

University of British Columbia

As a leading light in the Canadian medical research landscape, UBC is demonstrably working to achieve its vision of utilising knowledge to improve health. *International Innovation* speaks to Dean of the Faculty of Medicine at UBC and Vice Provost Health, **Dr Gavin C E Stuart**

As Dean and Vice Provost Health for the Faculty of Medicine, could you begin by introducing the Faculty's commitments and how they align with the University's in general?

The Faculty of Medicine has identified five commitments – four of them align with those identified in UBC's strategic plan 'Place and Promise', ensuring that student learning, research excellence, sustainability, and community engagement are pre-eminent and guiding in our programmes. Our distinctive vision, 'through knowledge, creating health', is supported by a fifth commitment to healthcare innovation and excellence, and to be recognised as the pre-eminent Canadian-based faculty of medicine for using knowledge to contribute to health.

Because of the breadth of our mandate and provincial scope, the Faculty is also dependent on strong partnerships. I have therefore committed to aligning our planning with other health-related faculties within the university, and with government, health authorities, partner universities and partner funding agencies. I want to provide key constituents, both within and external to the Faculty, with an improved sense of the Faculty's overall identity and direction, and foster an environment which advances common goals and collaborations. As Vice Provost Health, I also want to ensure that we collectively focus our energies, efforts and valuable resources on those critical decisions and courses of action that have the greatest chance of enhancing success in a dynamic environment.

The Faculty has a distinctive vision, one of creating health through knowledge. How has that vision informed your research priorities?

The Faculty is firmly committed through its diverse research programmes in the lab, clinic and community to knowledge creation and its translation to benefit health. To realise this vision, it has recognised the need for depth and interdisciplinary collaboration, and for focused development on programmes of excellence. We have supported and grown programmes of international renown in cancer, neuroscience and heart and lung health, each of which has the mandate to translate its cutting-edge knowledge into clinical settings and public policy. We have organised our research approach through the development of centres and institutes, each of which serves as an interdisciplinary home to investigators, who can accelerate and translate their research more quickly by their collaborations and proximity. Furthermore, we have made an important commitment to global health to reach underserved populations within British Columbia and beyond. Through the development of a new School of Population and Public Health within the Faculty, UBC is creating partnership programmes with host countries and within extended communities.

As the primary provider of health and life science professionals for British Columbia, you are well placed to define the province's unique healthcare needs. To what extent is the Faculty's work in this area

tailored to British Columbia? Can its work be considered as Canada-wide or global in its relevance?

Through our distributed education system, in which undergraduate and postgraduate learners are distributed throughout British Columbia, we are committed to educating health professionals for a wide and diverse range of roles, all of which reflect the needs of B.C. and Canada. As the province's only medical school, UBC's Faculty of Medicine needs to educate a full spectrum of health professionals, from those who will look after patients in our communities to the next generation of physician-scientists engaged in discovery research. While we do not specifically educate health professionals for global practice, many of our students and faculty are engaged in global health efforts, and supporting global health is one of the major tenets of our strategic plan. In addition, our model of distributed education has attracted international attention from medical schools across Canada and in other countries such as Australia, which are developing models similar to ours. So yes, although our educational outcomes are focused on the needs of B.C. and Canada, our reach is very much global.

Given our location on the Pacific Rim and the cultural background of B.C.'s population, our major international focus is China. Here we span the three pillars of our Strategic Plan. Educationally, we provide short-term clinical elective exchanges with the three top universities in China, actively recruit graduate and postdoctoral students, and provide training in problem-based learning. In research, we have a number of active collaborations at both the departmental level and the individual researcher level. The opportunities for our researchers to engage large numbers of patients in China in a short time period is extremely beneficial to us, and the knowledge exchange is beneficial to the Chinese partners. Finally, in fulfilling our obligation to serve, we are assisting with health policy reform in China, with a focus on primary care and providing training to hospital and health authority administrators.

How would you summarise your current research efforts and priorities at UBC in terms of mental health?

