Cell Biology in Britain: Going Strong in Troubled Times

The difficulty with describing cell biology in Britain today is working out what cell biologists do. Here it is no longer fashionable to be just a microscope-wielding cell biologist; today it is *de rigueur* to have an alternative title, whether it be disease-related cancer cell biologist, technology-driven tissue-engineering cell biologist, or reflecting-a-specialism stem cell biologist. As a consequence, not only are the barriers between cell biology, genetics, engineering, behavioral sciences, computational biology, chemistry, and the clinical sciences constantly blurred, but also within Britain there is an increasing appreciation of the importance of cell biology in underpinning all these other disciplines.

Short History

Until relatively recently, most of British cell biology took place in the biology/biochemistry departments in the university sector or within government- or charity-funded research institutions. Funding was generally awarded to individual PIs on a lab-by-lab basis in the form of short (three-year) project grants or longer (five-year) program grants. And new lab heads were either appointed as university lecturers or institute tenure-track team leaders.

These days the picture is more complex. The expansion in high-tech, high-cost cell biology, and the drive from scientists and funding agencies to undertake health- and wealth-creating science, has resulted in many cell biologists in Britain now being part of multidisciplinary cooperatives. These cooperatives can apply for shared core funding (e.g., the UK Centre for Tissue Engineering in Liverpool and Manchester), apply as smaller focused research institutions/centers (e.g., Cambridge Stem Cell Institute), or apply in strong collaborative groupings with colleagues in other university departments or the industrial sector. In parallel, funding for cross-disciplinary projects has increased.

The Strengths and Challenges

The advantage of these changes has been to keep British cell biology at the forefront internationally. Moreover, the importance of these activities has been recognized by the four major cell biology funders in Britain (Medical Research Council, Biotechnology and Biological Sciences Research Council, the Wellcome Trust, and Cancer Research UK). All support a diverse range of cell biology activities in their units, centers, and institutions, and via their response-mode grant-funding schemes.

However, these changes have brought challenges. Many researchers struggle to juggle the complexities of managing a lab that is part of different groupings, each with its own aims and objectives; in many cases, the lab head also carries an increasingly onerous teaching responsibility. The current financial climate adds to the strain. Like many countries, Britain also struggles with the problems of a career structure for up-and-coming cell biologists. On one hand, cell biologists want to be part of collaborative enterprises; on the other, we still expect to be able to demonstrate individual achievements.

Despite this, Britain remains an attractive destination for cell biologists. The fellowship scheme offered by all major funders provides younger researchers with the opportunity to establish an independent career with minimal teaching and administrative responsibilities. The international mix in most laboratories provides a vibrant and ever-changing environment in which to work. And despite the change to more centralized cell biology groupings, the quirkier and "bigger doesn't always have to be better" aspects of British academia still appeal to many an individually minded scientist. Through response-mode funding he or she can still obtain grant support.

Getting Together

Britain is awash with biological societies, large and small, and consequently most cell biologists will belong to several societies serving their specialist and general needs. Unlike the ASCB, the British Society of Cell Biology (BSCB; www.bscb.org) does not own a journal and therefore survives financially on subscriptions and a generous grant from the Company of Biologists. A main activity is to organize and sponsor two meetings per year.

The major spring meeting covers a broad field of cell biology and is frequently run with

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one or more other societies, in particular the British Society for Developmental Biology. The autumn meeting is smaller and more specialized. As well as offering an excellent scientific program and an opportunity to meet with British and overseas colleagues, these meetings are kept to low cost to encourage as many of the society members to attend as possible.

In addition, the society provides travel grants for Ph.D.s and postdocs and supports a summer research studentship scheme for undergraduates. Most importantly, the BSCB showcases the best of British cell biology, both at its meetings and by awarding annually the Hooke Medal to a younger independent lab head. The three most recent recipients clearly demonstrate that Britain has cell biology talent:

- Ben Nichols (Cambridge) employs biochemical and diverse microscopy approaches to investigate plasma membrane dynamics and non-clathrin mediated uptake pathways
- Tomoyuki Tanaka (Dundee) exploits the genetics of budding yeast in combination with cutting-edge microscopy to understand chromosome duplication and segregation
- Erik Sahai (London) uses real-time microscopy in 3D in vitro and in vivo models to study cancer cell migration and invasion.

A challenge that we have yet to overcome in Britain is to coordinate the diverse biological societies such that between us we can provide a coherent voice when challenging issues of science funding and providing expert opinion to government and the public sector. However, the newer generation of active bloggers and networkers are already making inroads in these areas.

The Future

Despite the financial downturn, which has affected all funding streams, there is a strong spirit of optimism in Britain's cell biology community. As we move away from the more old-fashioned isolationist approach to running labs and obtaining funding, many are embracing and enjoying working with the broader scientific community. Moreover, many embrace seeing their work being translated into benefit for the community. Although many would still describe a cell biologist as someone who looks down microscopes, the British cell biologists know that their scientific horizons are increasingly widening. ■

—Clare M. Isacke, president, British Society of Cell Biology (BSCB) and Breakthrough Breast Cancer Research Centre, Institute of Cancer Research, London; and Elizabeth Smythe, secretary, BSCB, and Department of Biomedical Science, University of Sheffield, England

CLS Congressional Biomedical Research Caucuses Held

William Wulf, the AT&T Professor of Computer Science at the University of Virginia's School of Engineering and Applied Science, addressed attendees at the Congressional Biomedical Research Caucus on June 10, 2009. He spoke on "The Decline of Innovation." Wulf discussed what changes are needed to enable the U.S. to better compete in the world arena.

Chad Boult of the Johns Hopkins School of Public Health presented "Improving the Quality and Efficiency of Health Care for Older Americans" to attendees at the Congressional Biomedical Research Caucus on June 17, 2009. Boult and his team have created a new model of comprehensive health care called "guided care." The concept is based on the simple notion that one trained professional should guide all aspects of care, uniting the patient, the family, and the medical team.