

# Helping Medical School Faculty Realize Their Dreams: An Innovative, Collaborative Mentoring Program

Linda H. Pololi, MBBS, Sharon M. Knight, PhD, RN,  
Kay Dennis, EdD, RN, and Richard M. Frankel, PhD

## ABSTRACT

Junior faculty wishing to achieve successful careers in academic medicine face many challenges. To facilitate faculty in their career development, the authors implemented and evaluated an innovative collaborative, or peer-group, mentoring program at their medical school. Based on Rogerian and adult learning principles, the program incorporated development of skills in key areas for career development, a structured values-based approach to career planning, and instruction in scholarly writing. The 80-hour program has so far been conducted twice over two academic years (1999–2001) with 18 faculty (50% women). Quantitative and qualitative methods were used in the evaluation.

Program attendance was 89%. All participants completed a written academic development plan, an exercise they rated as valuable. They also completed an average of one to three manuscripts for publication. Evaluation data highlighted the critical nature of a supportive learn-

ing environment and the reasons participants chose to attend the program consistently. Key meaningful outcomes for most participants were: (1) identification of their core values; (2) a structured process of short- and long-term career planning based on these core values; (3) the development of close, collaborative relationships; (4) development of skills in such areas as gender and power issues, negotiation and conflict management, scholarly writing, and oral presentation, and (5) improved satisfaction linked to participants' decisions to remain in academic medicine. Participants developed a sense of personal transformation and empowerment.

The authors conclude that collaborative mentoring offers a new approach to faculty development that addresses limitations of traditional approaches in a satisfying and cost-effective way.

*Acad. Med.* 2002;77:377–384.

Traditionally the enticement of a career in academic medicine was related to the promise of opportunities for scholarship, teaching, and the establishment of “best practices” as well as the rewards associated with clinical medicine. Today, junior faculty wishing to succeed in academic medicine face daunting challenges in this era of cost containment in health care delivery. Faculty express less enthusiasm for careers in academic medicine,<sup>1</sup> even though medical schools and teaching hospitals

continue to be solely responsible for training compassionate and competent physicians. In these challenging times, it is critical to provide support and guidance for faculty in order to facilitate career development in academic medicine, as well as to foster the retention of excellent physician–teachers. One potentially effective means of addressing the needs of junior faculty in academic medicine is a collaborative mentoring program. We describe the implementation and evaluation of such a program for medical school faculty.

Despite a rich literature on mentoring in business and academic settings and evidence of its effectiveness,<sup>2,3</sup> there are few descriptions of mentoring programs for medical faculty<sup>4</sup> (i.e., those who teach in medical schools and teaching hospitals) and few published studies of mentoring's effectiveness for them. Papelu and colleagues found that mentoring in academic medicine is positively associated with ca-

*Author information appears at the end of the article.*

Correspondence and requests for reprints should be addressed to Dr. Pololi, Office of the Vice Chancellor for Education, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655; telephone: (508) 856-8432; e-mail: (Linda.pololi@umassmed.edu).

## Theoretical Foundations of the Collaborative Mentoring Program

Carl Rogers has written extensively on the qualities and attitudes important for the facilitation of learning and optimal development of individuals. He describes the effective teacher as one who shows acceptance, cares about and respects the learner, is emotionally congruent and genuine, and actively listens to the learner with empathic understanding.<sup>13</sup> These are also important attributes in medical faculty and physicians in clinical practice, and qualities that foster a safe environment for learning. The provision of a safe, supportive learning environment facilitates the positive formation of relationships and trust between teacher and learner and, we would add, physicians and patients. In this context, the learner or faculty participant can risk being more interactive, engaged, and open or exposed in the learning process, and will be more willing to apply learning to a new situation. The program we designed was founded on Rogerian methods.

Additionally, the CMP was firmly based on the prin-

ciples of adult education. Adult education theory suggests that learners need to perceive the relevance of educational material to learn most effectively.<sup>14,15</sup> Helping protégé(e)s frame their own learning objectives, encouraging interactive sharing of ideas, providing constructive feedback and the opportunity to practice new skills—all integral parts of the mentoring program—were directly based on adult learning principles.

