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Building and sustaining mentor interactions as a mentee

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Abstract

Mentorship is experience and/or knowledge-based guidance. Mentors support, sponsor and advocate for mentees. Having one or more mentors when you seek advice can significantly influence and improve your research endeavours, well-being and career development. Positive mentee–mentor relationships are vital for maintaining work–life balance and success in careers. Early-career researchers (ECRs), in particular, can benefit from mentorship to navigate challenges in academic and nonacademic life and careers. Yet, strategies for selecting mentors and maintaining interactions with them are often underdiscussed within research environments. In this Words of Advice, we provide recommendations for ECRs to seek and manage mentorship interactions. Our article draws from our experiences as ECRs and published work, to provide suggestions for mentees to proactively promote beneficial mentorship interactions. The recommended practices highlight the importance of identifying mentorship needs, planning and

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selecting multiple and diverse mentors, setting goals, and maintaining constructive, and mutually beneficial working relationships with mentors.

Keywords

early-career researchers; graduate education; leadership; mentees; mentorship; peer mentors

Early-career researchers (ECRs), such as graduate students, postdoctoral fellows, research staff and junior faculty members, work in competitive academic environments and must navigate research, teaching, service and management duties as well as multiple career transitions. Mentorship can improve the mentee's academic experience, leading to higher productivity and job satisfaction [1,2]. Mentorship is voluntary formal or informal guidance provided by a more seasoned person (mentor) to a less established person (mentee) to facilitate the mentee's career choices and professional development. It may also be mutual guidance between two people at a similar career stage or with similar professional experience (peer mentoring). Mentors are trusted advisors who draw from their academic, professional and life experiences to challenge, encourage, support and provide feedback to their mentees. Although success can be outside of personal control, guidance from one or several mentors can provide optimism and a sense of direction, help improve your skills, confidence, research endeavours and work-life balance, influence your professional identity, provide ethical and moral guidance, and empower you to advance your academic career [3–7]. Mentors who care about your life and career trajectory and success can guide you through unexplored territories that might be familiar to them, act as a sounding board in moments of self-doubt and help you develop your training goals. Mentors can take on different roles, from inspirational figures to personal career guides, and the levels of personal involvement can change dynamically.

Mentorship versus management

Mentorship is distinct from management, not aimed at providing instructive directions, and mentors are not planners, disciplinarians or guardians. Rather, mentorship provides mentees with gentle guidance and requisite insight to better make their own decisions. Some mentors can also become advocates for their mentees. In a mentorship, goals and progress evaluation need to be driven by the self-motivated mentee, whereas in a management relationship, it is often the manager that sets goals and evaluates progress [8,9]. As such, the advice mentorship confers should be treated with the relevant biases that emerge from receiving advice from one person. Successful mentee–mentor relationships are mentee-driven and mentor-guided, with both sides willing to invest the time and energy to develop their interactions [10]. Trust, an open environment for discussions and confidentiality on what can or cannot be discussed outside the relationship are key elements of mentee–mentor interactions. The concept of empowering mentees to be active and equal participants in mentor–mentee relationships, also referred to as 'Mentoring Up', has been recently advocated [2,11]. Yet strategies for selecting mentors, maintaining working interactions with them, managing conflicts and avoiding undesirable interactions are often left unaddressed in research environments [1,12,13].

Seek mentorship at all career stages

To determine whether you require a mentor or not, ask yourself if you could benefit from guidance in a specific research area, navigating academic life or career development. Mentors can advise ECRs on a range of topics such as research design, scientific and professional writing, presentation style, effective teaching strategies, career development activities and mentoring of their own mentees. Mentors and mentees should also learn from each other; your own trainees can also teach you, as fresh voices often seek new grounds and adopt new approaches and solutions to problems.

Mentors do not necessarily need to provide mentorship indefinitely and can be sought for a specific period. For example, a graduate or postdoctoral advisor or a thesis committee member may act as a mentor but only provide mentorship while you are in training. They may also, upon agreement, serve as a lifelong mentor. Short-term mentors can teach you how to conduct an experiment, update your curriculum vitae (CV) or support you during a specific phase (for instance, during preparation for a doctoral qualifying exam). Long-term mentoring may be provided throughout your entire academic training period, perhaps by a senior colleague in your department or a peer who continues to interact with you throughout your career. Seek mentors that can support you regardless of your plan to continue on an academic or nonacademic career. Evaluate your progress and request feedback from your mentors to plan the next steps. If you do not require mentorship from a particular mentor beyond a certain time, be honest and transparent about the end of that mentoring relationship, as it may not be obvious to your mentor(s); however, do so in a respectful manner (see Table 1). Devise plans in case you as a mentee need to step away unexpectedly. You should be empowered to end or change your mentor assignments, if necessary.

