COLLABORATION AND MENTORSHIP

New researchers should assemble a team of collaborators and mentors early in the research process.

5.1 Collaborators and Consultants

Scientific research is rarely completed by one person working alone, even if the lead investigator may spend many hours working independently on various aspects of a project. Although some papers in the health sciences have only one author, the typical paper has about four coauthors and some have dozens of coauthors. Most projects are headed by a **lead researcher**, defined here as the researcher who will do the majority of the work. (Sometimes, the term "lead researcher" is instead used to refer to the **senior researcher**, an experienced researcher who guides the work of a newer investigator.) Once the lead researcher has committed to doing a research project, it is helpful to assemble a team of collaborators who can help ensure that the project conducted is:

- Scientifically valid
- Ethical and culturally appropriate
- Time- and cost-efficient

For students, the first step is identifying a professor or other experienced researcher to serve as a mentor. For early career professionals, one or more senior colleagues may be willing to serve as formal or informal mentors. Mentors can help the lead author identify and connect with other potential collaborators, such as experts on the study population, experts on the exposure or disease being examined, experts on the study design or methods being used for the project, and technical experts such as statisticians and laboratory specialists. For international research projects, at least one local researcher at the study site should be a coinvestigator who is involved in every step of the research process, including the identification of the study question, the design of the study, and the collection of data.

Some of the individuals the lead researcher communicates with may become core members of the research team and earn coauthorship. Others may play a more limited role as consultants. The lead author should have a conversation with all potential contributors about the amount of time they can dedicate to the project and their expectations regarding compensation and authorship. For example, a statistical consultant may ask to be paid by the hour to help a researcher think through analysis options as a non-coauthor, or the statistician may waive the consulting fee but request coauthorship in return for the development of a data analysis plan, or another arrangement may be requested. The lead author should maintain a record of all the statistical consultants, laboratory technicians, interviewers, librarians, and others who contribute in a meaningful way to the project. When appropriate, these individuals who do not earn coauthorship can be thanked in the acknowledgments sections of manuscripts that benefited from their contributions. (Always ask for permission to thank people by name, because some people prefer not to have their names published.)

5.2 Finding Research Mentors

Sometimes a new investigator does not have a choice about who will supervise a project because the supervisor is assigned by an employer or an academic program director. In this situation, the individual may find it helpful to seek out a team of several mentors who can provide supplemental guidance and advice during the project. (If these individuals may earn coauthorship as a result of their mentorship, their project-specific involvement must be approved by the assigned primary supervisor prior to involving them in the project. The supervisor does not need to approve other mentorship roles, such as those that relate to general professional development.) Student researchers writing theses or dissertations may need to identify a primary mentor and then recruit several additional established scholars to serve on their research committees. New investigators who work in a unit or study in a program that does not have a research requirement may have to seek out their own supervisors and mentors for projects.

Research **mentorship** is a formal or informal relationship in which an experienced mentor offers professional development advice and guidance to a less experienced mentee. When seeking research mentorship, it is important to find mentors who are a good match to the needs and personality of the mentee. New investigators seeking mentorship can identify potential advisors by:

- Asking colleagues, classmates, professors, and others about experienced researchers who might be helpful mentors based on shared research interests, the type(s) of mentorship the new investigator is seeking, and whether the communication style of the potential mentor is a good match to that of the mentee
- Searching the profiles of researchers at the new investigator's home institution (or potential collaborating institutions) to see who is actively conducting and publishing research on relevant topics

- Emailing the individuals identified as potential mentors to share a CV (or résumé) and request an in-person meeting to discuss possible research collaboration opportunities

The new investigator should be prepared for the contacted individuals not to respond or to reply with a message indicating that they are not currently accepting new mentees, interns, or research assistants. Even if a meeting is scheduled, not all conversations will yield a mentor–mentee relationship. An invitation to meet is not an agreement to serve as a mentor. However, all conversations have the possibility of pointing the new investigator to useful resources, including contact information for other individuals who might be well suited to serve as mentors.

5.3 The Mentor–Mentee Relationship

Some formal research mentorship programs require both mentors and mentees to sign an agreement letter that spells out the commitments of both parties, but most mentorships are less formal. A new investigator should not agree to enter into a mentor–mentee relationship until after gaining an informed understanding of several key matters:

- The potential mentor's time availability
- The mentor's preferred frequency and style of communication (such as how often emails will be exchanged and how often telephone calls or in-person meetings will be scheduled)
- The roles and responsibilities the mentor agrees to take on
- The resources the mentor agrees to provide, if the mentee expects the mentor to supply full or partial funding for a project, access to laboratory or computing facilities and equipment, or other types of material support
- The expectations the mentor has of the mentee

Once a research relationship is established, there are many things a mentee can do to ensure that the partnership is a productive and pleasant one. Research supervisors appreciate when mentees:

- Communicate often
- Ask questions
- Complete assigned tasks satisfactorily and on time
- Are honest about what they have done and what they plan to do
- Maintain meticulous research records
- Express gratitude for the contributions of the supervisor

5.4 Professional Development

No one senior researcher, or even a team of research coaches, can provide all of the professional mentorship that a rising researcher requires. Individuals hoping

to establish a long-term research trajectory benefit from engaging in a diversity of networking and professional development activities, including:

- Participating in journal clubs that read and discuss recently published research articles
- Becoming active in professional organizations that host research symposia, publish academic journals, and/or provide other opportunities for participating in research-related activities
- Attending and presenting at local, regional, national, and/or international research conferences, and using this time for networking with established researchers
- Enrolling in training programs, which may range from half-day workshops to years-long fellowships