Fittingly, the first course in Biochemistry given at this University was given in the University Power House in 1916 and delivered by the famous biochemist James Bertram Collip, who went on to become the founding Chair of the Department of Biochemistry in 1922. Over the past ninety years the Department has flourished with the continual support of the Faculty of Medicine & Dentistry (one of the world’s top medical schools, #47, Times Higher Education Supplement world rankings 2010-2011) and the University of Alberta. Over this time, with a firm grasp of its past achievements and future ambitions the Department has epitomized the concept of “daring to discover” and continues to deliver in its mission of world class research, teaching and learning excellence in Alberta.

The department has 37 faculty members, of whom 30 have their primary appointments in Biochemistry. Their research interests cover a broad spectrum of topics, including nucleic acid-protein interactions, regulation of gene expression, structure and function of proteins, proteomics, chemistry and biology of RNA, molecular mechanisms of cancer, cell receptors, signal transduction and molecular cell regulation, cardiac muscle biochemistry and structural biology, molecular enzymology, metabolic regulation, the biological structure, function and assembly of biological membranes.

The department is home to several outstanding research groups, including the CIHR group in Molecular and Cell Biology of Lipids, the Membrane Protein and Disease research group, the Signal Transduction research group, Institute for Biomolecular Design and the National High Field Nuclear Magnetic Resonance Spectroscopy Centre (NANUC).

Recognizing that great academic institutions are built first and foremost on the excellence of their people, the department cherishes innovative thinking, pioneering research of real gravitas and above all a collegial and supportive approach to its academic endeavour that is second to none. Our faculty continues to publish their findings prolifically in first rate scientific journals and are highly sought after for international speaking engagements. The department recognizes that a key strength of the University of Alberta is to marry excellent teaching and learning with world class research expertise. We strive to be in the vanguard of the best and brightest approaches to scholarship and learning and we are privileged to number eight faculty who are fellows of the Royal Society of Canada and a further two who are Fellows of the Royal Society (London).

The department is especially proud of its marvelous group of non-academic staff who expertly provide the backbone to our activities. We consider all members of the department as valuable members of our team and whilst the early years of this century have provided significant fiscal challenges, the
department has firmly hoisted the sails to catch the winds of change that are blowing through all aspects of university life.

**Education**

The department places all facets of student learning at the forefront of its mission. The department teaches Biochemistry to all students requiring this discipline as part of their degree program at the University of Alberta. This translates to teaching over 2,500 undergraduates and graduate students each year. We have developed many innovative teaching techniques, including introduction of i-Clicker learning methodology in all classrooms, small group teaching and learning, in depth seminar and lecture presentation instruction and practice, as well as outstanding teaching laboratory based courses in the “real life practice” of biochemistry. The department has a core of national award winning faculty who provide exemplary service, teaching expertise and administrative support to all our faculty.

In 2012, the department will be developing a new “study abroad” research program for many of our undergraduate students. We have developed collaborative relationships with several top universities throughout the world (including the UK, Germany and Australia) and will encourage our students to participate in exchange visits with those universities.

The department offers graduate training programs at the Masters and Doctoral levels. Many of our graduate students hold scholarships from a number of prestigious foundations and training programs including AIHS, CIHR, HSFC, NSERC. Our graduate student program is the largest in the Faculty and we have a vibrant academy of 75 students that bring vitality and youthful endeavour to our activities. Many of these are international students that hail from all corners of the globe. Our students are also highly encouraged to participate in national and international conferences and exchanges as part of their learning experience.

**Research**

Research funding, primarily from agencies such as CIHR, the Heart and Stroke Foundation of Canada (HSFC), the National Cancer Institute (NCI) and NSERC provide funding in the form of operating research grants, equipment grants, Summer studentships, graduate studentships, post doctoral fellowships, scholarships and establishment grants for new investigators. Members of the department receive support from the Alberta Prion Research Institute, Alberta Innovates Health Solutions, Burroughs Welcome Fund, Canada Foundation for Innovation (CFI), Canadian Cancer Society, Canadian Diabetes Association, Howard Hughes Medical Institute and NIH, USA. For the period 2010-11, the department received, from peer reviewed national and international funding programs, in excess of $12 million.

Interdisciplinary approaches to science are fast becoming a key aspect of our research endeavour. The department is a key member of the new School of Translational Medicine in the Faculty of Medicine & Dentistry. Working alongside its sister departments in this School (Medicine and Laboratory Medicine and Pathology), Biochemistry drives molecular approaches to solving key research problems in translating biomedical advances from the bench to the worldwide medical community and eventually to the public at large.

The department has developed state of the art proteomics/genomics facilities through the Institute for Biomolecular Design (IBD) in the adjacent Katz Group for Pharmacy and Health Research. Additionally, the department provides a fully stocked and comprehensive “Biochemistry Stores” chemical and
reagent facility that provides many operating reagents at a moments notice to clients throughout the University Biomedical community. A key objective of the next few years will be to advance and improve our core facilities, thus allowing our faculty to continue to “punch above our weight” and further develop strong research synergy.

