had indicated they had had a mentor: four participants were men, four were clinical faculty members, and three were basic science faculty members. Six participants had had more than ten years experience at their current institutions. We asked faculty to describe optimal and suboptimal mentoring experiences. The focus group proceedings were audiotaped and analyzed by four readers (VJ, PC, AP, TI), who identified key words, phrases, and topics, grouping them by consensus into major themes.

We used the focus group proceedings and a literature review to design the telephone interview questionnaire in our study. Faculty members with ranks of less than associate professor were chosen from the 1,808 respondents to the 1995 NFS based on their answers to the same mentoring questions the focus

group participants answered. We determined our final sample size for the in-depth interviews by the usual rule of "sufficiency"; that is, when none of us (VJ, PC, AP, TI) recognized new, unique content in reviews of several additional transcripts, we stopped contacting more faculty members for interviews.

Between November 1999 and March 2000, two of us (AP and CC) interviewed 16 faculty members using this instrument. Our study was approved by the Human Subjects Review Committee of the Massachusetts General Hospital and the Internal Review Board at the New England Research Institutes. We obtained informed consent from all participants.

Our 16 participants were given a definition of mentoring adapted from Healy and Welchert to use as a frame of reference in the interview: Mentoring is a dynamic reciprocal relationship in a work environment between two individuals where, often but not always, one is an advanced career incumbent and the other is a less experienced person. The relationship is aimed at fostering the development of the less experienced person.¹³

We sent the interview questionnaire to participants in advance of the in-depth telephone interview so they could answer the closed-ended questions and have time to ponder their responses to the open-ended questions. In the closed-ended portion of the interview, we asked participants to rank the relative importance of mentoring among 11 career-promoting factors, including negotiation skills, written and oral communication skills, amount of time available for professional work, and institutional policies in: (1) advancing their careers in academic medicine, and (2) advancing the careers of other faculty members in academic medicine. Participants were also asked to rate their mentors' behaviors with respect to career sponsorship (e.g., helping to navigate the academic system) and psychosocial support (e.g., help in balancing

personal and professional lives). In the qualitative portion of the interview, we asked participants to describe the most important mentoring experience in their professional careers to date as well as any challenges experienced in the mentoring relationship. Demographic data were also solicited in the telephone interviews, which lasted 30 minutes on average and were taped and later transcribed for review. Authors AP and CC recorded brief field notes during and after each interview.

Qualitative Analysis

Four readers used open coding in the multiple readings of the transcripts to identify major ideas and themes revealed in the participants' words, phrases, metaphors, and examples. Distinctive themes and those themes expressed by multiple participants were studied for patterns of connection and grouped into broader categories. Consensus coding taxonomies emerged through discussion among all readers during serial meetings at which the codings of each transcript were compared among reviewers.

Quantitative Analysis

We estimated descriptive statistics (means, standard deviations, and correlations) using standard statistical software. The size of our sample precluded hypothesis testing. The quantitative items were used only to describe the sample.

RESULTS

Participants' Demographics

Of the 16 participants, nine were men and seven were women; the average age was 45 years. Ten participants identified themselves as white, four as black, and two as Hispanic. Twelve had completed residency, while five had trained in fellowships. Six were trained in internal medicine. More than 50% held ad-

vanced degrees; four had master's degrees and five had PhDs.

Closed-ended Questions

Approximately 98% of the participants ranked "lack of mentoring" as the first (42%) or the second (56%) most important factor hindering their career progress in academic medicine. Participants who chose "lack of mentoring" second ranked either their "negotiation skills" or the "limited time for professional work" as the most important factor hindering their career progress.

We asked participants to rate their mentors' academic and psychosocial activities on average on a five-point Likert scale (1 = poor to 5 = excellent). For academic activities, the highest ratings were given to mentors' assisting in preparation for promotion (mean = 4.2, SD = .75) and helping mentees to develop an independent academic identity (mean = 4.3, SD = .81). The lowest rating was given to mentors' abilities to assist the mentees in negotiating their salaries (mean = 2.0, SD = 1.2). For the psychosocial activities, the highest ratings were given to mentors' listening carefully to their mentees ideas and concerns (mean = 5.0, SD = 0), setting a high standard for their performances (mean = 4.8, SD = .40), and having a sense of the mentee as a person as well as a professional (mean = 4.8, SD = .40).