Identify multiple mentors with a range of backgrounds, experiences and skills

First, determine what type(s) of mentorship(s) you need, then identify multiple people for each mentorship area. Speak to all potential mentors individually and assess who shares mutual interests in forming the mentee–mentor relationship with you. Talk to multiple current and former mentees to hear their experiences on being mentored by your potential mentor. These experiences and viewpoints will likely be diverse and valuable, but it is important to gauge whether that particular mentor may be a good fit for you by examining your personal needs. In general, ECRs in training tend to regard their primary research advisor as their mentor, but their advisor may not be equipped to efficiently mentor them in other areas, such as career development and career choices. Assigned mentor(s) may not always be suitable or have sufficient time to address all your needs associated with the various facets of academic life. For instance, ECR faculty may be assigned a senior faculty mentor at their institution at the start of their position, but they might not provide sufficient mentorship. Seek mentors who respect your opinions and choices and go beyond ‘trying to assist you’ towards ‘helping you recognize your strengths and challenges, helping you build confidence and competence to help yourself’, focusing on empowerment and not solutionism.

Every professional you interact with can serve as a potential mentor if you and that person are both open to the idea. A mutually beneficial, constructive discussion with a researcher may motivate both of you to schedule regular conversations. As you seek to fulfil your mentoring needs, you can approach individuals within your thesis committee, department, university, or elsewhere—your institution may have a list of faculty members willing to be mentors. You may ask department staff members or colleagues in your laboratory to introduce you to potential mentors. Forming mentor–mentee relationships with fellow ECRs who are senior to you may also be beneficial as they would be familiar with current processes and career stage-specific challenges. Further, they may also be able to suggest potential mentors. External advice can be sought during academic seminars and conferences where there might also be an opportunity to attend specific mentoring sessions, or during collaborative project meetings. Other avenues include utilizing online mentoring platforms provided by scientific societies or scientific communities of ECRs (see the last recommendation, Table 2).

Furthermore, you can never have too many mentors. While for many career-related questions, senior and experienced mentors might give you the most useful insights, for certain career-related issues, seeking mentors with a similar background (for instance, similar identity group) or in the same personal situation is often the most efficient approach. To initiate such a network, you need to become goal-oriented. For example, given that you face challenges in a specific area ask who in your personal network of colleagues, more senior researchers, or (non-) science friends, is the most knowledgeable person to address that topic. Find multiple mentors that can provide different perspectives for your development [14]. A multimentor model is based on selecting multiple mentors at different stages of professional careers and encourages peer mentorship (see the last recommendation) among junior researchers [15]. Types of mentorship vary, such as one-to-one mentorship, multiple mentors for one mentee, one mentor for multiple members in a team, peer mentoring, a junior member of staff mentoring more senior ones and vice versa. One mentor can serve as your guide in multiple areas, or each mentor may fulfil a single mentorship role. Commonly, ECRs may choose to have research, teaching and career mentors. Academic advisors can be research mentors that direct you and help you think critically about your research, execute research projects and get your research findings published; a teaching mentor is someone who advises on appropriate teaching pedagogy for your classroom or mentees; and a career mentor is someone who offers advice on one’s career development. You may want to seek mentors for advice on skills development, learning from a role model, troubleshooting a specific issue or gaining team-building skills. Mentorship can also be sought for sensitive topics such as professional communication, conflict management or navigating structural challenges specific to parental status, marginalized communities in academia, or mentees with different identities (gender, orientation, racial, ethnic, immigrant, economic, among others) that differ from the current mentors (Table 3) [15–19]. If suitable, mentors can also serve as sponsors or advocates for mentees especially those from underrepresented minority groups to help these ECRs in sourcing resources and opportunities [20]. With some mentors, you may tend to mostly discuss work whereas with others you may have more personal discussions. Any mentor may surprise you by helping with situations in which you had not expected them to provide feedback. Thus, create a

network of mentors with diverse interests, backgrounds and skillsets and approach each for specific issues rather than being under the support of only one mentor [21,22]. Keep in mind that while having many mentors is generally beneficial (as you may not agree with one mentor's opinion), it is ultimately up to you, the mentee, to decide what advice is best for you, given your circumstances.

