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Mentorship: Concepts and Application to Plastic Surgery Training Programs

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Abstract

Background—Countless papers have demonstrated and emphasized the importance of mentoring in academic medicine. However, the upcoming role of mentors in the evolving medical field is poorly defined. As translational medicine, collaboration, and healthcare priorities change, so too must the goals and usage of mentoring. The aims of this paper are to demonstrate key aspects of effective mentoring in academic plastic surgery, show institutions how to cultivate mentoring relationships among their faculty and trainees, and provide direction for how to optimize the future use of mentoring to best prepare the next generation of plastic surgeons.

Methods—We reviewed the current literature regarding mentorship and the evolution of academic medicine.

Results—Mentors not only facilitate their protégés' entrance into the field and future success, but can also attract medical students and residents to careers in research and abet the racial and gender discrepancies in plastic surgery and academia. Ideally faculty should undergo some form of training before they enter mentoring relationships. This will ensure that they are aware of their specific duties as mentors, are able to communicate with mentees, and can avoid potential pitfalls.

Conclusions—Mentorship is a tool. If used correctly, it can help recruit and retain talented physician-scientists to plastic surgery to satisfy the growing demand. This will require institutions to actively support mentorship, provide opportunities and resources for training mentors, and enable faculty to allocate time to this vital pursuit.

Keywords

Mentor; Training; Mentorship; Education

The curricula of current medical training programs generally cannot cover the full spectrum of topics and skills that medical students and residents will need to be successful.¹ This is

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especially true since the widespread adoption of the hospitalist model of care, the diffusion of evidence-based medicine, and the growth of translational research. All of these transitions have increased the demand for highly trained clinician-scientists who are capable of performing clinical, teaching, scholarly, and, in some cases, administrative duties.^{2,3} Plastic surgeons have been leaders in evidence-based medicine, innovative techniques, and patient care.⁴ In the face of mounting obligations and an increasingly diverse patient base, they must supplement their training in order to stay ahead. Mentors can help to bridge the gap between what is taught and what is needed, by providing additional instruction, opportunities, one-on-one attention, and feedback. Because mentors exert such a powerful influence on their trainees' careers and success, they are in an ideal position to address the future needs of plastic and reconstructive surgery.

Mentoring is undeniably a valuable resource in any profession, especially for those pursuing careers in academic plastic surgery. However, many trainees lack access to mentors or fail to use mentoring effectively. In this paper we will explore the current state of mentoring in academic plastic surgery, examine potential barriers and pitfalls, and discuss methods of facilitating effective mentorships. We also aim to highlight understudied aspects and provide direction for future mentoring and mentoring-related research.

Mentoring in Academic Plastic Surgery

As Dr. Rod Rohrich, editor of *Plastic and Reconstructive Surgery*, wrote, "mentoring is one of the least expensive and most powerful ways to change the world."⁵ In academic plastic surgery, these changes include helping promising medical students, residents, fellows, or faculty meet their potential, encouraging them to pursue a career in research, giving them the advantage of guidance so they do not have to rely on trial and error, and leaving the field in a better state than when they entered it.⁶⁻⁸ Henri Ford M.D., a former president of the Association for Academic Surgery, relates how one of his mentors during medical school radically reoriented his career path with a simple exchange as they waited for the elevator. The mentor, Dr. Wilson said, "You have a great future in surgery. Have you considered going into surgery?"⁹ Ford, who had previously felt that surgery was out of his reach, was inspired to pursue and enjoy a highly successful career in academic surgery.

A mentor is typically a senior member of the same field with whom a protégé can relate who is willing and able to advise, support, protect, and guide him/her throughout his/her professional and personal development.^{6,7,9-16} Mentors are responsible for the enculturation of their mentees into the world of plastic surgery, teaching them professionalism, ethics, and how to achieve balance in life.^{1,17} They can also provide opportunities to improve skills such as scientific writing, which although it is an essential part of research, is absent from most training programs.¹⁸ An ideal mentorship is mutually rewarding, but centered on the needs, development, and success of the mentee.¹⁹ Therefore, the mentor must express certain personality traits and perform specific functions, which are listed in Table 1 and Table 2, respectively. The mentor's role in introducing the mentee to key figures and involving him/her in activities central to academic plastic surgery, such as conferences, is especially important. The more connections and experiences that a trainee accumulates the better prepared and able he/she will be to embark on an independent career later on.