Participants without a mentor rarely had any individual (such as a department chairperson or another colleague) take on the responsibilities of mentor. Those without a mentor would, at times, have had someone who would give them opportunities to increase their visibility within their medical school (mean = 2.4, SD = .96) and had other colleagues who had a sense of them as a person as well as a professional (mean = 3.5, SD = 1.0).

Qualitative Study

The principal themes identified by reviewer consensus from the interview

transcripts were summarized in several domains: how mentors and mentees find one another, characteristics of the mentoring relationship, recognizing potential—the academic "parent" or coach, supportive/ enabling actions—"under my wing," special challenges of gender and race, and being without a mentor. In the sections that follow, we summarize the content in these thematic domains, using fragmentary quotations from the interviews to illustrate the points.

How do mentors and mentees find one another? In general, emerging protégés do the work of finding a suitable mentor. Participants identified locating a mentor early in one's academic career as critical. As a result, they felt it was important to search for a mentor in many places—inside and outside the department and institution, and among peer colleagues as well as more senior faculty members.

Successful mentoring relationships can come together informally, through relationships that evolve naturally over time toward mentoring commitments, or from formal assigned mentoring relationships. Participants had a number of suggestions for finding mentors. One suggested:

Advice that I do give to new faculty members is to go set up an half hour appointment with everyone in your department. Just go sit and talk with them and that way you start to find out who would be the natural mentors.

Persistence is also necessary in finding a mentor. One participant noted.

I would persevere and if you don't find someone who's suitable in your department or in your institution, then think of people beyond. But I think you have to go get it set up yourself. People aren't just going to fall into your lap and say, "I want to be your mentor."

Finding the right mentor match can be difficult. At times, it is not possible to meet all mentoring needs through one

mentoring relationship. As one participant reported:

I sought out people and eventually in time found peer and/or some people who were more senior that I drew off of and used for advice and things like that. Never was there one particular person who was a formal mentor . . . it is my sense that it is very difficult to define the matrix that would make for a good match between a mentor and a mentee.

Finding a mentoring relationship that works for both parties requires patience and perseverance. Mentees may find that many people, rather than one person, fill the mentoring role. The specific person who becomes the mentor may not be as important as the functions that this person (or persons) serves for the mentee.

While it is clear that finding a mentor is a difficult task, making the mentoring relationship work over time for both parties is often equally challenging. Mentoring is at its very core a relationship between two people. This relationship can be as complex as the relationships we have with friends or family and be equally personal. The relationship tends to flourish when both parties share similar interests and ideals. Participants repeatedly emphasized the importance of “chemistry” in the relationship, as one emphasized:

...seeing who you think would work out with you, as far as the chemistry goes. Well, I guess they have to be on the same wavelength as you.

Another participant echoed this thought:

...We have at least a marriage in how we think about our scientific problems. That becomes the person I feel like I can draw off of . . . to me a lot of it is compatible personalities.

This interpersonal aspect of the mentoring relationship is critical and

can be especially problematic in programs that assign mentoring pairs.

Characteristics of prized mentoring relationships. Participants reported the importance of responsiveness and availability in a mentor. Protégés value mentors who are knowledgeable and well respected in their field. One participant said:

Well, he’s a man with a good reputation . . . good academic reputation, so that when he talks, people listen and that was very helpful to me.

In addition, an effective mentor values mentoring as an important part of his or her professional role and is dedicated to developing an important relationship with the mentee. The mentor is also a motivator who holds a high standard for the mentee’s achievements. One participant said:

[The mentor] encouraged me to reach for higher standards . . . I probably would not have done [this] otherwise without that positive support.

Recognizing potential—the “academic parent” or coach. The mentoring relationship may be characterized as “academic parenting” in which the mentor works to support the personal and professional growth of the mentee in a selfless way. In potentially less paternalistic metaphorical language, the mentor may function as an academic coach, providing guidance, motivation, strategic advice, and skill development.

