PROSPECTS

Back to first principles

We need more physician innovators not just more physician scientists, writes Justin Chakma.

Pre-med and medical-school curricula have not kept apace with advances in scientific knowledge, according to a report by the Howard Hughes Medical Institute and a committee of the Association of American Medical Colleges. Physicians need more basic-science training, the authors argue.

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But this is only half the story. Medical schools should not simply produce clinicians who understand the science of disease mechanisms. The more urgent need is for physicians who can translate research findings to a clinical setting — and most physician-scientist (MD/PhD) programmes do not focus adequately on this area.

MD/PhD courses typically generate physician-scientists who either become pure clinicians or focus on basic sciences like any PhD-trained biomedical scientist. But physician-scientists should be trained to translate innovations in the lab to the hospital.

Several medical schools are revamping traditional clinical-investigator programmes in an interdisciplinary, team-based approach to training. For example, Stanford School of Medicine, California, offers a graduate-level course, and the University of Michigan at Ann Arbor runs a one-year fellowship in medical innovation targeted at medical residents and MD/PhD students.

In our programme at the University of Toronto, Canada, participants choose a clinical speciality outside their area of interest. Team members learn a speciality from practising physician mentors and spend eight weeks in a hospital observing medical procedures. Participants then focus on just a few projects based on criteria such as the importance of the market, team preference and disease prevalence. Teams often reach animal trials and even human studies if further development is commercially viable. Students work with biomedical engineers, entrepreneurs, and others to make advances in surgery, imaging and regenerative medicine.

Physicians with strong basic science can play a facilitating role in reconciling the science behind prototypes and assays with the disease mechanisms underlying the clinical needs. They need not be the ones discovering — that can be left to the scientists.

These programmes offer a systematic, science-based approach to innovation. Simple collaboration means a more efficient deployment of scientifically literate physicians. What we need are not more physician-scientists, but more physician-innovators and physician-facilitators. ■

Justin Chakma is founder of BioDesign Toronto at the University of Toronto, Canada.

POSTDOC JOURNAL

Footloose and freelance?

I have decided to opt out of academia, at least for the foreseeable future. This will come as no surprise to those who know me, nor to anyone who has been following my Postdoc Journal. Although I feel that a great weight has been lifted from my shoulders, this decision raises another concern — my husband's postdoc salary alone won't support the family.

I am now entertaining the idea of becoming a freelance writer; the autonomy and ability to work from home hold great appeal. After dabbling with writing last year, I had some modest success and published articles on science and the environment in a number of magazines — although I wonder if this was beginner's luck. Finding assignments has become harder of late. Initially, I rather naively, and perhaps somewhat arrogantly, assumed that editors would be clamouring for articles from scientists with a PhD. Now I realize I am one of a legion of academics-turned-writers — a rookie in a world of shrinking magazine markets.

Still, like most academics, I am well-acquainted with rejection and my thick skin will surely serve me well as a freelancer. While I strive to rid myself of the terrible writing habits common to scientists, I have managed to find some writing and editing work from contacts in Australia and I hope to find assignments in the United States. I remain quietly optimistic about my freelancing future. ■

Joanne Isaac was a postdoc in climate-change effects on biodiversity at James Cook University, Townsville, Australia. She is now in the United States so that her husband can complete a postdoc.

IN BRIEF

Postdocs join union

Some 350 postdocs at Rutgers University in New Jersey have elected to join the union that already represents more than 5,000 faculty members and graduate employees at the university. The New Jersey Public Employment Relations Commission certified the vote late last month and the group will be represented by the Rutgers council of the American Association of University Professors–American Federation of Teachers. Chemistry department postdoc Alan Wan says postdocs' terms of employment, including compensation and benefits, had never been spelled out and were determined by principal investigators.

Help for service economy

Science, technology, engineering and maths can provide significant benefits to the United Kingdom's service sector but their role is hidden and unacknowledged, laments a report by the Royal Society. Such benefits could include much more accurate financial-risk reports for the financial services sector, according to *Hidden Wealth: The Contribution of Science to Service Sector Innovation*. The report makes some specific recommendations. One is for banking, technology and research groups to create systemic risk modelling and risk-assessment analyses using the latest research (see page 680). Another is for a formal cooperative exchange between research academics and the service sector.

Spotlight on UK energy

The UK Engineering and Physical Sciences Research Council is recruiting an international panel of scientists from academia, industry and other sectors to assess the country's energy-research programme. This will be the first ever review of energy research being carried out with funding from the UK government's research councils. Among the areas to be assessed are renewable and conventional energy sources, sustainable energy, and energy-demand reduction. The panel will conduct its review next April, and will present its results to the UK research community and the seven research councils. The assessment is part of the councils' oversight of the disciplines in which they fund research.