Obstacles and Failures in Mentorship

Unfortunately, obstacles to initiating and maintaining a successful mentorship abound. The most pronounced being the shortage of suitable, willing mentors.^{15,20} Because there are both personal and professional aspects to the relationship, it can be hard to find the right match. Mentors, typically Baby Boomers, and mentees from Generation X often find it difficult to relate.²¹ The younger, more diverse generation prioritizes life balance and may appear to lack dedication or have poor work ethic compared to their seniors who put work first.²¹ It may be advantageous to match mentees with mentors based on certain attributes. Several studies observed that racial, ethnic, religious, and gender differences can also interfere with mentoring.^{7,8,15,16,19} For example, a male mentor may struggle to guide a female mentee through her maternity leave and return to work.⁷ Despite the appeal of demographic-based pairing, it is seldom possible. Most available mentors are white men as demonstrated in Figures 1 and 2. Sambunjak et al., however, suggest that the “sensitivity of the mentor was more important than matching on any of these factors.”¹⁹ Thus, sensitive mentors of any race, male or female, can help mentees regardless of whether they share the same ethnicity, religious beliefs, or gender.

Shortage of time is another key contributor to the deficit of mentors. Their role is not confined to one aspect or chapter of the mentee's development, as that of a teacher, coach, advisor, counselor, role model, or peer.^{7,11,12,16,19,22} Mentoring is a long-term commitment that many busy plastic surgeons and trainees feel they cannot make.^{7,19} This especially affects clinician-educators, who juggle research, clinical, and teaching roles and have a great need for mentorship, yet are at a greater risk than others of lacking a mentor.^{8,10} The issue of time is exacerbated by the fact that mentors are often unrecognized and undervalued at academic institutions. Their function is not considered in the processes of tenure or promotion and there are usually no financial or other incentives for faculty to allocate time to mentoring.^{7,15,19}

Maintaining a mentorship can be just as difficult as establishing it. Although there are no real “disadvantages of mentoring itself [there are] problems associated with the improper conduct of the mentoring process.”⁶ These include conflict of interest on behalf of the mentor, betraying the trust, patronizing the mentee, competing with the mentee, and disputes over authorship. Conflict of interest occurs when the mentor is also the mentee's boss or professor. When these roles blur together, the mentor may struggle with the contradictory responsibilities to mentor, perform his or her job, and objectively assess the mentee. To avoid this issue, it is wise to wait until the class or job ends to pursue a mentorship, or seek a mentor without conflicts of interest.^{6,19} As a mentorship progresses, the mentor and mentee grow very close and learn a lot about each other's private lives. Breaching this confidentiality can cause a rift in the relationship or even end it entirely.^{6,23} Trust is essential to the bond between mentor and mentee, who should take great care to preserve and fortify it.¹⁶

Patronizing the mentee can initiate a similar demise of the mentorship. Although the mentor is senior, he or she must avoid belittling the mentee or insisting that the mentee follow his or her advice.^{6,22} Mentors can only offer suggestions, they cannot tell mentees what to do or

force them to follow in their own footsteps.¹⁹ Doing so would only stagnate the development of mentees and prevent them from becoming independent.¹⁵ Similar consequences can arise when a mentor feels threatened by the mentee's success and may even attempt to keep him or her from progressing. Mentors must be comfortable promoting the advancement of their mentee's career, and not harbor any jealousy towards his or her success.¹⁸ Straus et al. wrote of an interesting reverse phenomenon in which potential mentees forgo mentorship for fear that a mentor who is in the same field might steal their ideas.¹⁵ Disputes over authorship or credit are fairly common in the mentoring literature, which has examples of both mentors and mentees commandeering the intellectual property of the other.^{15,19,22} Discussions about authorship and credit should therefore take place at the onset of every project to avoid offense later on.

Creating a Successful Mentorship

A lot of the responsibility for creating and maintaining a successful mentorship falls on the mentee. Although it is the mentor's job to "facilitate the protégé's entry and early advancement in the field," it is up to the mentee to be proactive and make the most of what the mentor has to offer.¹² The best plastic surgeons come from trainees who learn "not just what is required but [try] to go beyond."²⁴ Perhaps the most important duty of the mentee is to be open and honest during discussions and to ask for guidance where and when he/she needs it.^{8,22} The mentee's responsibilities are outlined in Table 3.