The effective mentor sets the stage for success from the very beginning by recognizing the potential of the mentee. The mentor knows the mentee well enough to envision possibilities. Mentors engender a sense of possibility and wonder while encouraging the mentees to reach to their highest potentials, as one participant agreed, saying:

[What was important to me was] . . . his seeing my potential, my seeing his caring and his concern for his staff and willingness to bring people together

and wanting to nurture people because he himself came up through the ranks as well.

Recognizing possibilities for the mentee is only the first in a long line of mentors’ supportive functions.

Supportive/enabling actions—“under my wing.” Traditionally, the functions of the mentor have been viewed as almost exclusively supportive, such as writing letters of recommendation, assisting with publications, writing grants, and preparing for key negotiations.

A mentor also acts as an advocate for the mentee. The mentor promotes the protégé in the department and in the academic community at large while protecting the mentee from the sometimes harsh interactions in academe. The image of “taking the mentee under my wing” was repeatedly raised, as in the words of one participant:

[Having a mentor] put me in a more positive light in that when grant projects or other academic intramural things happened, . . . I was brought to the table a good deal more.

Critical supportive mentoring for the mentee is both practical as well as relational. The mentor enhances the protégé by improving his or her sense of self through positive feedback and encouragement as well as through constructive criticism. As one participant said:

... it [mentoring] really truly just kind of gave me hope and made me enthusiastic. I felt like I could actually get some research done.

Another participant agreed:

...he encouraged me. He discouraged me if I was headed in the wrong direction. I mean that is important, you know. There can’t always be praise.

Networking is an important and complex aspect of the mentoring experience that requires action by both the mentor and the mentee. The mentor

can help the mentee gain access to otherwise closed important academic circles, as one participant noted:

It makes a huge difference to get broken into a network by somebody who is in a position to do that ...the ability to get national visibility has a huge impact on what quality of people you are likely to recruit so it becomes self perpetuating.

Mentors can teach mentees how to promote themselves, as well as teaching them the "rules of the game" of academic politics and networking. One participant said:

...particularly helpful things were ... representing my interests through telephone calls and campaigning. You know ... basically politicking. That is a big part of what goes on where I am so ... it has a lot to do with promotion.

The role of a mentor is complex, involving a dynamic personal relationship with the mentee in which the mentor teaches, supports, promotes, and advocates for the mentee. This complex relationship can be enhanced by similar interests and challenged by differences.

Special challenges of gender and race. Given the current demographics of academe, some of the key differences between mentors and mentees may be ones of gender, race, and ethnicity. Mentors can support mentees by having "a zero tolerance for discrimination." The differences can allow greater mutual growth about other cultures, as one participant noted:

...so I got to learn about kosher foods and he learned from me about African American experiences. ... It was a very good learning experience for both of us.

And as another participant emphasized, the differences can also make finding common ground in the mentoring relationship difficult:

...I have a lot of preconceived prejudices that I have to overcome. But as

a man ... to tell you the truth, I don't have as much trouble cross-mentoring a male African American as I do a white female.

One participant stated that the nurturing environment in her department with respect to race was a shelter, but, unfortunately, not representative of academe at large.

Gender issues in mentoring were described in two main frameworks. First was the issue of sexuality in the mentoring relationship. Repeatedly, the importance of boundaries was identified. In the words of one participant:

...boundaries are well set and I make certain the opposite gender person doesn't step across my boundary and I basically am very, very careful about staying away from her boundaries.

Second was the issue of the different experiences men and women bring to the encounter. One participant noted:

It is very difficult, I think, for a man whose wife has been able to support him at home and take care of the kids. I realize I have to do all of this on my off time at night and on weekends. He understands that on one level. But it is difficult because he has really never had to face it or do it.

These challenges, as another participant said, are felt by mentors as well as mentees:

It is much harder for me to mentor a female than a man simply because I don't always understand how they are thinking. That has nothing to do with my belief that they should be mentored equally well. I am just not sure I know how to do it. What I try to do is find them a mentor or faculty that fits their needs.