Finally, learners need to have the opportunity to step back and reflect on their learning. Friere<sup>16</sup> describes the cycle of action and reflection as “praxis,” where time is used to reflect upon and understand the learning experience at intellectual, personal, and emotional levels. Deeper learning occurs when the learner is emotionally engaged during or by the learning. The application of Rogerian and adult learning principles, coupled with a self-reflective approach advocated by Friere, were key in facilitating the goals and ultimate success of the program.

reer satisfaction,<sup>5</sup> and two other studies indicate that such mentoring is associated with enhanced research productivity for faculty.<sup>6,7</sup>

Most descriptions of mentoring and its benefits focus on a dyadic, mentor–protégé(e) model. The drawbacks of this traditional model include the limitations of a mentor’s individual perspective and source of information, a lack of congruence in the expectations of mentor and protégé(e), personality clashes, transference issues, sexual dynamics, emotional or professional dependency, lack of consistency, passivity related to role modeling, and lack of senior mentors with time available. Not surprisingly, we have observed considerable variability in the results of dyadic mentoring relationships for medical faculty in our institution. When we explored alternative pathways to support careers in academic medicine, we discovered a dearth of instruments or methods to facilitate career planning for medical faculty. We identified few accounts of an alternative mentoring structure whereby a group of peers came together for the purpose of professional development.<sup>8,9</sup>

In 1999, results of a comprehensive faculty development needs assessment conducted at our medical school, the Brody School of Medicine at East Carolina University, identified a need for faculty mentoring similar to the need found in other academic medical centers.<sup>10</sup> Concurrently, the medical school faculty development office was designated a National Center of Leadership in Academic Medicine by the U.S.

Department of Health and Human Services and charged with developing and demonstrating model mentoring programs for junior faculty to promote career advancement in academic medicine for both women and men faculty.<sup>11</sup>

To address our faculty’s need for mentoring, avoid the disadvantages of the traditional dyadic mentor model, be inclusive of the mentoring needs of women, and build on our prior experience of highly successful group-learning faculty development programs,<sup>12</sup> we designed, implemented, and evaluated a facilitated group-mentoring program for junior faculty in our medical school. This Collaborative Mentoring Program (CMP) was grounded in adult learning theory and the findings of Carl Rogers<sup>13–16</sup> (see sidebar entitled “Theoretical Foundations of the Collaborative Mentoring Program”). The program aimed to provide a framework for professional development, emotional support, career planning, and the enhancement of personal awareness and skills important for a successful career in academic medicine.

### THE PROGRAM

We have conducted the CMP twice over two academic years, 1999–2001.\* Eighteen assistant professors volunteered

\*The principal architect and lead faculty member in this program subsequently left the institution; the program is on hold until a successor to her position has been named.

to participate. The cohorts were balanced for gender and represented eight clinical departments and 12 subspecialties. Sixteen participants had MD degrees and two had PhDs. We sent a brochure describing the program to all assistant professors in the medical school six months prior to the start of the program. The application form also required the signatures of the department chair and section head to ensure permission for the faculty member's time that would be committed to the program.

The 80-hour program spanned eight months and consisted of an initial three-day session followed by a full-day program once a month for six months. The goals of the program are presented in List 1. During the two years of the program reported in this article, it was held in a setting outside the medical school and funded by the Faculty Development Office of the National Center of Leadership in Academic Medicine. Participants were provided with a manual that included extensive readings, bibliographies, and a career-planning notebook.<sup>17</sup> Each nine-hour session combined skill development, structured career planning, and scholarly writing. Learning and teaching strategies were learner-centered experiential learning, role-play, videotaping, group discussion, extensive feedback from peers and facilitators, storytelling, narrative writing, and self-reflection.

