

**FACULTY OF MEDICINE
UNIVERSITY OF CALGARY**

**RESEARCH STRATEGIC FRAMEWORK
2009-2010:
BUILDING FOR THE NEXT DECADE**



FACULTY OF | UNIVERSITY OF
MEDICINE | CALGARY

CONTENTS

1. SUMMARY

2. RESEARCH IN THE FACULTY OF MEDICINE: IMAGINATION IMPROVING HEALTH

2.1 Hotchkiss Brain Institute (HBI)

2.2 Alberta Children's Hospital Foundation Research Institute of Child & Maternal Health (ACHRI)

2.3 Libin Cardiovascular Institute of Alberta (LCVIA)

2.4 McCaig Bone & Joint Health Institute (MBJHI)

2.5 The Calvin, Phoebe and Joan Snyder Institute for Infection, Immunity and Inflammation (Snyder III)

2.6 Southern Alberta Cancer Research Institute (SACRI)

2.7 The Calgary Institute for Population & Public Health (CIPPH)

3. RESEARCH NETWORKS

4. RESEARCH INFRASTRUCTURE

5. FACULTY OF MEDICINE STRATEGIC RESEARCH PRIORITIES 2009-2010

6. OUR PEOPLE

APPENDIX: FIVE KEY PERFORMANCE INDICATORS FOR INSTITUTES

1. SUMMARY

This strategic framework will guide our research planning and resource allocation for the coming year.

The Faculty has designated four areas as the leading research priorities of the Faculty of Medicine. These are, in order of priority:

- brain and mental health
- infection and immunity
- heart health
- child health

Three additional research areas, each at a different stage in development, are identified as emerging research strengths:

- bone and joint health
- cancer
- population, health policy and health services research

In addition, the University's priority program in biomedical engineering is recognized as an emerging crosscutting strategic initiative for the Faculty.

The primary vehicles to achieve success in these areas are the seven interconnected and overlapping Faculty of Medicine **Institutes** and the researchers that populate them. These are signature programs through which – with strategic investments in people, technology, and facilities – the Faculty of Medicine will stake its national reputation for innovation and excellence. Each is an active partnership between the Faculty of Medicine and Alberta Health Services. Each welcomes members from outside of the Faculty of Medicine. Each is focused on a specific health discipline, whereby the creation of knowledge is at the foundation, feeding up towards its translation.

Specifically, during 2009-2010 we will:

- Complete the research facilities in the *Health Research Innovation Centre* and occupy the space.
- Launch the renovation of Snyder III space in the Health Sciences Centre.
- Inaugurate the *Calgary Institute for Population and Public Health* and install it in newly-built facilities in the Teaching, Research & Wellness building.

- Launch a new *Mental Health Research Centre* and install it in newly-built facilities in the Teaching, Research & Wellness building.
- Reorganize research infrastructure support: this will include a re-vamped *Centre for Advanced Technologies*, the opening of the *Calgary Centre for Clinical Research*, new internal mechanisms to provide seed funding for emerging teams, and a restructuring of the *Research Office*.
- Target recruitment of outstanding new academic faculty in alignment with the strategic plan.
- Set the performance bar high for recruitment, merit, promotion and tenure. This will include new metrics for the new research that emphasize the impact – from academic to social – that the research is having.
- Improve the processes through which mentorship is provided to researchers at all stages of their careers.
- Provide long-term, secure career paths to productive soft-funded faculty members.
- Develop improved pathways to retirement for senior faculty members.
- Improve the career path for clinician-scientists.
- Target endowed chairs and Canada Research Chairs to build critical mass in strategic priority areas.
- Develop a set of cross-Institute *Research Networks* to reduce barriers between Institutes and increase collaboration.

2. RESEARCH IN THE FACULTY OF MEDICINE: IMAGINATION IMPROVING HEALTH

Biomedical research has always been a core pillar of the University of Calgary Academic Plan. For example, in “*Raising Our Sights*”:

“The university as a whole must be committed to the principles of scholarship and creativity in all of its forms. The foundation of scholarship, on which all our activities rest, distinguishes us from other post-secondary institutions. We assess our research, and our other creative and innovative activities, against international standards. We encourage and support various forms of fundamental research as well as research whose applications are more readily obvious.”