Finding the right mentor is a difficult task made worse by the mistaken notion held by some medical students, residents, fellows, and junior faculty that "seeking mentoring is only for those who are weak and cannot cope."⁶ Institutions should work to dissuade this misconception and provide resources to bring mentors and mentees together. The relationship can be initiated by either the person or through a mentoring program. One study found that 28% of faculty needed help finding a mentor. Although self-identified or informal mentors are preferred by mentees, an assigned mentor is better than none.^{8,19}

Mentored individuals are more prepared and successful, generate more peer-reviewed publications, and receive more grant funding than their non-mentored peers.^{6,8,10,13,15,19,25-27} They also report greater career satisfaction, have higher self-efficacy scores, are more able to collaborate, and spend more time doing research.^{6,8,12,16} The benefits of mentoring extend to mentors as well. They too experience more career satisfaction and productivity, enjoy the opportunity to "mold a successor" by passing on skills and knowledge, and are often inspired and challenged by the mentee to go in new directions.^{2,5,6,8,12,24} Mentees pick up on these joys and often go on to become mentors themselves. Sehgal et al. likened institutional investment in mentorship to "planting the seeds for continued success and growth."²⁰

The Future of Mentoring

For mentorship to meet its full potential, mentors must anticipate future issues and educate the next generation of plastic surgeons accordingly. Medicine and plastic surgery are evolving at a rapid pace. The emphasis on translational medicine and the adoption of the hospitalist model of care by most academic hospitals have placed new demands on both the

practitioner and the field.³ There is a greater need for clinician scientists, collaboration, and integrative research, which can be met by the effective use of mentoring.² Mentors can help mentees find balance amidst mounting obligations.²⁸ Feldman et al. found that faculty who had mentors were significantly more likely to be satisfied with their appropriation of time at work.⁸ As the field adapts and changes, so must mentoring relationships. Barondess suggested that mentors be used “more deliberately” to accommodate the “changes in the size and complexity of our educational and training centers.”¹² In the past, it was “paternalistic, authoritarian, [and] strict,” and has since shifted towards “empowering, partnership, [and] inspiring.”^{6,14}

To make mentoring more accessible, institutions should consider implementing a mentoring program. It could be as simple as the department head distributing a list of available mentors to incoming trainees.^{11,15} It might involve a method for pairing individuals based on their research interests.^{10,25} Or, it may be a structured program with training, specific goals or checkpoints, scheduled meetings, and feedback sessions. A few articles suggest that it is advantageous to have multiple mentors.^{8,15} For instance, having one mentor for career goals and planning, another for research, and a third for institution-related advising. Authors suggest different techniques to promote mentoring, but in every situation, mentees and mentors perceive positive effects from their participation. Establishing mentoring programs and providing incentives for mentors, such as recognition, would be worthwhile investments for any teaching or academic hospital.¹⁶

Training faculty to be mentors is especially important. They must be able to provide the mentee with support, answer questions, instruct, and connect with a member of a younger generation or different cultural background. Feldman et al. describes a training program that included workshops for both mentees and mentors focused on communication strategies, roles, responsibilities, goals, and a definition of mentorship. Ninety-six percent of mentors who completed the program felt that it helped them become better mentors and improved their interactions during the mentorship.² Having the necessary tools for open communication could help prevent awkward conversations, tensions between mentors and mentees, or inadvertently offending one another. Additionally, it may help to create or designate a space for mentor-mentee pairs to meet and have funding for resources.^{15,19} Few plastic surgery training programs allow sufficient time for mentoring, so that trainees miss out on important “philosophical discussions” and attention from mentors.²⁴

The National Institutes of Health offer fellows and faculty a number of funded mentorship opportunities through their K-series of career development awards. The K01, K08, and K23 career development awards enable new investigators to conduct mentored research. The newer K99/R00 award facilitates a mentee's transition to an independent clinician-scientist, by providing two years of mentored support followed by three years of independent support. Other awards are aimed at mid-career or senior investigators, including the K05 and K24, which provide support for research projects and protected time to dedicate to mentoring.