Other participants reported that the gender and race of a mentor may be an important factor in a successful match, but that basing matches on race or gender is not essential. Participants, in

general, felt that the option of a match based on gender or race should be available for those who desire it.

Being without a mentor. There are many disadvantages to not having a mentor. Participants without mentors reported having a harder time "learning the rules of the game." As one said:

Without a mentor, ... I had no idea really what to expect from academic medicine. I have been feeling my way through the tunnels because I don't know where the roadblocks are, I just kind of deal with them when I get there.

Participants reported that by the time the rules are figured out, it is too late. They also felt that those without mentors have lower salaries. As one participant emphasized:

I would probably be paid more if I had a mentor. Because I would know my worth coming into the department.

Participants stated that having a mentor resulted in more success. One agreed:

I think I would be more published and I would have a niche, which is something that I have been searching for the last ten years.

Having many informal mentors can provide some support and guidance, but not without difficulty. Having many mentors may mean having many different opinions about the appropriate course of action. In this situation, the mentee is forced to sort through all of the disparate opinions before reaching a decision, a situation only some mentees value. From the perspective of our participants, however, total lack of mentoring can result in increased stress, in less opportunity for academic advancement, and in financial disparities.

Troublesome mentoring relationships. In most mentoring relationships, the mentor acts in the best interests of the mentee. Occasionally, mentors will

take advantage of mentees. This violation could include taking credit for the work of the mentee or sexually harassing the mentee. These incidents can obviously be very disturbing for the mentee who has viewed the mentor as a coach or an academic parent.

DISCUSSION

Our study began to uncover the complexity of the mentoring relationship in academe today. From finding an appropriate mentor to the skills a mentor must possess to be successful, there is much to know about creating and sustaining successful mentoring. Compatibility—"being on the same wavelength" or "having the right chemistry"—is as essential to the mentoring relationship as it is to other successful dynamic and reciprocal relationships. As a result, finding a successful mentoring relationship requires the mentee and the mentor to know about their respective working, communication, and relational styles. In addition, the mentee may need to experiment with many different potential mentors to find the right match.

Our close readings of the participants' interviews revealed content that could, in summary form, constitute a set of recommendations for individuals and for institutions. On the individual level, faculty members must be diligent in seeking out a mentor. Mentees should be explicitly aware of the personal and professional qualities that they value in a mentor and discuss these with potential mentors to find the right match. Individuals should remember that, although most mentors are honorable, some mentors take advantage of their mentees. Mentees also need to remember that most mentoring relationships are with a more senior faculty member and can result in a power differential where the mentee may be vulnerable.

Many faculty members in academic medicine do not have formalized mentoring relationships. Those who do not have a formalized mentoring relation-

ship should look to peers and colleagues for informal mentoring and assistance in navigating the academic system. Colleague mentors can be found both in one's own department and at other academic centers.

At the institutional level, our interviews emphasized that mentoring is a professional activity that should be formalized and recognized like any other activity in academic medicine. Academic institutions could increase the likelihood of successful mentoring relationships by bringing junior faculty members and potential mentors together in a systematic way early in the careers of new faculty members. Ideally, potential mentors and mentees would meet in social as well as professional settings to begin the networking process. Clearly, there are several ways to facilitate mentoring relationships without making assignments. In many doctoral programs, unlike in many medical academic programs, junior academic faculty members are required to meet with each member of the department at the start of their time at the institution. This structured system facilitates the initial search for the right match.

Like other relationships, the mentoring relationship will evolve as both parties learn more about one another. Some of these unanticipated discoveries may enhance the relationship while others may make the relationship untenable. As a result, it is critical that mentoring be a no-fault relationship that either party has the option to terminate for good reason at any time without risk or harm to careers.

Formal visible systems for mentoring can make the connections easier for the potential mentors and mentees. Institutions can encourage and reward mentors by publicly recognizing their efforts as well as by scheduling formal time for the activity. Assigned mentoring can be useful, but the environment must support the mentee in finding another mentor if the current one is not meeting his or her needs. Institutions should make women and minority mentors

available to faculty members, but not assume that all mentees would prefer a mentor who is of the same gender or race.