“Advancing Health and Wellness. This strategic academic priority addresses one of the most prominent societal issues in Canada. This priority requires strong fundamental work in the sciences and biomedical research, but extends to investigations that move from the laboratory, to clinical practice, to the population and society as a whole. A variety of perspectives in the University bear on this priority, which includes investigations ranging from biomedical engineering, disease processes, molecular and genetic studies, the basic life sciences and mental health, to health economics, the social determinants of health, and the ethics of health care, to health policy, promotion and delivery.”

The Faculty of Medicine wholeheartedly embraces these priorities. Everything we do in research will be consistent with both the University ideals and the Faculty of Medicine vision and mission.

Our success will require close alignment of goals and successful partnerships with our key partners in the University, in the city of Calgary, across the Province, and nationally.

The next three years will have many uncertainties – the economic and research landscape is changing at an unprecedented rate - and this will present unique challenges:

- The Federal Government has gone into deficit and this does not bode well for national science funding.
- The planned strategic transformation of research funding in Alberta through the Ministry of Advanced Education & Technology could prove a very promising thing for a strategic organization.
- Weak and volatile financial markets and the prospect of a worldwide economic recession suggest philanthropic support will become harder to raise and funding from existing endowments will decline.

- The reorganization of key health partners such as the *Calgary Health Region* and the *Alberta Cancer Board* into *Alberta Health Services* has led to short-term uncertainty (but likely represents a long term opportunity).
- The University of Calgary is financially challenged *ergo* the Faculty is financially challenged.
- The Faculty is full: most new research space is already committed (substantial new space will be a long time coming, although now is the time to plan).

We have to live within our means, and for the next few years this may not be easy, but this does not mean there are no opportunities. This will require a quality-driven agenda rather than a growth-driven agenda: “raising the bar”. These challenges apply to all research in Canada and we must pursue our relative advantage, for even in difficult times we are better off than most:

- A great city and provincial community.
- A relatively wealthy province.
- There will be targeted new funding – we need to be prepared to capitalize on it.
- Ongoing recruitment will refresh and transform us. Just to replace ageing faculty - by 2015, >25% of our current Faculty will be over 65 - we need to recruit ~13/yr for the next decade. This is a big opportunity for strategic change but also presents a substantial financial challenge.
- Our new research space is coming on line: this includes the completion of the most ambitious investment in basic and translational science facilities since the foundation of the Faculty – the *Health Research Innovation Centre* and the *Teaching, Research & Wellness* building - which together have resulted in close to a doubling of the research space on the Foothills site.

The Strategic Plan will determine how we will invest in people, technology, and facilities in the years ahead. Because funds are precious, careful choices have been made to reflect the full range of needs and the economic imperatives that face academic medicine. The failure to manage the research enterprise effectively will result in non-strategic deployment of resources and ultimately will lead to mediocrity in many research programs.

At the start of 2009 we are on the crest of a strong wave. Over the past seven years our number of faculty members, our peer-reviewed research funding and our research space have all roughly doubled. At present we have:

- **1790 faculty members** (509 full-time; 60% external funded; only 11% of which are fully funded by University; 37 Canada Research Chairs; >50 endowed chairs and professorships ...).

- **Total annual external research funding** ~\$130M.
- **>\$300M in philanthropic support** for research via the *Reach!* Campaign.

The centerpiece of the Faculty of Medicine research plan is seven Institutes.

These are signature programs through which – with strategic investments in people, technology, and facilities – the Faculty of Medicine will stake its national reputation for innovation and excellence. Thus, new strategic research directions in the Faculty are championed by Institutes and key strategic resources - research space, fund raising for research, recruitment opportunities for research, access to major research funding opportunities - are focused through them. We believe that the commitment to Faculty-based academic Institutes will serve to differentiate us from other sites for biomedical research and will encourage exceptional scientists to build their careers here. We expect each Institute to have a wide impact, ranging from influential academic research, through to changing patterns of clinical and population medicine, to technology transfer and commercialization.