We are supporting an unprecedented effort at UBC to understand the problems of mental health through our robust fundamental, translational and clinical neuroscience programmes. Within our focus on brain health, we have developed over 85 labs, received five large-scale Canadian Foundation for Innovation Awards for infrastructure development and have created cutting-edge imaging facilities that are fundamental to unlocking the complexities of mental illnesses. In October 2013, UBC and Vancouver Coastal Health (one of our health authority partners) will open the Djavad Mowafaghian Centre for Brain Health, a 150,000 ft² state-of-the-art facility dedicated to translational research and care of individuals at risk or affected by mental illnesses and other brain disease. This facility will bring together world-class



clinical care across a range of mental and other brain illnesses and will advance our understanding of synaptic function, pharmacology, *in vivo* cellular and brain imaging, genetics and epigenetics, all within the broad social understanding of these illnesses. The programme has assembled an outstanding group of 31 Canada Research Chairs and eight endowed chairs as academic leaders of the neurosciences, focusing on the fundamental and clinical aspects of such problems as mood disorders, schizophrenia, sleep medicine and addictions. The initiative in mental health will also have an important focus in late-life illnesses, including Alzheimer's disease and other neurodegenerative diseases.

Genetics is an area of research that receives huge amounts of media attention and funding, especially with regard to cancer. Could you describe the research your Faculty is conducting in that area?

Genetics and genomics underpin many of UBC's greatest research successes in the past 10 years and are a cornerstone of our personalised medicine initiative. We have continued to build on a strong record of success in neurogenetics through the recruitment of a Canada Excellence Research Chair, recent establishment of the Centre for Applied Neurogenetics and the embedding of genetics research laboratories in the Faculty of Pharmaceutical Sciences Building and the Djavad Mowafaghian Centre for Brain Health. Although UBC has a thriving programme in proteomics and is developing strength in pharmacogenomics, our genomics programme, led from Canada's Michael Smith Genome Sciences Centre, is an undisputed global leader. In addition to playing a pivotal role in basic and agricultural genomics projects, this centre of excellence was an early adopter of next-generation sequencing technologies and has provided the technical prowess to determine the mutational basis for cancer and other disorders. The intersection of multidisciplinary disease-site focused research teams within this centre has led to many of the Faculty's greatest research triumphs. These successes in discovery genomics have enabled our research teams to build research programmes in genomic-targeted drug discovery and personalised medicine.

Today, with the many global challenges we face, it is of increasing importance to convert research into application, and quickly. What burden is this placing on researchers?

We recognise the pressures that government, health authorities, and the public face within a health environment that is fiscally limited and under pressure to provide ever-increasing amounts of care with greater benefits. This brings clear pressure to respond and to be able to quickly translate research into practice and public policy. The Faculty must be strategic in developing its research to respond to this important societal need while also being faithful to our commitment to generate fundamental research that will ensure that the chain of discovery does not stop and enables next-generation, transformational insights. I believe that today, more than ever, scientific success results from collaborations that are interdisciplinary and integrative. This applies to our approach to our fundamental research, where we have created environments such as the Brain Research Centre, the Center for Blood Research and the Life Sciences Institute, where researchers work in proximity, share training and teaching opportunities, and where meaningful collaborations are stimulated. They provide excellent examples of how success is enhanced through the assembling of teams of fundamental researchers who, together, can advance their research faster.

What are the new frontiers of healthcare research?

One of our priorities is developing and leading the new frontiers of health research. We see personalised medicine as one such new frontier, where a Faculty-wide effort will accelerate progress incrementally, as the '-omics' revolution – including genomics, proteomics and theragnostics – moves from the lab to the clinic and community. This initiative will also engage many faculties within the university, as the essential elements of ethics, law, policy and population health all come into play within the initiative. This (r)evolution will support an unprecedented opportunity to identify the profiles of individuals at risk and affected by diseases, and to better tailor their care through more selective development and use of therapies. From new disease models to biomarker development and tailored therapeutics, the impact of this new frontier holds the potential to be truly transformational.

At the same time, however, we are well aware of new opportunities in populations that are less advantaged in health resources and sophisticated scientific resources. One such opportunity is the application of e-health. The ability to access virtually instantaneous electronic information holds the potential to transform care, and we are supporting important transformational opportunities in e-health as it moves into clinical settings and communities.

The Faculty has garnered numerous awards. Which among these have been the most gratifying to you as Dean?

Two themes stand out for me among the awards we have received. One is the binary nature of the recognition, encompassing excellence in educating the next generation of health professionals and our internationally acclaimed research in the health and life sciences. Our record in both education and research has been achieved by only a limited number of faculties of medicine. The second aspect that makes me particularly proud is the number of awards that reflect teamwork leading to innovation, whether for our use of technology, our research, our educational model or our service to various communities. Recognition of that teamwork validates my belief that individual brilliance can be multiplied many times over through collaboration.

Our ultimate metric of success – whether it is training health professionals, cultivating young scientists, pursuing innovation in the lab or applying new insights in clinical settings – is the health of the population that we serve.

www.med.ubc.ca



**FACULTY OF
MEDICINE**