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Late Career Opportunities and Challenges for Cell Biologists

Conversation with any group of cell biologists 55–65 years old will elicit a range of opinions about their ideas for the years ahead. Some are committed to ever more research and/or teaching, essentially a continuation of mid-career activities. Others are looking forward with enthusiasm to the prospect of doing something different, perhaps doing nothing at all, while many fall in between.¹

There is no general solution to optimizing late career options, because the pertinent issues are so complex and personal that each individual must think things through for him/herself. There are, however, a number of processes that seem generally important for the personal decisions that must be made.

Some people think of retirement as an event that will occur at a specific date, a Rubicon to be crossed that all too much resembles the River Styx. One can, however, approach one's late career with more personal control, organizing a gradual change. Many employers will permit and even encourage a phased retirement in which duties diminish over some years, either through part time work or a negotiated agreement.² If one is enjoying most of professional life but finding that the pace has become too demanding, a gradual retirement probably makes sense. This course may also be advantageous for one's department, allowing several older scientists to wind down and release their positions, while the department initiates hirings that will bring in new blood.

Some older scientists are still full of energy but bored with the problems they have studied for a significant time. Unfortunately, most funding agencies are conservative about new endeavors, so a change of field is not easy at any career stage (new grants are harder to get than renewals for everyone). Late career does, however, offer opportunities for change that are less obvious. Seniority can allow you to reduce the stresses of running a lab, providing a welcome splash of freedom. If, for example, you enjoy lab work but not the struggle for resources, you can probably find a congenial younger colleague who would welcome you into the lab as an associate to work on scientific

problems of common interest. This would give chances both to train students in techniques and thought processes that you know well and to pursue your own research. Similarly, many institutions have budgets for lab instruction that can help to pay the expenses of independent study students (undergraduates, summer visitors, even medical students); these young people could come to your own lab and help with research questions of your choosing. The point is that there are ways to continue research, albeit at a slower pace, without the pressure of competing for major research grants. Such changes can readily be initiated, given the independence that accompanies outgrowing the need for further professional advancement.

Some older scientists find that a new perspective on teaching can provide a change of pace and an exciting challenge, as well as significant personal reward. Recent research on interactive learning suggests ways to engage students, even in large lecture courses, helping them learn more effectively.³ Modern information technology can provide instructors with immediate feedback on the success or failure of their exposition, allowing lecture modification on the fly and a significant increase in the efficacy of information transfer.⁴

Computers can serve as teaching machines or as surrogates for hands-on laboratory work. While such ideas are not necessarily new, one can find rewarding and effective ways to use a professional lifetime of teaching and learning experience to enrich the pedagogic process. As a senior scientist, one has the opportunity to revisit teaching with creativity rather than regarding it a chore.

Helping younger people understand the craft of science can also be highly rewarding. Time spent mentoring younger colleagues one-on-one, or in a workshop setting, can make a significant contribution. One can also teach as far afield as pre-college, even elementary school. Big cities have benefited tremendously from the work of senior scientists who have worked with teachers to effect curriculum change or subject innovation.⁵ Such efforts can be a big commitment, but even occasional volunteer work as a tutor in a school can

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make a significant difference to a few students and provide a valuable alternative to continuing your customary work.

The issue of volunteering brings up two complicated subjects. One is finances, since working without compensation is a luxury that not everyone can afford. Universities, the Teacher's Insurance and Annuity Association⁶, and many investment companies offer information and guidance about financial planning for retirement. Attending seminars or workshops by several such organizations is sensible, since it provides multiple viewpoints and demystifies this planning process. Such interactions may reduce one's sense of dependency and can provide assurance that resources in retirement will be sufficient. One's retirement package can stretch even further if one undertakes something adventurous, like working as a volunteer teacher in a poor country. Living costs in the Third World are so low that a retired American can live very graciously on modest resources. It is rare that a school or university in such a country can pay a salary, but a volunteer is almost certain to be welcomed with gratitude and enthusiasm. Such opportunities can be organized independently, through Internet and email, but Fulbright⁷, the Peace Corps⁸ and several non-government organizations⁹ can also help.

The second issue related to volunteering is freedom. It is easy to view the winding down of professional activities as a loss of privilege and power. Certainly some valuable things will go, but constructive additions can compensate. A reduced professional load can provide freedom that is simply not available under the pressure of competitive paper- and grant-writing. This suggests that an important part of late career thinking should be identifying the things that you would like to initiate.

Some people think of new activities in terms of hobbies while others think of new academic projects. The point is that one of the greatest opportunities offered by late career flexibility is the chance to explore activities, fields, and ideas for which there has previously been no time. Retired people often talk about their opportunities for travel, reading, attending lectures, music, and sociability. For someone who has led an intensely

focused life in science, such "opportunity" may sound foreign, even terrifying. This is why a gradual transition may be important for capitalizing on the opportunities of late career development. As one ages, life will change, of this there is no question. With luck, the changes will not be crippling ill health but instead the chance to explore and enjoy things one cares about and finds worthwhile. Emerging from a total focus on a specific field of science can include elements of metamorphosis and ecdysis that will allow the spreading of new-found wings.

Underlying the issue of late career transition is the fact that although our country's investment in science is large, it is not infinite. A grant to a senior scientist is money not given to someone younger; a position occupied by an old-timer is one not filled by a beginner. Some senior scientists claim that they have always been under-paid, and if they are now earning more for less work, it's about time and they deserve it. Frankly, I disagree. Most of us have done science because we wanted to. Earning a good, middle-class wage for following one's own interests is an appropriate reward. At some point it makes sense to bow out and give someone else a chance.

The above generalities hardly constitute a plan, but they do contain a message: if you build upon your career in science to identify and/or generate opportunities for exploration, it is possible to make and use freedoms that will enrich the latter part of your career, potentially making it one of the best stages of your life. ■

—J. Richard McIntosh

¹ For an audiotape of a 2001 American Society for Cell Biology Annual Meeting panel on Late Career Options, see <http://ascb.org/audio/audio01mtg.html>.

² For an analysis of the policies found in many American universities, see <http://www.aaup.org/Issues/retirement/retrpt.htm>.

³ Handelsman et al., *Science*, 304: 521-2 (2004).

⁴ See, for example, <http://umperg.physics.umass.edu/library/UMPERG-2001-12>.

⁵ See, for example, <http://www.nas.edu/rise/>.

⁶ <http://www.tiaa-cref.org/>.

⁷ <http://www.iie.org/>

⁸ <http://www.peacecorps.gov/>

⁹ <http://www.crossculturalsolutions.org/> or <http://www.learn.org/>.

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