Each is an active partnership between the Faculty of Medicine and Alberta Health Services. Each welcomes members from outside of the Faculty of Medicine. Each is focused on a specific health discipline, whereby the creation of knowledge is at the foundation, feeding up towards its translation. The balance of “discovery” and “translation” is critical: translating knowledge into practice must not come at the expense of knowledge creation but neither should knowledge creation happen in a social vacuum.

These seven portfolios embody the strategic research priorities of the Faculty of Medicine.

The Institutes not only address important health issues but also represent areas in which the Faculty of Medicine has built considerable expertise and critical mass. The quality of our Institute-based research will be assessed annually within a formal framework of key performance indicators (**Appendix 1**) and be subject to regular external peer review.

A successful Institute will:

- i. Develop and successfully execute a strategic plan with interdisciplinary research themes that encompass multiple pillars of health research and are geared to the improvement of human health.
- ii. Build capacity: recruit high quality faculty members, in collaboration with Department Heads and in the context of the strategic plan.
- iii. Create a research environment that enables individuals to succeed, in which discovery is translated into improved health, and which is responsive to community concerns.
- iv. Raise funds in support of its mission and focus these strategically in pursuit of the strategic priorities.
- v. Educate the next generation through innovative training initiatives and an enriched interdisciplinary learning environment for staff, students and fellows.

In five years we expect each Institute to be of national prominence.

2.1 Hotchkiss Brain Institute (HBI)

The Hotchkiss Brain Institute (HBI) is a neurological and mental health education and research organization that is a partnership between the community, the Faculty of Medicine and Alberta Health Services. The Institute brings together neuroscientists working across all research disciplines and settings – from the laboratory to the clinic and in the community. HBI activities are centered on fostering “bench to bedside” translational research, training, and education. The primary goal is to improve the neurological and mental health of the people of Alberta and beyond. The HBI has developed a strategy focusing on three foundational research priority themes that are directly linked to translational research priority programs:

- Priority Theme One: *Axon Biology and Regeneration*
 - Translational Research Program: Multiple Sclerosis
 - Translational Research Program: Spinal Cord and Nerve
- Priority Theme Two: *Cerebral Blood Flow Regulation*
 - Translational Research Program: Stroke and Vascular Dementia
- Priority Theme Three: *Synaptic Transmission and Neural Systems*
 - Translational Research Program: Depression and Psychosis

The primary goals for 2009/2010 are:

- Launch of a new five-year Institute Strategic Plan
- Development of a new core facility for Axon Biology and Regeneration research
- Recruitment of new chair holders in the priority areas of Cerebral Blood Flow Regulation and Synaptic Transmission and Neural Systems

2.2 Alberta Children’s Hospital Foundation Research Institute of Child & Maternal Health (ACHRI)

ACHRI is dedicated to the study of development – from embryo into adulthood and includes maternal and fetal health. The ACHRI goal is to bring together basic scientists, academic clinicians, clinician researchers and clinician scientists scattered among

different departments within the University of Calgary and Alberta Health Services. The ACHRI research and education efforts are organized into six priority themes:

- Molecular and Genetic Basis of Development and Child Health
- Reproductive, Maternal, Fetal and Newborn Health
- Behavior and the Developing Brain
- Pediatric Oncology
- Innovations in Child Health Research
- Healthy Living and Injury Prevention

The primary goal for 2009/2010 is the *Centre of Excellence in Childhood Cancer (COECC)*, a broadly-based 5-year program designed to enhance our basic science and clinical capabilities related to childhood cancer diagnosis and treatment. It is an integrated continuum of research, clinical trials and family-centered care dedicated to a cancer-free future. This initiative will encompass a broad assessment of the Faculty's current and potential future genomics capacity. It also involves strengthening the existing relationship with Alberta Health Services.

2.3 Libin Cardiovascular Institute of Alberta (LCVIA)

The vision of the Libin Cardiovascular Institute of Alberta is to create a superb, efficient, and integrated program of cardiovascular wellness, cardiovascular clinical care, cardiovascular research, and cardiovascular education. This program will include integrated clinical programs from prevention to palliation that value the creation of new cardiovascular knowledge and the training of the very best cardiovascular clinicians/scientists/educators using trans-sectoral, supra-regional, and multidisciplinary approaches recognizing the need for alternative sources of funding support.