The department is actively seeking to further develop its research capacity in the areas of molecular and cellular proteomics in human disease, as well as in the structural biology of mis-folded proteins in disease. These areas are described below:

CAMPUS ALBERTA INNOVATES CHAIR PROGRAM (CAIP)
CAIP CHAIR IN STRUCTURAL BIOLOGY OF PROTEIN MIS-FOLDING DISEASES

Theme: Neurosciences/Prions
Hosts: Faculty of Medicine & Dentistry, ALES and Science
Department: Biochemistry

- The University of Alberta has established the Centre for Prions and Protein Folding Diseases (CPPFD, Director, Dr. D. Westaway), as a tri-partite initiative involving the Faculty of Medicine & Dentistry, the Faculty of Agriculture, Life and Environmental Sciences and Faculty of Science. This successful CFI/Alberta Advanced Education and Technology funded initiative encompasses five intramural laboratories and seeks to extend study of prion-like disease to the atomic level, to decode structure/function relationships and thereby define rational approaches for intervention and diagnosis. To this end we will build upon acknowledged excellence in structural biology at the University of Alberta.

- Primary affiliation of new Campus Alberta Innovates Program (CAIP) Chair will be in the Faculty of Medicine & Dentistry (one of the world’s top 50 medical schools, Times Higher Education Supplement 2010-11), through the Department of Biochemistry. The successful candidate (PhD and/or MD) will have outstanding credentials at the international level and will be encouraged and supported to develop a strong research program on biochemical and biophysical aspects of protein mis-folding diseases, with an emphasis upon biologically active (i.e., neuropathogenic) material.

- The candidate will have available, fully equipped world-class infrastructure in the CPPFD which provides access to animal models of neurodegenerative disease and contains an unparalleled suite of analytical instrumentation located in an enhanced level two biocontainment facility (Transmission EM, NMR, chromatography, spectroscopy). In addition, NMR facilities of 500, 600 and 800 MHz with cryoprobes are available in the National High Field Nuclear Magnetic Resonance Spectroscopy Centre (NANUC).

- Exciting opportunities in the areas of biophysics, biochemistry, biorefining, cell biology and computational science and chemistry will be afforded through key collaborators in the Faculty of Medicine & Dentistry, Center for Neuroscience, the School of Translational Medicine, the
Department of Chemistry in the Faculty of Science and Faculty of Agriculture, Life and Environmental Sciences (ALES). Further collaborative opportunities exist with scientists in the NRC National Institute for Nanotechnology (NINT).

- Successful candidate will have a guaranteed base budget for 7 years (salary and operating). Guaranteed Full Professor position after 7 years as CAIP Chair. Multiple opportunities for additional funding from Canadian Institutes for Health Research (CIHR), PrioNET Canada, Natural Sciences and Engineering Research Council (NSERC), Alberta Prion Research Institute (APRI), Alberta Innovates Health Solutions (AIHS), Canada Foundation for Innovation (CFI).

- The successful candidate will greatly benefit from a world class and collegial environment in Edmonton at the U of A. “Scientist” magazine recently ranked University of Alberta as 8th best science institution in the world outside the USA.

Faculty Positions: Proteomics/Metabolomics and Structural Biology of Human Disease

Faculty of Medicine & Dentistry - Department of Biochemistry

The Department of Biochemistry in the Faculty of Medicine & Dentistry invites applications for tenure-track or tenured positions in Functional Proteomics, Metabolomics and the Structural Biology of Proteins involved in human diseases.

The successful candidates will be expected to conduct research, teach undergraduate and graduate students, supervise graduate students and post-doctoral fellows and seek external funding. Priority will be given to researchers using proteomics, metabolomics and/or structural biological approaches to address fundamental biological questions. Major areas of strength of the Department and Faculty are in cardiovascular research, diabetes, cancer, cellular and molecular biology, cell signaling, structural biology of proteins and enzymes, lipid biochemistry and membrane biology (see also http://www.biochem.ualberta.ca). New laboratory space will be available within the Katz Research Innovation Facility of the University of Alberta. Significant infrastructure for mass spectrometry, NMR (www.nanuc.ca) and X-ray crystallography is already available, and funds from the Canada Foundation for Innovation, the Faculty of Medicine & Dentistry and Province of Alberta have been secured to expand and update existing instrumentation.

Applicants must have a PhD and/or MD, with a track record in the application of proteomics, metabolomics and/or structural biology to molecular discoveries associated with human disease.

Candidates are invited to submit a curriculum vitae, a detailed statement of research program, a sample of published work and the names of three references (who will only be approached with permission). Consideration of applications will commence after April 25, 2011; however, the competition will remain open until the positions are filled.
How to Apply

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