Set and manage mentoring expectations

After selecting your mentor(s), establish the relationship by setting up regular meetings. Mentors appreciate mentees who pay attention to their time, set expectations and maintain boundaries. For formal mentors, clearly define your goals, describe the role of the mentor, and expectations about the mentor–mentee relationship (Table 4) [23]. For less formal mentors, such as cultural or peer mentors, informal discussions of goals are appropriate [16] (Table 3). Discuss mentoring approaches and what expertise can be offered to you to learn about the mentor's strategies [24]. Mentees often believe that their mentors are the most important part of the mentee–mentor relationship. However, this is not true because a mentee–mentor relationship needs to function as a team effort. As a mentee, you have to communicate expectations and priorities, and discuss these with your mentor as your relationship evolves (Tables 1, 3 and 4).

Mentors sometimes also face challenges due to a busy schedule covering many responsibilities, which may result in insufficient guidance and support of their mentees. This may lead to a lack of preparation or disengagement. Mentors may also in some instances excessively fixate on a specific issue or become too involved with their mentee's work, or appear unable to ask specific questions that could help mentees get the most out of their conversations. However, this may not be a constant challenge and a mentee should not evaluate the whole relationship based on a single meeting or interaction with their mentor. For long-term mitigation of situations, meetings with formal mentors should have some measure to assess mentoring effectiveness and identify the next steps in the right direction. Both sides can complete a questionnaire, and compare and discuss their responses during their first meeting to clarify expectations of the mentee–mentor relationship right from the beginning (sample mentorship agreement as Table 4). Communicate how frequently and how long you can meet; establish and manage expectations by being specific about what your goals for the relationship are and what you plan to work on with your mentor. This will lead to efficient use of your and your mentors' time, and also help to determine how often you should meet.

Be upfront and honest with your mentor by preparing for your meetings, bringing forward specific questions, actionable items or a meeting agenda. While a good mentor will also prepare specific meeting points, these may or may not align well with your goals for a singular meeting; therefore, a mentee should not rely solely on the mentor to lead the interaction. Ask yourself if this mentor is investing time for you and whether you feel satisfied with the discussions after your meetings.

Do not fall into common misconceptions

Mentees tend to forget that mentors are not managers, and it is not their responsibility to work on your project. Mentees may assume that mentors know all the answers. This is not always the case, and as a mentee, it is important to appreciate mentors who admit when they are not knowledgeable or informed on certain issues. Mentees may also assume that mentors at any moment, day or week have time to meet with mentees. Mentors often look for mentees who are excited about learning, and are resourceful. Cooperation and collaborative learning are central to the mentee–mentor relationship.

Another issue might be conflicting advice being given to a mentee by multiple mentors. Mentor guidance on what they would do (or did do), how they came to that decision and (potentially) if they would do things differently. What worked for mentor A may not have worked for mentor B and may or may not work for you (‘work’ here may refer to professional success and/or personal satisfaction). Mentors may share strategies that were effective for them personally but may not necessarily work for the mentee, especially given that the mentee may be going through early-career stages decades after the mentor and/or in a different environment. Thus, ultimately there are no guarantees that your mentor will be able to provide the advice that will work best for you. You may receive advice that is inherently personal and potentially biased, but mentorship advice is not supposed to provide a specific direction, thus eventually you will need to use your own judgement to make the best decisions. Other issues that may result in unsuccessful mentee–mentor relationships include inadequate communication, conflicts of interest, lack of commitment from either party, persistent personality differences, real or perceived competition between parties, or mentor’s lack of experience in their role [25] (Tables 1 and 3).