### Development of Skills

We devoted sessions to each of the following skill areas, which we believe are important for optimal performance in academic medicine: team building, value clarification, career planning, collaboration, negotiation, conflict resolution, oral and written presentations, and gender and power issues. The cohort stayed together throughout the day; the program di-

#### List 1

**Goals of the Collaborative Mentoring Program, Brody School of Medicine at East Carolina University, 1999–2001**

- Create an environment of support and guidance for achieving career satisfaction and advancement
- Foster in faculty increased awareness of their own career goals, personal values, strengths, and priorities
- Facilitate faculty in planning the methods by which success will be achieved in career and personal goals
- Aid faculty in the development of requisite skills toward the achievement of career goals
- Promote increased awareness of gender and power issues in relation to career goals
- Facilitate faculty participants in becoming part of a collaborative and collegial team

rector facilitated the cohort's activities in collaboration with, for most sessions, a visiting facilitator with particular content expertise.

The daylong sessions followed a similar format, which we illustrate here by a description of a session on *power*: After a brief checking-in period and orientation to the day, the facilitators asked each participant to write a description of an experience in the workplace where power was an issue, one that they would like to work on. The narratives were read aloud by the facilitators. This process was followed by a 20-minute lecture that addressed the various styles of coercive power and more effective methods of using power. After a break, the group reconvened and by consensus selected two of their own power scenarios to role-play and discuss. During the workshop, the facilitators assisted individuals in demonstrating the power skills of encouragement, negotiation, and honoring during role-play situations, to which the group responded by offering insights and feedback. A number of participants participated in each role-play and offered help to each other. After lunch, the group engaged in a facilitated discussion of how they viewed their own scenarios from the potentially new vantage point afforded by the session. As a final activity, participants were invited to reflect in writing on some aspect of the session they found important or meaningful. Two additional segments that addressed the development of an academic plan and writing skills were included in each day's activities.

### Other Activities

For one hour each day, participants were guided through the steps of formulating a written personal academic development plan.<sup>17</sup> The components of the completed plan included clarifying and prioritizing values, identifying strengths, setting long- and short-term career goals, identifying tasks and learning objectives to achieve goals, writing learning contracts for skill development, and discussing or negotiating the plan with their supervisors.

Scholarly writing was also a focus of the program. Seventy-five minutes per day were devoted to collaboration on writing in the context of author–editor dyads. Each individual focused her or his effort on at least one self-selected scholarly writing project, such as a journal article, abstract, editorial, or book chapter, that could be completed during the eight months of the program. Although most of their writing was conducted outside the program sessions, during each session they engaged in 15- to 20-minute periods of writing, provided feedback to one another, and shared perspectives and experiences that informed individual writing projects or the writing process in general. A writing expert facilitated this segment of the program.

## Evaluation

The authors evaluated the program using a combination of qualitative and quantitative methods. We tracked individual participants' written learning objectives for each day, and at the end of each session, requested a written narrative about a meaningful learning experience. These were written on NCR (no-carbon-required) paper so that participants could keep a copy and thus compile written accounts of their thinking and learning throughout the program. Participants used self-selected code names on all evaluation instruments in order to ensure their confidentiality and anonymity. At the conclusion of the entire CMP, they engaged in audio-taped dyadic interviews that addressed open-ended questions (List 2) about their program-related learning and experience. They also received a copy of a written document that presented a qualitative analysis of their written and voiced comments, with an invitation to review and provide feedback and comments regarding the completeness and accuracy of the findings. The participants concurred with our findings.

### WHAT WE LEARNED

#### Quantitative Data

Program attendance and productivity in the area of academic writing were exceptional. The overall program attendance rate was 89%, with participants consistently demonstrating

#### List 2

**Statements and Questions That Participants Were Asked to Respond to as Part of Their Evaluation of the Collaborative Mentoring Program, Brody School of Medicine at East Carolina University, 1999–2001**

- Please describe one or more benefits you derived from working with other participants in this program.
- Please describe one or more benefits you derived from working with the faculty facilitators in this program.
- We are interested in why a faculty member would choose to participate in a group mentoring experience as compared with a mentor–protégé(e) dyadic relationship.
- What role, if any, did interacting with a peer group, as compared with a senior mentor, play in your choice of this program?
- What has been the value, if any, of collaborative/peer mentoring to you as compared with other mentoring experiences you have had? (e.g., mentor/mentee, senior to junior)?
- Did gender play a role in your choice of program?
- Were there any other considerations?
- In terms of my professional development, this program has . . .
- How could the Collaborative Mentoring Program be improved?