Rangel and Moss found a discrepancy in the success and relative numbers of applications between surgical and non-surgical faculty. For K08, K01, and K23 awards, surgical faculty were significantly less successful in obtaining the grants ($p < 0.10$).²⁹ Additionally, there

were significantly fewer career development award applications per faculty member in surgical departments than in non-surgical departments ($p = 0.01$).²⁹ This is likely a reflection of the scarcity of protected time that surgeon-scientists have for research. The importance of mentored and transitional grants should be stressed among new and rising members of plastic surgery, so that they receive the mentoring and support they need to develop successful careers as surgeon-investigators.

The American Society of Plastic Surgeons offers a Young Plastic Surgeons Forum which acts as a liaison between plastic surgeons who are in the early stages of their careers and established surgeons. The forum provides opportunities for networking and leadership development, as well as other topics that are applicable to plastic surgeons who are just starting out.³⁰ Additionally, the Plastic Surgery Foundation recently offered a complimentary Career Fundamentals workshop to assist residents and junior faculty in topics such as how to select a mentor, preparing for an academic career, and successfully managing a career.³¹

Underrepresented populations, including ethnic minorities and women, are making up larger proportions of college graduates and medical school applications than ever before. As Ford predicted eight years ago, the future of the field “is going to depend on our ability to achieve and promote diversity.”⁹ Although he was referring to the future of academic surgery, his message is applicable to plastic surgery. Faculty mentors in plastic surgery must feel comfortable guiding people of different races, cultures, or gender which could encourage more women and minorities to enter the field and usher the demographic composition of plastic surgeons towards that of the general population.^{4,7,8} Selwa suggests that inadequate mentoring largely contributes to the gender disparity in successful faculty.⁷ Although it is possible to succeed in academic medicine without it, sound mentoring can facilitate the advancement and improve the retention of underrepresented faculty.^{9,16}

Despite the overwhelming indications that mentoring is beneficial, the evidence has limitations. Most studies discuss voluntary programs or informal relationships. The types of students that seek out mentoring may have greater interest in research and be more proactive about obtaining their career goals, which could introduce bias into the results by inflating the positive effects of mentoring.³² Few studies use objective measures to assess the results of mentoring. Non-validated surveys are the most commonly employed outcomes measure. An even greater problem is that many studies do not define mentorship before they ask subjects to describe their experiences, so it is impossible to know whether the relationship they discuss is in fact a true mentorship. The generalizability of results is also limited, as nearly all articles on mentoring come from studies conducted in North America and may not be applicable in other areas of the world.¹⁹

The current literature still has gaps that need to be addressed. The most apparent gap is the scarcity of articles addressing the current state of mentoring in plastic surgery. Before institutions can establish mentoring programs, research must shed light on the present availability of mentors, what specific functions they serve or fail to serve, and how to best incorporate them into plastic surgery training programs. Frei et al. noted a scarcity of recommendations for being an ideal mentee. Most articles focus on the duties and attributes

of the mentor, but do not provide in depth discussions about the mentee's responsibilities. The same article also addressed the shortage of examples of failures in mentoring or possible adverse effects.¹³ This is not a new phenomenon in medical literature, whose authors feel pressure to publish positive results. However, because failed or defective mentorships can cause career setbacks or emotional injury, it is important for more articles to address the pitfalls of bad mentoring. Taherian and Shekarchian suggested a need for research on the cost-effectiveness of mentoring.⁶ Such studies could prove useful to measure the benefits per dollars spent in funding or per hour reallocated to mentoring activities by faculty.

There is no doubt that mentors are invaluable assets to physicians at any stage of their career, or that it would be beneficial to increase the number of available mentors. They set an example, provide continuity between waves of researchers, and help aspiring doctors meet their potential. Barondess counsels us to “reflect carefully on the content of the modern mentoring role and of the messages we send, deliberately or not, explicitly or implicitly, positive or negative.”¹² The medical community must consider how to guide the evolution of mentorship to help educate the next generation of physicians and clinical scientists and prepare them to meet the medical challenges of the future.