Manage your mentoring relationship and learn from your interactions

Approach your mentorship relationship proactively, with a positive attitude and intention. An important aspect of the mentoring relationship is that you and your mentor(s) get along well and that there is mutual trust. A mentee–mentor relationship should also include discussions that are not necessarily positive or straightforward, such as when mistakes occur or when there are difficult personal circumstances. You may differ from your mentor in identity, character and style (Table 3). Ask for clarification when you have doubts about what your mentor is trying to convey. Some mentee–mentor relationships will be exclusively professional, where the mentee receives help on academic and research matters and in this type of relationship you do not need to have a close friendship, but criticisms should be constructive, not offensive. Other mentee–mentor relationships can be developed for personal mentoring and may stem from a shared friendship. Each mentee–mentor relationship works differently from others and there is no one right relationship, but the hope is to achieve one that is built on mutual understanding, respect, communication and support that benefits both the mentor and the mentee (Table 4).

After several interactions with a given mentor, if you do not feel confident in the shared values and goals, it requires careful scrutiny on the mentee’s part whether the relationship will be fruitful or not. You chose a given mentor based on the recognition that they could

provide value to you in terms of professional advice. If you find yourself disagreeing with their perspective, it is important to think about why you disagree. If a mentor operates under a different set of assumptions understanding those assumptions is of great value, even if you ultimately disagree with them. The mentor may not be isolated in those views, and being open to and aware of different opinions is a valuable insight a mentor can offer. The prudent approach in this instance is to make an informed decision based on the difference of opinions and ideas of your mentors to navigate whether it changed your mind on a topic or question, or more firmly entrenched your original perspective.

There is also immense value in seeing how things should or should not be done. Discussing difficult topics with a mentor, hearing about their approach and deciding if you agree (or not) are a key part of developing one's professional toolkit. Even if you do not voice those opinions, recognizing how your own moral and professional compass squares up against a colleague you respect is a critical part of professional and personal development. That said if a mentor discourages difficult conversations or is displeased with your decision to go against their recommendation or suggestion, or refuses to acknowledge your perspective as valid (even if they disagree) then that becomes an issue and is grounds for reassessing or terminating a mentoring relationship. Disagreement on advice is not necessarily bad assuming there is consensus with the mentor. Getting along and being respectful to your mentor is important, but this does not mean that mentees should overlook the mentors' shortcomings and disregard actions that hurt the mentee (Tables 1 and 3). Importantly, if a mentee–mentor relationship is abusive or toxic, the mentee should end the relationship and seek help from their institution.

Become a keen and proactive mentee and evaluate your role as a mentee often

A mentee's keenness is important for building enthusiasm in the mentee–mentor interactions that lead to a reciprocal relationship. Self-motivation is the key to successful mentee–mentor interactions. The mentee should be able to set their own goals, strive to actively seek feedback, ask questions and keep an accurate record of progress. Every person is different, do not compare yourself to others and recognize that your strengths and challenges can be different from others. Be passionate and proactive about sustaining the mentoring relationship. As an ECR, your passions and interests may change and that is a normal part of academic research and training. You need to be an active participant in the mentoring relationship and not merely expect to receive help from your mentor. The mentee cannot expect or rely on the mentor to do the heavy lifting. Mentors invest their valuable time to help you, and you invest your time in the relationship, so aim to schedule meetings and calls in advance to ensure that you keep your mentors enthused and engaged. Have a research edge, and develop your academic passions and an interest in professional societies in your discipline to identify senior researchers who may be willing to introduce you to researchers within their network, invite you to give a seminar, help you source an internship and help mentor and sponsor your career. Initiative and passion will help to keep mentors engaged and excited about working with you.

It is key for ECRs to invest considerable thought into a mentee–mentor relationship. As a mentee, examine your roles and the specific qualities that you can bring to ensure successful interactions with your mentor(s) at every career stage [26]. Mentees need to bring the initiative and desire to engage and to achieve. Make sure the relationship with your mentors is reciprocal, with mutual respect and seeking shared values. A successful relationship is beneficial to the mentee as well as the mentor with frequent discussions, working towards their goals. There are other gains for mentors besides being included in publications or mentioned at conferences because of their mentees. Some mentors may find satisfaction in helping mentees realize a career goal, or helping researchers in how to mentor students and trainees of their own. Both the mentor and mentee need to adapt to each other's style and consider each other's goals and interests to find ways to compromise. Active communication is key for successful mentee–mentor relationships. You may not agree on everything with your mentor, but talking through disagreements leads to a more beneficial relationship. Remember to thank your mentor often for their efforts. Mentors and mentees should have the opportunity to share feedback with each other and mentees should have opportunities to reflect on their progress.