active involvement in the program. The reasons participants gave for non-attendance were clinical scheduling conflicts, illness, or attendance at national professional meetings. Sixteen scholarly manuscripts were submitted or accepted for publication by the cohort who participated in the initial program, and 11 were submitted by the cohort of the following year. Educational value and participant involvement were positively rated for all sessions. Participants gave the writing project a mean rating of 2.11 (SD = 0.92) on a five-point scale where 1 = excellent and 5 = poor. All participants completed written plans for their academic careers and discussed their academic development plans with their supervisors. Participants gave this component of the program a mean rating of 1.86 (SD = 0.83) on a five-point scale where 1 = excellent and 5 = poor.

#### Qualitative Data

**Why faculty selected the program.** No single rationale for participation predominated among those who elected to take part in the CMP. Their various reasons included a desire for career guidance or mentoring, positive experiences with faculty development in the medical school, or the reputation of this program in particular. One person initially selected the program thinking it was another one, but stayed with the program. Others were attracted to the peer aspects of the program because they viewed group process as potentially valuable, wanted to “meet new people and form new relationships,” or valued peer mentoring. Some believed that communication between peers would be more comfortable and meaningful than that associated with senior faculty mentoring. One person observed that, unlike “one-on-one mentoring [which] easily seems to be put aside or cancelled,” the peer-based program could potentially offer a more reliable mentoring process. Some wanted to interact with peers because of commonality in that they “face(d) the same hurdles and problems and issues.” They perceived that a diverse peer group maximized the likelihood that their mentoring needs would match someone else’s skills or personality. As one person explained, “Within a group, the different personalities add richness and the protégé can learn from many perspectives, and gravitate toward the person that is the best fit to learn specific skills.”

At the end of the program, when asked whether gender had played a role in their choices to participate, three participants reported that it had. They had wanted to address gender-related issues in the work environment, had perceived a lack of access to senior women mentors in their department, or had believed that this particular program would offer “an environment free from fear to discuss gender issues.” In summary, participants based their decisions to participate in the CMP on diverse factors: a desire for mentor-

ing or guidance in general, valuing a peer-based experience, gender issues, prior positive experiences with faculty development programs, and the positive reputation of the program.

**Overview of participants' perspectives.** With few exceptions, the participants viewed the CMP as a beneficial and valuable means of personal growth and professional development. In terms of less positive reactions to particular aspects of the program, two individuals mentioned that the program was more time-consuming than they had initially anticipated. One recommended more free time and flexibility in the schedule of events, while another thought a more structured approach would be advantageous. Two viewed the program as less than optimal in terms of peer-group affiliation or personal learning style. Although one of the latter participants described "feeling out of place" due to having a different career focus and level, and another viewed the learning process as a mismatch with his or her personal learning style, all participants acknowledged that the majority of individuals highly valued the program. Among the most frequently mentioned recommendations they voiced about the program was to continue or lengthen it, or provide an opportunity for the cohorts to reconvene. Several said they would miss the program, particularly the "camaraderie that has developed between us."

Participants linked their favorable assessments of the program to both the learning environment and the content of the program. They perceived the learning environment characteristics as essential to their abilities to effectively process the content. The program served participants as a catalyst for networking, developing relationships, initiating collaborative projects and activities, and fostering a sense of community and connectedness to others as well as to our school.

**Learning environment.** Participants identified three primary contextual factors they associated with program effectiveness: the provision of a safe, supportive learning environment that fostered interpersonal communication, the dedication of regularly scheduled time for program participation and reflection, and a program setting that was separate and apart from the work environment. They repeatedly acknowledged that the safe, supportive learning environment fostered by program facilitators contributed in important ways to their learning and relationship building and ultimately created a context that fostered their desire to attend the program regularly. According to one participant:

It is a wonderful forum to discuss things in a very safe environment, without being afraid of being criticized or being judged, and I think that is the best part of the program. That we can be very frank about our views and explore ourselves. . . . and actually set the base for collaborative mentoring.