Our study had a number of limitations. Selection bias might have influenced our observations, since each participant agreed to be contacted for an in-depth interview. In our qualitative study, we explored the content of the interviews, but we could not estimate how frequently the content occurred. Our analyst group with similar views about the importance of relational issues in mentoring found relational themes to be dominant. It is not clear that every analyst group would identify the same dominant themes. The in-depth nature of each interview would not lend itself to large sample sizes and our results may not be generalizable.

Our study also had significant strengths. Qualitative methods such as in-depth, individual interviews followed by in-depth repeated reading of the interview text uncover the richness of diverse opinion, natural language, and a broad universe of potential understanding and approaches. We discovered many of the elements that make mentoring a complex activity. One of the most interesting was the importance of the interpersonal "chemistry" to finding the right mentoring match. Another important observation was that mentees require perseverance to find successful mentoring relationships. As part of our study, we also developed a comprehensive survey instrument for studying the mentoring experience that allowed us to develop a mentoring taxonomy, and our instrument is available to others for studying mentoring.

While facilitating mentoring relationships with formal systems is important, the "chemistry" between the mentor and mentee is also critical. More exploration of this aspect of mentoring would aid in better understanding the factors that bring individuals together in a successful mentoring pair. We have focused on the characteristics of the mentor, but the characteristics of the

mentee are also very important although less clearly understood. Mentoring is a critical but elusively complex element of a successful academic medical career that needs greater attention, more study, and deeper understanding by academics and by their institutions.

REFERENCES

1. Sarridge MS. The mentor system in medicine—how it works for women. *J Am Med Wom Assoc.* 1985;3:51–3.
2. Roche GR. Much ado about mentors. *Harvard Business Review.* 1979;57:14–28.
3. Riley S, Wrench D. Mentoring among women lawyers. *J Appl Soc Psychol.* 1985;15:374–86.
4. Palepu A, Friedman R, Barnett R, et al. Junior faculty members' mentoring relationships and their professional development in U.S. medical schools. *Acad Med.* 1998;73:318–22.
5. Palepu A, Friedman RH, Barnett RC, et al. Medical faculty with mentors are more satisfied. *J Gen Intern Med.* 1996;11(4 suppl):107.
6. Levenson W, Kaufman K, Clark B, Tolle S. Mentors and role models for women in academic medicine. *West J Med.* 1991;154:423–6.
7. Pololi L, Knight S, Dennis K, Frankel R. Helping medical school faculty realize their dreams: an innovative, collaborative mentoring program. *Acad Med.* 2002;77:377–84.
8. Mark S, Link H, Morahan P, Pololi L, Reznick V, Tropez-Sims S. Innovative mentoring programs to promote gender equity in academic medicine. *Acad Med.* 2001;76:39–42.
9. Morzinski J, Simpson D, Bower D, Diehr S. Faculty development through formal mentoring. *Acad Med.* 1994;69:267–9.
10. Ramanan R, Phillips R, Davis R, Silen W, Reede J. Mentoring in medicine: keys to satisfaction. *Am J Med.* 2002;112:336–41.
11. Bhagia J, Tinsely J. The mentoring partnership. *Mayo Clin Proc.* 2000;75:535–7.
12. Adviser, Teacher, Role Model, Friend. (<http://stills.nap.edu/readingroom/books/mentor>). Accessed 12/2/02. Washington, DC: National Academy Press; 1997.
13. Healy CC, Welchert AJ. Mentoring relations: a definition to advance research and practice. *Educ Res.* 1990;19:17–21.
14. Noe RA. An investigation of the determinants of successful assigned mentoring relationships. *Pers Psychol.* 1988;41:457–79.
15. Kram KE. Phases of the mentoring relationship. *Acad Manage J.* 1983;26:608–25.
16. Kalbfleisch P, Davies A. Minorities and mentoring: managing the multicultural institution. *Communication Educ.* 1991;40:266–71.