Take charge of your career development and seek peer mentorship

Recognizing what constitutes meaningful work requires reflection, assessing and improving one's skills, participating in relevant experiences, exploring diverse career options and connecting as early as possible with professionals who work in your selected disciplines [21,27]. These career exploration activities should be conducted in balance with the more scholarly roles—graduate students and postdoctoral researchers often take little time off from research to actively address personal and career development goals, but the development of additional expertise is crucial and will help, not impair, your professional success [28,29]. It is your responsibility, and not that of your mentor(s), to engage in your professional development activities [21,30,31]. Actively initiate an individual development plan [32] and participate in professional development initiatives in your laboratory, department and institution, for instance as a member of graduate or postdoctoral committees, and organization of journal clubs [33,34]. Ask your mentors, the institution's career development office to point you towards additional helpful people and resources and/or use online career development resources for guidance towards building a CV that can help you with your next career transition [35] (Tables 2 and 5).

Joining support groups is a way to receive mentorship that can complement your other mentorship relationships [36]. It is important to get exposed to different approaches and opinions from your peers who are researchers at a similar career stage [37,38]. As peers, find professional characteristics in each other that you admire and hope to emulate. In these less formal settings, you can receive ideas indirectly from different mentors, learn about your peers' experiences and be more flexible in choosing what advice best suits you [39]. In addition to reaching out to local peers (such as colleagues at your institution), contact researchers in your discipline at scientific conferences, join online mentoring programmes in a range of disciplines where you can be assigned a remote mentor, join professional associations which provide networking opportunities or find online courses on specific

topics that you need to improve upon and subsequently look for mentors within these platforms (Table 2).

Conclusions

In this Words of Advice, we provide recommendations for scholars to initiate, sustain and improve effective mentee–mentor relationships. Navigating research environments can be challenging for ECRs; thus, selecting the right mentors, ones that care about the mentee and remain interested in their success, can help improve the ECR's research endeavour, career advancement and work–life balance. Even the most seasoned scientists can benefit from seeking the support of mentor(s). A mentor is a person who knows you and values your efforts so it takes time to build mentee–mentor relationships. Seek honest mentors that do not impose their work style on mentees, help you recognize your strengths, help you navigate challenges and support both your academic or nonacademic career choices. Further, seek community in peers who may also be willing to serve as your mentors. Realize the value of your own experiences and stories, learn to ask the right questions and manage your involvement in projects you are part of as a mentee. The recommendations provided here can be adapted and refined to specific circumstances of each mentee–mentor relationship to help maximize the strength and efficacy of interactions. It is also important for both mentors and mentees to educate themselves about the role that cultural backgrounds can play in communication. A successful relationship is one with a lasting positive impact in which the mentor helps to equip the mentee with tools that they can apply in future contexts.

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Abbreviations

ECR	early-career researcher
CV	curriculum vitae

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Table 1.

Examples to help mentees manage mentorship.

