Mentoring: An art and a responsibility

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The field of allergy, both clinical and basic, has never been more attractive. It is both a duty and a pleasure to guide mentees in this exciting time.

At the basic level, we now appreciate that the underlying type 2 inflammatory response in tissue is programmed to be innate and not a “default,” as once labeled. Instead, we see specific epithelial ligands and receptors for a substantial innate response to non-self antigens, which sets the stage for a subsequent adaptive type 2 response. These insights now endow the field with targeted biologics and orally active chemical entities. The expansion and diversity of targeted interventions and the progress in understanding immune tolerance to allergens have profoundly changed the focus and meaning of preclinical research in allergy-directed medicine.

Allergic disease research is finally on the forefront of choices for PhD immunologists and physician-scientists attracted by a pathobiology leading to treatable diseases of the upper and lower airways, intestine, skin, and other epithelial sites. With such a strong clinical and preclinical case, it is legitimate to ask what we might do more effectively to entice and retain talented mentees beyond a 3-year postdoctoral exposure to allergy and immunology.

Of course, a key to effective training is a collegial setting in which there are multiple supportive mentors at various stages of career development, with more than 1 senior faculty member involved in the guidance of each trainee. The mentors need to show that their interactions with one another are productive both for addressing an important scientific question and in helping each mentee to progress with his or her identity. Regular group meetings should not consider rank but rather operate at a level playing field in which all ideas receive serious assessment and possible downstream action. It is always desirable to have more than 1 senior investigator involved and to include as a primary focus the career development of the mentee. In addition to scientific goals, there should be active consideration of the longer-term goal of a trainee being distinct from her or his immediate mentor. This additional senior supervision should help avoid creating a carbon copy of the mentee’s mentor.

The work of the mentee should begin with an important general scientific question. From there, the mentor and mentee should work together to outline a doable project from which the mentee learns as many useful and central techniques as possible. For a physician who has been committed to classroom excellence since kindergarten, answering all questions as taught and having the daily appreciation of grateful patients, suddenly transitioning to a setting with less knowledge than others (and even making errors) can be challenging.

After being settled and familiar with the usual techniques, attention should shift toward refining the scientific question, if possible directed by the intellectual curiosity of the mentee. Group meetings with more than 1 senior faculty member should continue with the same regular schedule during which each mentee offers a progress report. This process is easy when progress is made. On the other hand, inevitable periods of stalled progress merit the most attention to distinguish a poor idea from a good idea for which there is no reasonable technical approach. Guidance when progress is negligible requires special attention so that the mentee does not fall into the trap of repetition in the belief that the result is due to self-incompetence rather than a lousy idea or inadequate technology.

The epiphany for an academic path and downstream retention in academe usually begins with a discovery by the mentee. Discovery in that sense means illumination of a concept not previously recognized rather than simply an application of new technology to a known fact absent a meaningful extension of functional biology. The making of a discovery involves accepting risk and enjoying the possibility, even if remote, of finding something new by going in a different direction. For the physician mentee with a long history of being in his or her knowledge comfort zone, it can be daunting to address a question for which there is no assured path or answer. At the same time, helping someone to explore, gain confidence, and actually discover even a small matter can change that trainee’s career goals and life trajectory. The high of learning something not previously known is special, and the effect of that experience is very individualistic. It need not mean leaving a practice but rather can cause visualization of deeper and more difficult goals with greater energy and passion driven by regularly experiencing the related clinical discipline.

In considering whether a mentee could or should accept the ups and downs of serious research, either basic or translational, a mentor can be a sounding board for life’s other responsibilities and the different circumstances and inclinations of each mentee. Although research requires special dedication, foregoing life outside the laboratory can be counterproductive. Family responsibilities provide stability and lots of joy, especially when one’s research is disappointing or tedious with a continuing need to develop new techniques to proceed. Prior or ongoing experiences, such as long hours of practice for music or for a sport, such as distance running or swimming, can help a mentee to weather the disappointments abundant in a path to success in academe. For physician-scientists whose clinical practice provides tangible value for their patients each day, the dry spells of research are
particularly difficult. Mentoring to ensure some early measure of success and then increasing the challenges can be a key to retention. However, the mentor should also value the many different ways in which a physician with a research background might choose to benefit all of us by moving to industry for drug development, hospital administration, or a clinical post with dedicated teaching.

The keys to mentoring in my view include the following: (1) opening the mentor role to obtain other inputs and avoid a linear path designed to replicate the mentor; (2) beginning benchwork with a reasonably doable scientific question to build confidence while the mentee faces unfamiliar technology and adjusts to failure; (3) encouraging the mentee over time to take the risk of exploring self-directed ideas or unexpected experimental results as true findings because this is the easiest path to discovery and identity; (4) deferring extensive reading until after there is a discovery so that exploration is not handicapped by misguided dogma; and (5) guiding each mentee with sensitivity to that person’s strengths and expressions of happiness, with the latter being a strong predictor of career success.