

## EDITORIAL

# The demise of the clinician-scientist matters to everyone

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I have spent 50 of my 66 years in medical schools and in medicine. This world has always been fascinating but never more so than now as the awesome power of genetics tells us ever more about human function — and dysfunction. This issue of *Clinical and Investigative Medicine* celebrates the award of the Henry Friesen Prize to Dr. Charles Scriver, and his address on this occasion appears on page 179.

While recounting the joys and successes he has had as a clinician-scientist, Scriver documents the selection pressures that threaten this species. Darwin may cheer the success of evolutionary theory, but a threat of extinction needs to be taken seriously.

Let us get our terms straight: strictly, any physician practising medicine and using scientific principles is a clinician-scientist. But this is not what Scriver means; he is referring to those practising physicians who also pursue research of a basic scientific nature requiring a laboratory. Maybe clinician-biologist would be a better choice to distinguish this breed from clinical trialists, colleagues who usually do not test biological hypotheses but rather questions of immediate clinical significance, and whose scientific tools are largely statistical.

Although in recent decades the ranks of clinician-biologists have been reduced, this period has also seen the growth of clinical trialists and the move to evidence-based medicine. No question, this was necessary, and it is valuable; medicine can never be the same without this particular rigour. But should we not have both?

As our understanding of human biology has grown

it has become more complex, and there is a widening gulf between the biologists working in medicine — geneticists, biochemists, physiologists and other biologists — and the clinicians who staff our academic centres, representing every shade of specialized practice from family medicine to the most esoteric sub-specialty. Similarly, the gulf between what there is to know and what a practising physician can know, has become huge. There can no longer be a renaissance doctor. Our response to the growing power of medical science to intervene in disease has been to fracture the science of medicine to serve the needs of patient care.

During Scriver's most active working years, biochemistry became the great intellectual construct in medicine. Should anyone doubt this, consult the great volumes he edits as *The Metabolic and Molecular Bases of Inherited Disease*.<sup>1</sup> To quote Scriver in his lecture, "genomes speak biochemistry," and now the action has shifted to genes. During these same decades, our medical schools have changed in the opposite direction. Requirements for a preparation in science have been reduced or removed and the MD can be obtained after as little as 3 years with competence to "do" clinical medicine being perhaps the only benchmark. This is an essential benchmark, but is it enough?

There comes a point when the patient asks, "Why?" or, "I searched the Internet and they said it's my calcium channels that cause my headaches — can you explain this?" With heart failure after the third infarct it's easy: "The engine has just run out of

steam” may do. A much better background in human biology will be needed to answer satisfactorily the question about calcium channels.

It is the job of medical schools to prepare their graduates to meet this sort of challenge. They need faculty who are good role models, answering questions about mechanisms of disease, bringing biology to life in a clinical context and making simple what is otherwise impossibly complex. This is where clinician-biologists come in. These are a cadre of people who have chosen to bridge the gap between biologists and physicians. As Scriver emphasizes, this is challenging and not for the work-shy, but it is also fascinating, and for those with natural curiosity and the energy and intellect to cope, it promises a lifetime of reward. But the teaching that this group can deliver is the teaching that will bridge the gulf between biology and medicine, that will help provide the background that makes possible answers to patients’ questions and, because of the unique perspective of the clinician-biologist, that will help students (undergraduate and postgraduate) distinguish what is worth knowing from what is not.

Unfortunately, teaching is often seen as a chore, getting in the way of the real business of research with both being squeezed by patient care so enough money can be made to sustain the academic department. This is where the academic world has left the rails: research is not the reason for universities. The clinician-biologist, struggling with unsolved problems in human biology, can provide a stimulating intellectual climate in universities where bright young minds can learn. If the research does not

contribute to this, let it go to an institute.

But this brings me back to the beginning of Charles Scriver’s presentation: the Medical Research Council of Canada has given way to the Canadian Institutes of Health Research (CIHR), the brainchild of Henry Friesen whose contributions are honoured in the prize awarded to Dr Scriver. The CIHR needs to insist that its researchers contribute to the “stimulating intellectual climate” of our schools and reward them for it. Of course, there will be academic “bean counters” who try to count hours and percentages of time, but it is the quality not the quantity that matters. Bridging the gap between modern biology and medical practice is hard, creative work, it is an important reason for doing research in a university setting, and it must be rewarded. The clinician-biologist is the person to do this work. If we lose this group of physicians and their unique contribution to education, we will see medical graduates increasingly ignorant of the very changes driving medical practice, and the patient’s “Why?” will go unanswered. This is why the possible demise of the clinician-biologist is a matter of concern to everyone.

## Reference

1. Scriver CR, Beaudet AL, Sly WS, Valle D, editors. *The metabolic and molecular bases of inherited disease*. 8th ed. New York: McGraw Hill; 2001.

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