Theme	Description	Do	Do Not
Mentor is micromanaging	Mentor is always generating timelines and next steps in the project Mentor calls/emails frequently about minor work-related details Mentor does not allow other professional development activities such as teaching, participation in nonacademic groups	Discuss with your mentor that you would like more independence Schedule regular timed meetings with your mentor Develop a method to share information/data that works for both mentor and mentee	Do not ignore the situation and assume that you will learn independence later
Mentor is very hands-off	Mentor is not accessible to discuss scientific or career questions Mentor is not familiar with the project or particulars of the lab environment Some caring mentors prefer a hands-off style	Discuss with your mentor that you would like more support Schedule regular (weekly or bi-weekly) timed meetings with your mentor While mentor may feel they are becoming more hands-on, you have to evaluate if that change is enough for you as a mentee. If not, mentoring mismatches happen, in which case, end this mentee–mentor relationship (see below) and actively seek mentorship elsewhere	Do not ignore the situation and assume that you can figure things out yourself
Mentor is not familiar with mentee career goals	Many mentors will be within academics, and therefore, their career experience will be limited to academia	Discuss career goals with mentors; they may also have connections outside of academia or experience/advice for your career goal	Do not limit your mentoring to academic advisors
Mentor is unable to answer mentee questions	While mentors are generally more experienced than those they mentor, they still do not have all the answers	Discuss the question/issue with your mentor. Even if they do not have an immediate response or answer, they may share experiences that can help guide you towards a solution	Do not assume your mentor has all the answers Do not think less of your mentor for not knowing all the answers
Lack of commitment from mentor	Although a mentor is committed at the start of the interactions, unexpected events may occur that causes them to withdraw	If your mentor appears unresponsive for a long time, send them an email as a reminder, assuming they are just busy. If you do not receive a response, then write or call again, asking if something is wrong	Do not rush to judgement and give your mentors the benefit of the doubt in your interactions
Ending mentee–mentor interactions	Some mentoring programmes have a preset date for completion. In other cases, you will need to manage ending the interactions and this may require planning ahead and emotional energy Mentorship relationships will continue or fade depending on the needs of a mentee and/or time investment by mentors	Scale back interactions with a mentor who you feel is less helpful than others. This would be a more parsimonious approach to ending the relationship and not impact your future relationship with that mentor Suggest this gradually as ‘I feel that I have met my development goals and thank you for your help and advice in achieving these goals’ Or ‘My priorities have changed and I am not able to invest the time needed in this relationship and would not want to take up your time’	Do not directly tell the mentor that you no longer wish to receive their mentorship. This may be an unnecessary final statement to cut off what could (in the future) be an important relationship and could potentially be a risky manoeuvre

Table 2.

Online peer mentorship resources for ECRs.

Group name	Associated organization	Agenda	Reference
Graduate students			
1000 Girls, 1000 Futures	The New York Academy of Science	To engage young women in STEM encouraging them to pursue STEM careers	https://www.nyas.org/programs/global-stem-alliance/1000-girls-1000-futures/
Graduate Student Slack	A group of graduate students	Peer support community for graduate students, by graduate students on Slack to support each other through the process of earning a doctoral degree	https://gradstudentslack.wordpress.com/
International Scholars Slack	A group of international scholars in the United States	Peer support community open to all international scholars, run by international scholars to exchange tips and discuss visa and immigration challenges, helping ECRs find support, collaborations, job and funding opportunities	https://twitter.com/InternationUS
Peer advising resources	The National Academic Advising Association (NACADA)	Provides opportunities for professional development, networking, and leadership for their membership, promoting student success by advancing the field of academic advising globally	https://nacada.ksu.edu/Resources/Clearinghouse/Peer-Advising.aspx
National Research Mentoring Network (NRMN)	Center for the Improvement of Mentored Experiences in Research (CIMER)	A social networking platform providing mentor certification and professional development webinars. Facilitating long-term mentoring connections via guided prompts to work towards accomplishing personal goals. Helps ECRs find a mentor based on their matching	https://nrmnet.net/#undergradPopup
My Mentor by NRMN	A Virtual Mentoring Platform	algorithm, desired search criteria, or let NRMN find a mentoring partner	https://nrmnet.net/mymentor/
Postdoctoral researchers			
Future PI Slack	A peer support group by postdocs for postdocs on academic track	Informal international peer mentoring for postdoctoral researchers across a wide range of disciplines	https://futurepislack.wordpress.com/
Plant Postdoc Slack	A peer support group by postdocs and for postdocs in plant sciences	A community for postdocs working in plant-related fields to share, discuss, and plan for navigating careers. The group provides peer-review for application materials, sharing advice and information on career opportunities	https://plantpostdocs.com/join-us/
Group leaders/Faculty/Principal Investigators (PIs)			
New PI Slack	An international Slack community of assistant professors	Peer support for and by assistant professors in life and biomedical sciences worldwide formed to help address and discuss common challenges	https://newpislack.wordpress.com/
UK New PI Slack	A Slack community of assistant professors with members based in the United Kingdom	Peer support for and by assistant professors in biomedical sciences hired and based at UK institutions, formed to help address and discuss common challenges	https://uknewpi.slack.com/
New PIs Germany Slack	A Slack for all junior research group leaders in German academia	Peer support by exchanging ideas and resources, supporting each other, and discussing work–life in Germany, German academia and obtaining tenure in Germany	https://twitter.com/NewPIsGer
Mid-Career PI Slack	A Slack community of associate professors (mid-career and above faculty)	Peer support for and by mid-career faculty in biomedical sciences to discuss this career stage	https://twitter.com/mid_career_pi?lang=en

Table 3.

