New Canada Research Chairs for UAlberta

National research chairs will lead promising research in education, health care, cell biology and Earth sciences.

By Michael Brown on November 14, 2013

Canada Research Chairs (from left) Mark Gierl, David Marchant, Ben Montpetit, Shannon Scott and Long Li

(Edmonton) Skilled workers who can think, reason, communicate and collaborate effectively are in demand as the emphasis on information technologies and knowledge services continues to grow.

Such dramatic global changes are shaping how educational tests are created and delivered.

Increasingly, computers allow educators to administer tests more frequently so that students can receive feedback continuously while they develop essential 21st-century skills. But since tests are being given more frequently, a constant supply of unique, content-specific items is needed.

Mark Gierl

Mark Gierl, professor in the Department of Educational Psychology, was advanced to Tier 1 Canada Research Chair in Educational Measurement to help create an innovative approach to produce the large number of test items educators will require for the transition to computerized educational testing, also known as automatic item generation.

“As the U of A begins the transition from paper to computer-based testing and traditional to blended delivery, the opportunities for assessment-related research and applications will only increase,” said Gierl, whose new Tier 1 CRC status is reserved for researchers acknowledged by their peers as world leaders in their fields. “It is an excellent time to work at the U of A because there are excellent opportunities for research in technology-enhanced assessment.

Gierl, whose advancement to Tier 1 jumps his award to $1.4 million paid out over seven years, is joined by a crop four new Tier 2 CRCs—a title that comes with a $500,000 award paid out over five years and is given to emerging researchers who are acknowledged by their peers as having the potential to lead in their field.

The new Tier 2 CRCs include David Marchant, who was named CRC in Viral Pathogenesis; Ben Montpetit, CRC in RNA Transport; Shannon Scott, CRC in Knowledge Translation in Children's Health; and Long Li, CRC in Stable Isotope Geochemistry.

"Four new chairs and one advancement is excellent news and clear recognition of the national calibre of our researchers and the research they conduct at the University of Alberta," said Lorne Babiuk, U of A vice-president of research. "Programs like the Canada Research Chairs not only help advance scientific discovery and societal development, but they also help us attract and keep some of the world's best researchers in Canada."

David Marchant: Seeking new drugs to treat lung viruses

David Marchant, a virologist in the Li Ka Shing Institute of Virology and Department of Medical Microbiology and Immunology, is looking to use his CRC to better understand viral infections of the lungs.

"There is no effective antiviral strategy to treat infections by any of these viruses, and so by understanding these viruses we are discovering common traits to develop broad-spectrum antiviral drugs to treat infection by any virus," he said.

Marchant, who has been at the U of A for a little more than a year, says ensuring that his lab's most promising therapeutic strategies are developed into real therapeutics for Canadians takes a certain synergy.

"The collaborative research environment at University of Alberta truly nurtures the development of new investigators such as myself," he said. "I was attracted by the fact that this is one of the most progressive universities in Canada that has set out to be research-intensive and has done so in an exceptional manner."

Ben Montpetit: Understanding the fundamentals of cell biology

The research being conducted in Ben Montpetit's laboratory focuses on describing the mechanism of messenger RNA transport within the eukaryotic cells. These information-carrying molecules are assembled in the nucleus by copying DNA and are then delivered to the cytoplasm where the information is used to direct the production of proteins. This is relevant to human health since disruption of the transport process is the basis of multiple human diseases and a goal of many viruses during infection of a host cell.

He says the mechanism by which transport is accomplished is far from simple and requires further study—a fundamental basic research necessity that is being undertaken in fewer institutions.

"Given that my research program is focused on a fundamental cell biology question, I was in search of a community where such research was seen as important and was being successfully pursued," he said. "This led me back to Canada and here to the Department of Cell Biology at the U of A, where I feel that this is the cornerstone of the research being conducted. I believe the commitment to fundamental research is exemplified by the university's support of both my recent CRC and CFI applications. "

Shannon Scott: Translating knowledge to benefit kids' health

Shannon Scott, a professor in the Faculty of Nursing, studies the process that guides research evidence from the lab to pediatric clinical practice, also known as knowledge translation. She says the failures of this important process are affecting the health outcomes of Canadian children and are resulting in

unnecessary health-care costs. “This research has the potential to yield large dividends for lifelong health and quality of life of Canadian children.”

And while Scott is passionate about her research, she says she does get a certain energy from the intellectual milieu at the U of A. “The large numbers of highly talented graduate students engaged in research, the breadth of talent in the professoriate, a culture that values innovation and discovery, and strong organizational support are some of the reasons I enjoy doing research at the University of Alberta.”

Long Li: Measuring Earth’s chemistry

Long Li, professor in the Department of Earth and Atmospheric Sciences, will use his CRC to continue to develop tools to measure extremely low levels of carbon and nitrogen in minerals to address scientific questions in very broad areas, such as looking at the evolution of Earth systems and exploring energy and resources.

Because of the range of questions his lab attempts to address, Li says his research requires strong support from the university, as well as a rich diversity of interests across the geosciences.

“My broad research interests in applying stable isotopic tools to solve important geological and ecological problems can be greatly reinforced by collaboration with the researchers next door,” he said.

The U of A now has 88 CRCs—51 Tier 1 chairs worth $10.2 million annually and 37 Tier 2s worth $3.7 million.

In 2000, the Government of Canada created the Canada Research Chairs program to establish 2,000 research professorships in eligible degree-granting institutions across the country. The program invests $300 million per year to attract and retain some of the world's most accomplished and promising minds.

- See more at: http://news.ualberta.ca/newsarticles/2013/november/new-canada-research-chairs-for-ualberta#sthash.ZOyrzAUX.dpuf