Young Investigator Perspectives. A delicate balance: career development activities and laboratory research

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Peter Mittwede is a sixth-year MD/PhD student pursuing a career as a surgeon-scientist. His current research focuses on organ injury after orthopedic trauma in obese rats. He hopes to pursue a career combining translational research, clinical practice, and teaching. Thanks to Peter for a thoughtful perspective on strategies to successfully combine bench research and career development activities.

—P. Kay Lund

HOW CAN YOUNG INVESTIGATORS balance life in the laboratory with critical career development activities that will inevitably benefit our careers?

As young investigators, many of us have been encouraged to focus on our research and avoid being overly distracted by “extraresearch” activities. Even when these activities are for the purpose of career development, we can feel reluctance to take part in them due to pressure to perform experiments, acquire data, and publish manuscripts. This reluctance can be intensified by the current funding climate (4). These limitations pose a challenge, particularly for those of us with diverse interests and the desire to expand our skill sets.

Because mentor funding supports many young investigators, an appreciable amount of productivity must be achieved. However, there is a critical balance that must be maintained between benchwork and career development activities. With collegial support from others in the lab and the assistance of lab technicians, this balance is achievable. Technical skills are exceedingly important, but growth from trainees into young faculty members through involvement in more advanced institutional and scientific community activities should not be postponed until the completion of our training.

There is current national conversation about whether the number of trainees entering the system is too high due to a major expansion in the number of PhD students and postdoctoral trainees (1, 2, 7). However, it is generally agreed that trainees should be receiving more diverse training experiences and should be encouraged to explore a variety of career paths. This sentiment was clear in the recommendations set forth by the NIH taskforce on biomedical workforce training (9), which encouraged programs not only to expose their students to diverse career options but also to teach the required skill sets for those considering nonacademic positions. Recent NIH-funded initiatives such as the BEST (Broadening Experience in Scientific Training) awards (10), which seek to promote career development in graduate training, are a step in the right direction.

Some of my most rewarding experiences have come from taking part in national and local leadership and service activities, such as being a member of the Education Committee of the American Physiological Society, performing K-12 physiology outreach in local schools, mentoring undergraduate students in science, and serving as a class officer in my graduate program. I jump at the chance to review manuscripts or attend grant-writing seminars, and I enjoy attending and networking at scientific meetings. The rewards of networking and professional service have been reported by others (6). Although these activities take time away from the laboratory and benchwork, they help maintain motivation and optimism about research. My time outside the laboratory allows me to more effectively frame and contemplate both the successes and inevitable frustrations of research. Most importantly, extraresearch activities provide me with invaluable experience and networking to assist in future career choices.

As young investigators, we must all ask ourselves the following question: is our training adequately preparing us for a career in our area of interest? Although our advisors, mentors, and teachers can certainly guide us, the responsibility to learn and develop expertise ultimately rests on our own shoulders. We must think critically at an early stage about our destination and muster the initiative to involve ourselves in activities that will move our careers in that direction. It is never too early to begin building collaborative networks with basic, translational, and clinical researchers. Opportunities abound for us to develop our skills in leading, teaching, and mentoring, if only on the small scale. We all have unique plans for the future, so each of our career development activities will be different. The American Physiological Society has numerous helpful career development resources (3), and the physiologist-authored Individual Development Plan (5) is a highly recommended planning resource. Success in research requires an increasingly diverse number of competencies (8), and we cannot afford to limit ourselves by being too narrowly focused.

An important caveat is that it is possible to become overly involved with extracurricular activities and thus spread oneself too thin. We have all heard stories about gifted young investigators whose careers fizzled out as a result of becoming overcommitted; this is a potential danger for all scientists at any stage of their careers. If trainees want to be involved with activities outside of the laboratory and still remain productive, this will require an intense work ethic and excellent time management skills, but these are necessary ingredients for a successful career in research anyway. Most importantly, we must be honest with ourselves about what tasks we are realistically able to handle.

Not all mentors are enthusiastic about their trainees taking on additional time commitments, which makes the mentor selection process critically important. Have open discussions with your mentors. Strike an acceptable balance between experimental work and other career development activities. Never attempt to hide anything from them. I am extremely fortunate to have a mentor who understands my career goals and gives me the freedom needed to develop the skills essential...
to my future. This is the type of mentor I aspire to become in the future.

Training must be compartmentalized to a degree to excel in certain areas. While we study for exams, write a manuscript or dissertation, or perform a time-intensive set of experiments, our undivided attention may be required. But these times of extreme busyness are invariably followed by periods of relative respite, at which time we should keep in mind the bigger picture of the progression of our careers. If we work hard, manage our time well, and get our laboratory work done, we can take advantage of other opportunities to learn, be involved, and serve.

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AUTHOR CONTRIBUTIONS

P.N.M. conception and design of research; P.N.M. performed experiments; P.N.M. analyzed data; P.N.M. interpreted results of experiments; P.N.M. prepared figures; P.N.M. drafted manuscript; P.N.M. edited and revised manuscript; P.N.M. approved final version of manuscript.

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