A consequence of the safe environment that fostered par-

ticipants' interaction was the emergence of relationships, shared experiences, mutual problem solving, peer collaborations, and camaraderie. Most of the participants valued the opportunity to interact with peers who were at a similar level in their careers and who shared similar experiences, frustrations, and concerns. One person commented that "the fact that we are coming from similar places . . . creates an environment of understanding and common ground."

With the exception of one person who found the collaborative/peer mentoring program "less effective than mentoring with a more senior/experienced teacher," those who had had prior experiences with other mentoring programs found peer mentoring at least as valuable as or more valuable than a senior faculty mentoring situation. One individual also observed that the CMP provided "excellent guidance from more senior facilitators [and thus offered] the best of both worlds." Here are comments from two participants that echo the perspectives of other participants about the peer mentoring process:

This format of collaborative/peer mentoring has been more valuable than other mentoring experiences I have had because peer mentoring takes the power out of the relationship. By taking the "expert/student" mentality out of the equation, it helps me to reflect on all that I have to offer, rather than feeling sunk by all that I have to learn. It is empowering.

Working with peers has been a very liberating experience. I have felt free to express myself. I have also learned a great deal from others. Although I have enjoyed senior-to-junior mentoring, I have felt more constrained about expression within those relationships.

The kind of learning environment provided by this program not only contributed to personal growth and increased the breadth and depth of the participants' relationships, but also enhanced the participants' consequent acquisition of knowledge and skills associated with the program content. As one participant voiced, "The benefits from working with this group were numerous. The congenial atmosphere and trusting environment allowed for rapid learning of skills. I felt very accepted and was more willing to take risks in my skill development."

Critical to the meaningful learning outcomes participants associated with the program was the dedication of high-quality, uninterrupted time away from clinical responsibilities to engage in discussion, acquisition and practice of skills, collaboration, and personal and career-focused self-reflection. As one person shared, "The most meaningful thing about it [the program] to me was the chance to have the time to reflect, the time to think about my career." In addition to dedicated time for reflection and program participation, a setting that was separate and apart from the participants' work environment offered, in the words of one participant,

a special chance to get to do something away from the other important things I have to do. So it really was a chance to have a day a month to be able to think about my career, but outside of that setting, outside a situation where you don't always get a chance to think about those things.

Participants thus described the program context as dedicated, uninterrupted, quality time spent in a setting outside the work milieu that provided a safe, supportive, nonjudgmental, open learning environment conducive to fostering interpersonal communication and relationship building. The learning environment was requisite to the meaningful learning outcomes participants ultimately derived from the program content.

**Program outcomes.** Participants associated five main interrelated meaningful outcomes with their participation in the CMP. The outcomes were

- identification of individual governing values;
- a structured process of short- and long-term career planning based on these core values;
- the development of close, collaborative relationships;
- skill development in such areas as gender, power, negotiation, and conflict management, scholarly writing, and oral presentation; and
- improved job satisfaction linked to the participants' decisions to remain in academic medicine and the resolve to remain at their current institution.

An associated theme was the sense of personal transformation and empowerment that occurred during the program. In addition, the relationships formed were reported as significant in helping some participants as they constructed successful careers.

**Clarification of values.** Program participants generally perceived that the opportunity to identify personal core values and to connect those values to career planning fostered one of the most meaningful learning outcomes associated with the program. As one person observed, "values were actually the core of this program. . . . You have to think, 'What are my values and how do they affect my personal and professional life?'" Program participants were struck with the similarities they found in each other's core values and goals despite the diversity present in their cohort. An unexpected revelation to many, however, was the connection between core values and career planning. One participant's observation, for example, mirrored the perspective of several others: "I hadn't really thought about how your values affect your work . . . I don't know that I saw how much they could come into play in terms of my decision about what to choose or how to prioritize [career-wise]."