The LCVIA research and education efforts are organized into seven priority themes:

- Optimizing treatment and our understanding of treatment outcomes of southern Albertans with acute coronary syndromes through processes and procedures which minimized delay to treatment (the STEMI and Heart Alert Projects) with surveillance using the acute coronary syndrome inception cohort database (APPROACH).
- Augmenting the strong basic science research in vascular biology through strengthening relationships with vascular medicine and vascular surgery.
- Augmenting the strong basic, clinical, and translational science and education programs related to heart rhythm research.
- Building upon initial success in the development of an integrated research, education, and clinical care program in advanced cardiac imaging.
- Furthering the science and education activities of both medical and innovative surgical approaches to the treatment of patients with heart failure.
- Strengthening the early development of a comprehensive cardiovascular health promotion and disease prevention program.
- Establishing a cardiovascular genetic susceptibility program.

The primary goals for 2009/2010 are:

- *Cardiovascular Genetics Susceptibility*: to evaluate the genetic differences between people who do and people who do not: i) develop cardiovascular disease risk factors; ii) develop cardiovascular disease; and iii) respond to specific cardiovascular therapies. The ability to make these evaluations is the cornerstone on which the development of individually-personalized cardiovascular medicine will be built.
- *Surgical Approaches to Heart Failure*: In parallel with the development of a clinical Ventricular Assist Device Program (VAD) in Calgary, the LCVIA will pursue a broader Surgical Approaches to Heart Failure Program that will include developments in the clinical use, the science, and the education of other surgical approaches to heart failure including expansion of the VAD program into destination therapy and the development of unique surgical procedures for patients with heart failure utilizing stem cell science for myocyte replacement therapy to treat advanced heart failure.

2.4 McCaig Bone & Joint Health Institute (MBJHI)

Bone and joint care is a concern of individuals of all ages. In Canada, millions of people are faced with bone and joint problems every year, making it increasingly important to understand the basis for loss of bone and joint health and the development of debilitating chronic diseases and conditions. The McCaig Bone & Joint Health Institute (MBJHI) is dedicated to this cause, and is fast becoming a world leader in the fight for bone and joint health – improving quality of care and treatment for patients in Alberta and around the world.

The MBJHI has three main themes of research, with all three contributing to the innovative Integrated Knowledge Translation Network at various levels and to various extents. The three priority research themes are:

- *Bone & Joint Tissue Replacement, Repair and Regeneration*
 - Translation Theme: Joint Transplantation and Tissue Engineering
 - Translation Theme: Infection
 - Translation Theme: Dynamic Joint Function
- *Advanced Diagnostics and Detection of Early Bone & Joint Disease*
 - Translation Theme: Imaging Systems
 - Translation Theme: Proteomics for Personalized Medicine
 - Translation Theme: Markers for Early Disease Detection
- *Translational Models of Bone & Joint Disease*

- Translation Theme: Osteoarthritis
- Translation Theme: Joint Injury and Repair
- Translation Theme: Inflammatory arthritis

The primary goals for 2009/2010 are:

- advanced diagnosis and prevention of musculoskeletal diseases
- mechanisms of disease initiation and progression, and disease treatment.

2.5 The Calvin, Phoebe and Joan Snyder Institute for Infection, Immunity and Inflammation (Snyder III)

With the vision of “*Scientific Innovation Today for a Healthy Tomorrow*”, The Calvin, Phoebe and Joan Snyder Institute for Infection, Immunity, and Inflammation was established in 2003. Since its inception, the overall science focus has been on the cellular processes and clinical consequences of infection, immunity and inflammation, and the translation of this knowledge for the benefit of society.

The major strengths within the III are the two focused Institute priority themes:

- Inflammatory disease or inflammation
- Host-microbe (infection) interactions.

Within each theme are multidisciplinary research groups with diverse expertise and breadth of experience, anchored and led by internationally recognized scientists that help to provide excellent research opportunities.

The primary goals for 2009/2010 are:

- to launch the renovation of Snyder III space within the Health Science Centre to consolidate the two major priority themes in contiguous space.
- to complete Institute infrastructure cores to optimally support priority research in the Snyder III.