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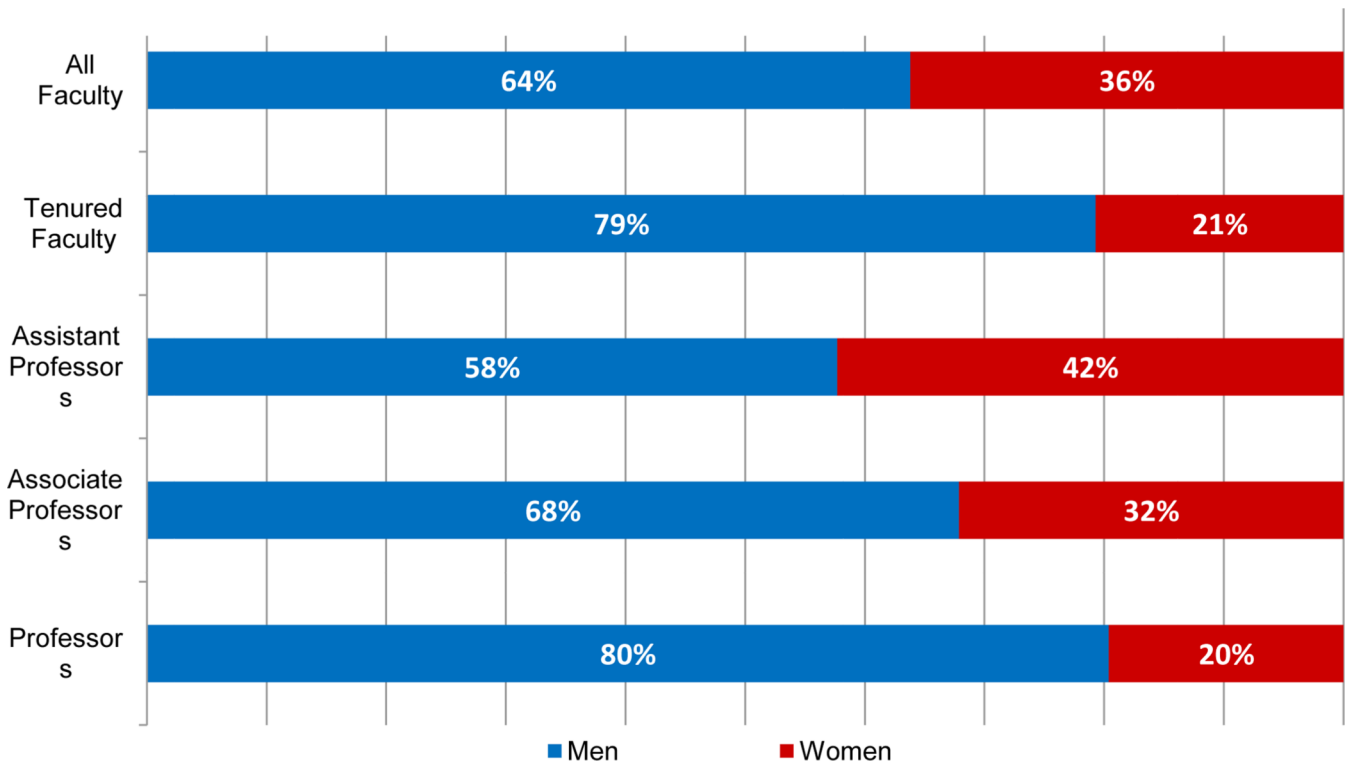