As another participant's experience suggests, the consequence of writing down, reflecting on, and clarifying their

values culminated in improved congruence between what the participants valued and their career planning:

Before the program I really was not, on a conscious level, using my value system to really drive the decision(s) that I was making or to drive my career planning. . . . And so becoming more aware of my values and getting more in focus with my values has made a big difference for me. I think it has really helped me look at my long-term plan and change some of the activities that I am involved with currently to become more consistent with my values and long-term goals.

Participants also began to recognize how or whether their core values were reflected in both their work and their personal lives and made plans to successfully address both aspects of their lives. As one person explained, the process of identifying core values "has been really helpful for me in restructuring not just how I want my career to look, but my home life [as well], and how it all fits together." Unlike the others, one individual found that the value-clarification process was difficult and held "very little reward."

**Career planning.** The participants viewed the process of applying concrete steps for career planning and priority setting, including developing a time line and writing one-, three-, and ten-year career goals, as a particularly valuable process. In the words of one participant, the process "made me evaluate my career goals and perhaps get the motivation to pursue them."

Some individuals had not previously given thought to their short- or long-term career goals; many had never structured their career plans in writing. The career planning process invited a re-envisioning of their work, careers, and personal lives, and precipitated efforts to negotiate needed changes to improve job satisfaction, productivity, and consistency with core values. Others discovered a sense of self-empowerment that emerged from the goal-setting process: "[I have a] much clearer idea of where I'm going."

**Development of relationships.** Participants valued the opportunity to meet and interact with diverse peer colleagues from a variety of disciplines. They discovered disparate perspectives, learned from and shared with others in similar circumstances, solved problems, and, in the end, felt less isolated and more comfortable within their work environments.

I think what was the most meaningful (about the program) is the ability to talk to other professionals in my general field in medicine about the trials, tribulations, and emotions in all the context of our lives.

As a consequence of the broadened scope and depth of the relationships they formed, several participants experienced a sense of connectedness and community or "kinship

that was not there before.” By the conclusion of the program, many had formed collaborative and supportive social or professional networks. As one person reflected:

I think I could collaborate with anybody that was in the program. We’ve developed that sense of confidence and knowledge about the other individuals that would allow us to make those connections more readily . . . You feel like you are not alone.

Participants viewed the collegial respect and collaboration that emerged from their interactions with one another as having impacts on their professional lives by improving their professional effectiveness, working relationships, and work climate in general. According to one participant, “I now have a sense of belong[ing] to this institution and a group of colleagues who care about my well being.”

**Development of skills.** The participants valued the acquisition of knowledge and skills in value clarification and career planning as well as in scholarly writing, oral presentation, gender and power issues, negotiation, and conflict management; such knowledge and skills “would help us succeed not only academically but [also] in diverse areas of life.” The particular skills addressed by the program were seen as unique; these were skills to which the participants had not been previously exposed and would be unlikely to gain elsewhere. In the estimation of one participant, for example, the program presented a rare opportunity to “get some skills to deal with issues that we are never taught about, such as gender, power, and so forth.” Their attendance reflected, in part, their desire to acquire skills offered by the program. One participant, for example, explained regular program attendance by stating, “I was benefiting [from the program] and, not coming, I might miss out on a important skill or important concept.” Another suggested that “after every session, we left with a new tool that we could utilize.” They valued the opportunity to practice new skills by means of role-play, videotaping, and group processing with extensive feedback, and found the skills immediately applicable in their professional lives.

**Retention of faculty.** The program affected faculty members’ retention in academic medicine at our school, in part because it helped many participants find greater satisfaction in their work and improved their understanding about the nature and expectations of academic medicine. Although some faculty indicated an unwavering commitment to academic medicine and a desire to stay at the medical school that was relatively unaffected by the program, a few experienced the program as reinforcing, strengthening, or pivotal in their decisions to stay in academic medicine or at our institution. A few felt that decisions about institutional affiliation were uncertain or premature at this point in their careers.