Examples to help improve mentee–mentor interactions.

Theme	Description	Do	Do Not
Holding your mentor in high regards	Mentees often think about the ways they respect or learn from their mentor Mentees may be frustrated with their mentor if their backgrounds and expertise do not match their mentors.	Respect your mentor(s) for their unique skills and perspectives and turn your interactions into a learning experience Approach the mentee–mentor relationship with a positive attitude (with the exception of abusive and/or toxic relationships)	Do not hesitate to have a conversation with your mentor about seeking other expertise for your research and career development
Bonding with your mentor	It is not realistic to expect every mentee–mentor pair to bond instantly	If you do not feel comfortable discussing certain issues with your mentor, try to focus on what you can learn from that person and look for other informal mentors for other needs	Do not abandon your mentee–mentor interactions right away and give your mentor time to adjust
Tense interactions with a mentor	The mentee has a difficult time speaking with the mentor due to nerves, anxiety, stress induced by the mentor or other situations	Prepare for meetings well in advance Discuss projects/questions with others in the lab or with other peers/colleagues in advance. Discuss this with the PI too, if your anxiety is debilitating	Do not assume that this is fine, thus allowing it to impact your well-being negatively
Mentorship on sensitive topics	Topics such as professional communication, conflict management, salary negotiation or navigating structural challenges specific to parents or marginalized communities in academia	Mentees: If you are unsure about whether you should discuss a topic with your mentor or mentee, you could ask them explicitly if they would be willing to discuss the said topic Mentors: Do listen to your mentees and create a safe space	Mentees: Do not assume you can discuss sensitive topics with any mentor Mentors: Do not rely on your mentees to educate you on sensitive workplace or cultural issues
Unrealistic expectations for mentors or mentees	Occasionally, mentors and mentees may expect too much from one another	Realize that the other person may be busy with work–life challenges. Try to be understanding and appreciative of the benefits of the relationship	As mentees, you should not expect your mentor to ‘make your career’ or provide you with all the answers

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Table 4.

General plan sheet for managing mentoring expectations (a mentorship agreement).

Theme	Mentee's response	Mentor's response	Consensus
How often will you meet and how long for?			
How/Where will you meet? Face-to-Face (virtual or in-person) meeting?			
Who sets the agenda? How will this be managed? (e.g. will the agenda be sent a week before the meeting to give both parties time to prepare?)			
What topics do you want to discuss? What do you want out of this relationship?			
What expertise and advice can you offer or do you need?			
Reflect on different aspects of your own experiences			
Ask yourself: what do you have to bring as a mentor?			
What is your story?			
What do you think the other person expects of you?			
How open are you to feedback/to giving feedback, including constructive criticism?			
What type of mentoring is needed/given? Instructive or nondirective? Goal-orientated?			
What are your expectations regarding confidentiality?			
What are the boundaries of this relationship?			
What don't you want to talk about (e.g. personal life, job applications, etc. Note: this may change during the course of the mentoring)?			
When/how will you review the mentoring arrangement, to make sure it is working for both parties?			
How will conflicts be managed?			
When and how will third parties be included to assist in conflict management?			
Who will those third-party individuals be or how will they be identified?			
When will the relationship end?			
What is a successful outcome?			

Table 5.

Online career development tools for ECRs.

Platform	Associated organization	Goals	Reference
Individual Development Plan (IDP)	Science Magazine Careers section	Assists trainees and ECRs in generating career goals and research objectives [32]	https://myidp.sciencecareers.org/
Career Development courses and Webinars	American Society for Cell Biology	Offers numerous career development courses, workshops and programmes.	https://www.ascb.org/career-development/
OITE careers	Career services centre of the NIH Office of Intramural Training and Education	Responds to frequently asked questions and offer guidance for career planning	https://oitecareersblog.od.nih.gov/category/career-options-series/
National Postdoctoral Association	United States National Postdoctoral Association	Offers guidance to prospective and current postdocs	https://www.nationalpostdoc.org/default.aspx
Teaching resources	Center for the Integration of Research, Teaching and Learning	Offers resources for advancing the teaching of STEM disciplines in higher education	https://www.cirtl.net/