Figure 1.
Gender Discrepancies among Full-time Medical School Faculty in 2011

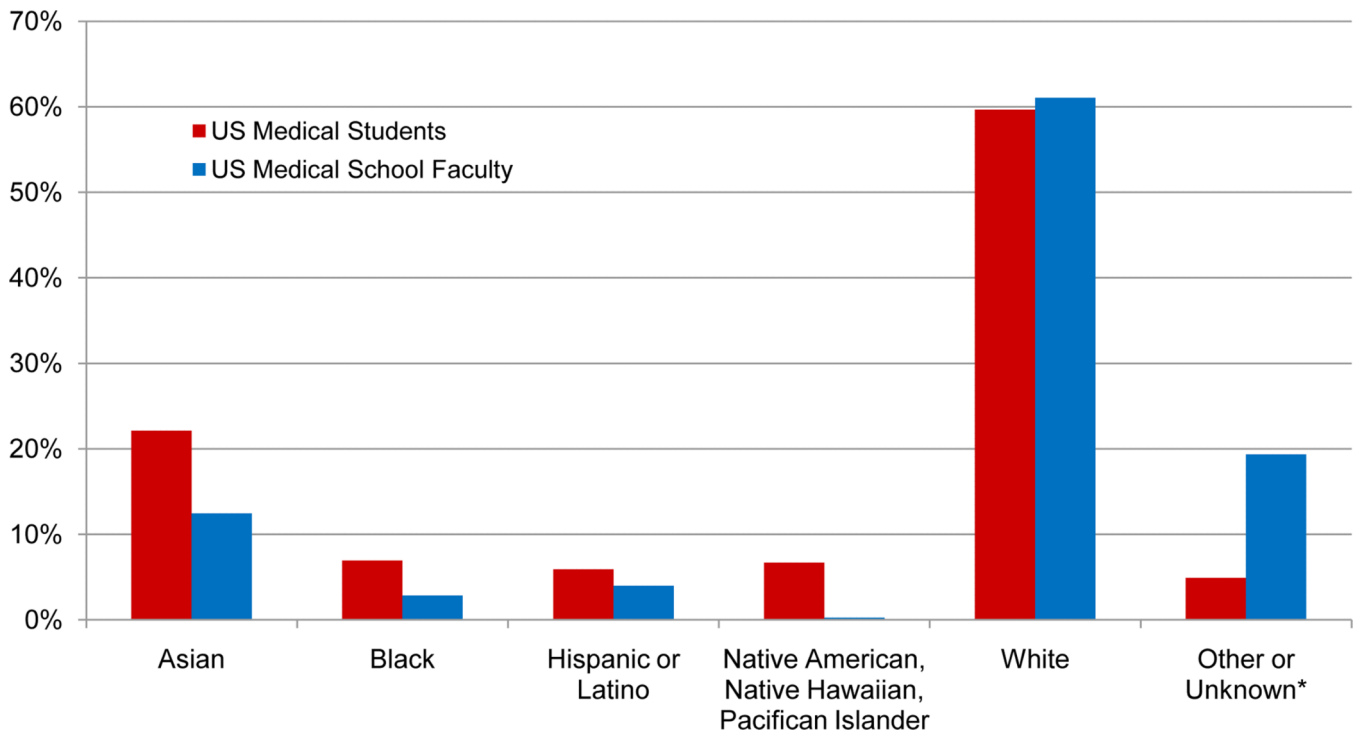


Figure 2.
Racial and Ethnic Diversity among Medical Students and Medical School Faculty in 2011

Table 1

Characteristics of an Ideal Mentor

Enthusiastic ^{18,27}
Strong communication skills ^{18,21,17}
Patient ¹⁴
Sensitivity and compassion ^{18,17, 19}
Selfless ^{18,5,6, 27}
Robust intellectual, technical, and research capabilities ²⁴
Approachable and available ^{7,15,18}
Demonstrates professional, ethical behavior ^{7,27}
Respectful ^{15,18,19}
Honest and trustworthy ^{5-7,15,19,27}
Reliable and committed ^{10,17, 22,}

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Table 2

Important Duties of a Mentor

Educational	Professional
Teach by example, be a role model for life balance, professionalism ^{7,12,14,15,27,28}	Help mentee set and achieve career goals ¹¹
Teach necessary professional skills such as research methods, ethical conduct, and time management ^{7,10,14}	Provide resources and opportunities for research, networking, and collaboration ^{7,10,15,18,19}
Transfer technical skills ²⁸	Help mentee overcome difficulties ^{15,22}
Give feedback, thoroughly and frequently ^{15,18,19,22}	Career counseling and planning ^{3-8,10,15,18,18,22}
Stimulate mentees, set high expectations, and help them meet their potential ^{3,5,7,14,27}	Introduce mentee to environment, customs, and leading figures in the field ^{6,12,18}

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Table 3

Mentee's Responsibilities

Identify a suitable mentor and which areas you require help with ^{10, 19}
Be reliable and committed ^{15, 22}
Prepare for meetings and show the mentor you are dedicated, not wasting his or her time ¹⁹
Periodically self-assess your current skills and relationship to career goals ¹⁰
Be receptive and willing to learn from the mentor ¹⁹
Do not hesitate to bring up topics you want to discuss or to ask for help ⁸
Be honest and tell your mentor what you think, not what you think they want to hear ^{19,22}

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