Those who experienced a positive impact on retention attributed it to a variety of factors. One individual gained the confidence and self-advocacy skills that made him or her more comfortable at the institution and thus more likely to choose to remain as a member of the faculty there. Another participant reaffirmed a commitment to academic medicine “after looking at those core values. That’s what shapes me as a physician, and my definition of being a physician is being a teacher for future generations of doctors, not just seeing patients.” To another participant, the offering of the program suggested institutional commitment to faculty development and a concern about faculty success that reinforced the desire to continue being affiliated with the medical school. Others noted that the relationships they formed as a consequence of the program led to a sense of community, collegiality, and belonging, and a consequent desire to remain at the institution. In the words of one participant:

[After two years at the medical school] I felt alone in the hospital and coming to a new place where you don’t know all the other physicians and you don’t [know] what kind of work they do or what kind of people they are is stressful . . . From the program I’ve been able to meet other people. . . . We’ve spent meaningful time together and I feel really connected to them. . . . They’re my main source of support now, so I completely changed my life at work . . . I now feel much more vested in the [medical school] community here than I had before.

## DISCUSSION

Although there has been little written that discusses the measurement of peer mentoring in general and in medicine in particular, both quantitative and qualitative evidence from our two-year experience suggest that the CMP is a feasible and perhaps desirable alternative to traditional dyadic mentoring approaches. The CMP program used a self-directed, self-empowering, collaborative, experiential approach to the process of faculty development. It differed from a more traditional focus that might emphasize tenure and promotion guidelines, university policies and procedures, and the use of lectures. Consistent with the theoretical concepts that informed the design and implementation of the program, the initial, intensive three-day session focused on value clarification, goal setting, self-empowerment, and team building. The session was offered in the context of a safe, non-judgmental environment that promoted the sharing of perspectives and experiences and fostered trust among participants. It ultimately contributed to the participants’ bonding and set the stage for the interactive, collaborative learning process that characterized each of the subsequent sessions.

Data reveal that the key program outcomes articulated by the participants were remarkably congruent with program

goals (List 1). The philosophical underpinnings of the program, derived from the work of Rogers,<sup>13</sup> and Freire<sup>16</sup> and adult learning principles<sup>14,15</sup> resonated in meaningful ways with the participants. Consistent with Rogers' contentions, the participants perceived that a safe, supportive, self-directive, egalitarian learning environment that fostered reflection, interaction, and relationship building, facilitated their acquisition of knowledge and skills, and fostered personal growth. Such a program may be particularly conducive to the career development of women.<sup>18</sup>

Participants repeatedly identified their peers as "collaborators" or "colleagues" (implying a non-hierarchical relationship) rather than as "mentors," even though the attributes they valued in their peers were consistent with the expectations of having a "mentor": shared insights, experiences, ideas, guidance, problem solving, and support. Their reference to peer collaborators reflects the non-hierarchical nature of a peer-mentoring process, a characteristic that addresses problematic issues in senior-junior mentoring relationships such as power, dominance, dependency, and transference. The CMP also circumvented other difficulties in dyadic faculty mentoring situations, including lack of mentors' availability, inconsistency, and the limitations inherent in receiving just one person's perspective. Additional research is warranted to gain further insight into the merits and limitations of these two mentoring approaches.

High faculty turnover rates have been observed in academic medicine, with the cost of replacing an individual faculty member averaging \$250,000.<sup>19,20</sup> In an era of budget constraints and faculty flight from academic medicine, faculty development programs offer one means of assisting junior faculty to become more productive, comfortable, and connected to their institutions and thus more likely to continue their institutional affiliations. Data from the CMP program suggest that faculty retention was linked to both program content and the learning environment.

Collaborative mentoring offers an innovative and cost-effective approach to medical school faculty development not previously reported in the literature. The program evaluation findings we have reported here lead us to conclude that collaborative mentoring holds great potential for turning faculty dreams into reality.

The authors thank the U.S. Department of Health and Human Services, Office of Women's Health, and in particular Saralyn Mark, for the support of this demonstration project. They also thank Penny Williamson, Dan Duffy, and Mack Lipkin, who contributed to the design of the program; and Gloria Winn for support of the program and for the statistical analyses of the data. Special thanks go to the faculty participants, from whom the authors learned much and whose friendship they cherish.

When the program described in this article was undertaken, **Dr. Pololi** was professor of medicine and assistant dean and director, Office of Faculty Development, and director, National Center of Leadership in Academic Medicine, the

Brody School of Medicine at East Carolina University, Greenville, North Carolina. She is now professor of medicine and vice chancellor for education at the University of Massachusetts Medical School, Worcester, Massachusetts; **Dr. Knight** is associate professor, Department of Health Education and Promotion, and associate dean, School of Health and Human Performance, East Carolina University, Greenville, North Carolina; **Dr. Dennis** was assistant professor of nursing, School of Nursing, East Carolina University, and is now distance learning director, Carteret Community College, Morehead City, North Carolina; and **Dr. Frankel** is vice president for program evaluation, The Fetzer Institute, Kalamazoo, Michigan.

## REFERENCES

1. Goldacre M, Stear S, Richards R, Sidebottom E. Junior doctor's view about careers in academic medicine. *Med Educ.* 1999;33:316-7.
2. Merriam S. Mentors and protégés: a critical review of the literature. *Adult Educ Q.* 1983;33(3):161-73.
3. Schulz S. The benefits of mentoring. In: Galbraith M, Cohen NH (eds). *Mentoring: New Strategies and Challenges.* San Francisco, CA: Jossey-Bass, 1995:57-68.
4. Morzinski JA, Diehr S, Bower DJ, Simpson DE. A descriptive, cross-sectional study of formal mentoring for faculty. *Fam Med.* 1996;28:434-8.
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. Palepu A, Friedman R, Barnett R, Carr P, et al. Junior faculty members' mentoring relationships and their professional development in U.S. medical schools. *Acad Med.* 1998;73:318-23.
7. Neumayer L, Levinson W, Putnam C. Residents' concerns: mentors for women in surgery and their effect on career advancement. *Curr Surg.* 1995;52:163-6.
8. Connor MP, Bynoe AG, Redfern N, Pokora J, Clark J. Developing senior doctors as mentors: a form of continuing professional development. Report of an initiative to develop a network of senior doctors as mentors: 1994-99. *Med Educ.* 2000;34:747-53.
9. Kram K, Isabella L. Mentoring alternatives: the role of peer relationships in career development. *Academy of Management J.* 1985;28:110-32.
10. Pololi L, Dennis K, Winn G, Mitchell J. A needs assessment of medical school faculty: caring for the caretakers [unpublished].
11. Mark S, Link H, Morahan P, Pololi L, Reznik V, Tropez-Sims S. Innovative mentoring programs to promote gender equity in academic medicine. *Acad Med.* 2001;76:39-42.
12. Pololi L, Clay MC, Lipkin M, Hewson M, Kaplan C, Frankel RM. Reflections on integrating theories of adult education into a medical school faculty development course. *Med Teach.* 2001;23:276-83.
13. Rogers CR. The facilitation of significant learning. In: Siegel L (ed). *Instructions: Some Contemporary Viewpoints.* San Francisco, CA: Chandler, 1967:37-54.
14. Brookfield SD. *Understanding and Facilitating Adult Learning.* San Francisco, CA: Jossey-Bass, 1987.
15. Knowles MS. *The Modern Practice of Adult Education: From Pedagogy to Andragogy.* New York: The Adult Education Company, 1980.
16. Freire P. *Pedagogy of the Oppressed.* New York: Continuum, 1986.
17. Pololi L. Academic Development Plan. Greenville, NC: East Carolina University School of Medicine, Office of Faculty Development, 1999 [unpublished].
18. Shapiro EC, Haseltine FP, Rowe MP. Moving up: role models, mentors and the "patron system." *Sloan Management Review.* 1977;19:51-8.
19. East Carolina University Office of Faculty Development [unpublished data].
20. Henry Ford Foundation [unpublished data].