2.6 Southern Alberta Cancer Research Institute (SACRI)

The Southern Alberta Cancer Research Institute (SACRI) is a partnership between the University of Calgary and Alberta Health Services. Researchers use the latest advances in medicine and science to determine the most effective treatments, to understand cancer causation, to explain trends in cancer incidence and mortality in populations and to improve the scientific knowledge of all aspects of the cancer continuum. The Institute’s primary role as expressed in the vision - *‘Freedom from Cancer through Excellence in*

Research and Training' - is to integrate cancer research across all disciplines – fundamental, translation, patient-based clinical and population health - throughout Southern Alberta.

It is anticipated that an Alberta-wide Alberta Cancer Research Institute (ACRI), a partnership between the Universities of Calgary and Alberta with Alberta Health Services, will be formally established in 2009/2010. SACRI's strategic direction and its programs are governed by Alberta's 2025 goals for cancer: 35% fewer people developing cancers; 50% fewer people dying from cancers; support for every Albertan living with cancer that eliminates or reduces their suffering.

The Institute will pursue four established priority themes in the coming five years:

- Experimental and Applied Therapeutics
- ACCRU – ACRI Cancer Clinical Research Unit
- Molecular Cancer Epidemiology
- Integrated Symptom Relief Program

There are also several emerging programs in SACRI (e.g., Experimental Therapeutics in Childhood Cancers).

The primary goals for 2009/2010 are:

- Establishment of the ACRI biorepository
- Develop a platform for metabolomics in cancer detection and treatment
- Non-invasive imaging in cancer: the “Virtual Biopsy” programme

2.7 The Calgary Institute for Population & Public Health (CIPPH)

During this year we will launch the seventh Institute – **The Calgary Institute for Population & Public Health**. This proposal advances strategic directions in health and wellness for the University of Calgary. The intent is to establish a bridge that effectively and meaningfully links the innumerable islands of valuable research accomplishment in health services, population and public health research in Alberta Health Services and at the University.

The Institute is to be inclusive not exclusive, and will act as a unifying force for health and social sciences. The research agenda builds on existing expertise and assets, fulfills demonstrable and compelling needs, and exploits strategic opportunities. The proposed Population Health Observatory will serve as a critical asset to advance quality improvement and safety, surveillance and research.

Six priority themes are proposed for the CIPPH, which will be further considered and refined with establishment and progress of the Institute:

- Vulnerable Populations and Disparities
- One Health-Ecosystem Health
- Population Health Interventions
- Health Human Resources
- Methodological Research in Health Services and Systems.
- Access to and Quality of Health Care.

3. RESEARCH NETWORKS

It is crucial that Institutes do not become silos, and extensive interactions between them should be the norm. The right blend of Institutes working collaboratively will support translating knowledge arising from research into real world applications.

To enable such collaborations, the Faculty will identify key strategic networks that will be crosscutting between Institute. How we manage crosscutting themes without losing strategic focus will be an important challenge for the coming years.

In addition, while individual investigator-initiated awards will continue to be at the heart of our research funding, interdisciplinary team-based research is an increasingly important and necessary component of biomedical research. Institutes represent loci where researchers and clinicians can effectively work together across traditional boundaries. Throughout our research enterprise, we need to be prepared to take advantage of targeted strategic initiatives for programmatic/team funding, while avoiding short-term opportunism.

- To facilitate interdisciplinary research, we will develop internal mechanisms to provide seed funding for emerging teams.

4. RESEARCH INFRASTRUCTURE

Research in the Faculty of Medicine is supported by units in which infrastructure support, knowledge creation and technology development provide expertise and tools that enhance the missions of all Institutes:

- ***The Research Office:*** Located on the 5th floor of the TRW, the research office is concerned with the integration of information leading to the development of policies conjointly with Department Heads, Institute Directors, Centres and associated organizations, such as the SRC. In addition the office provides value-added services to the research community at large. These services relate to matters of regulatory compliance, space assignments and other infrastructure matters. Included are front-end staff providing access to legal counsel for various matters, including research contracts and other administrative matters. Researchers can additionally avail themselves of support aimed at ensuring that grant applications are of the highest caliber. The success of this support is evident in the number and quality of awards our Faculty receives. The Research Office works constantly to streamline processes and improve communication and collaboration with the research community and other service areas,
- ***The Office of Medical Bioethics:*** The Conjoint Health Research Ethics Board is administered through the Office of Medical Bioethics. The Office of Medical Bioethics is part of the Faculty of Medicine and cooperates with the Clinical Ethics Group to constitute the Calgary Health Ethics Services. The Office provides administrative and academic services related to research ethics review process and procedures and to human healthcare ethics. In addition, the faculty engages in teaching, supervision and consultations related to health ethics and health law. For the health research community the Office is best known for the administrative functions on behalf of the Conjoint Health Research Ethics Board.
- ***The Centre for Advanced Technologies in the Life Sciences (CAT):*** CAT is an administrative umbrella under which the Faculty has chosen to place many of the core facilities vital to research programs and crossing various domains of inquiry. These range from fundamental services (such as research animals) to high-technology offerings (such mass spectrometry). A significant challenge for the organization is finding operating funding as well as the capital investments necessary to ensure that the technology suites can truly remain advanced and relevant to the enterprise as a whole. Many core facilities currently offer services outside the University proper, including private enterprises. These activities can be useful points of contact promoting the expansion of industry-funded research and the development of strategic industry partnerships leading to increased investment in the facilities themselves as well as the Faculty as a whole. Balancing the various interests inherent in the suite of services comprising CAT will be a significant challenge for Faculty administration, particularly in the event that increased funding cannot be sourced.

- ***Clara Christie Centre for Mouse Genomics (CCCMG)***. The CCCMG represents a rebirth and expansion of animal care facilities in the Faculty that also will lead to the development of new core facilities under the CAT umbrella. It is a major investment in infrastructure which will add to and enhance the pre-existing Health Sciences Animal Resources Centre. New equipment and space (including specialized procedure and experimentation space) will provide first-class animal care services to researchers. New core facilities include the already operating Embryonic Stem and Transgenic Mouse facilities as well as the Computed Microtomography & 3D Imaging Facility. A future foray into the provision of Histopathological services is planned in conjunction with the Faculty of Veterinary Medicine.

- ***The Calgary Centre for Clinical Research (CCCR)***. Our commitment to translational clinical research is exemplified by the new *Calgary Centre for Clinical Research* (a 20,000 sq. ft. facility in the *Teaching, Research and Wellness Building*, due to open Spring 2009), which will be the hub of clinical trials in the Faculty. The plan is to eliminate the structural and organizational obstacles that have historically impeded our ability to leverage the strengths of our research and clinical programs.

- ***Ward of the 21st Century***: The exciting next step towards achieving the W21C initiative's vision of shaping the future of clinical care is the creation of a state-of-the-art research centre being constructed in the TRW Building at the Faculty of Medicine. Based on the Research and Innovation Agenda developed by a multidisciplinary leadership group of University and Alberta Health Services researchers, plans are underway to design a collaborative environment that will foster transformative research in the areas of patient safety and quality of care.

- ***Experimental Imaging Centre***: Contains Canada's first 9.4T MRI small bore system for small animal imaging and an open configuration 0.2T MRI. Formally opened in March 2002, the EIC is a joint initiative of the National Research Council and the Faculty of Medicine, University of Calgary. The world-class studies conducted by NRC-IBD (West) and University of Calgary researchers at the EIC will generate direct benefits for health care and will spur economic growth. The potential for improved diagnosis and treatment of brain diseases is clear. Further advancements to imaging technologies will see the development of components such as probes, specialized lasers, and detectors, creating business opportunities. Training of personnel highly qualified in advanced imaging technologies and applications will create employment prospects.

- In general, the maintenance of our aging (sometimes geriatric) research infrastructure is a major challenge: more, different and better research infrastructure is vital but we cannot depend on research indirect costs to fund even the current levels. Novel solutions to research infrastructure needs are required.

- In keeping with the defining statement that shared infrastructure is one of our key performance indicators, CAT and policy regarding large infrastructure investments will evolve. Such policy will not only drive the effective utilization of resources and ensure a high standard of stewardship, but will also be a tool to link Institutes through common

technological needs and requirements for pools of expertise.

- We need to do a better job in the commercialization of our research and demonstrate further the value of shared resources that transcend institutional boundaries and support partnerships with the health and industrial sectors.
- We will better define what should (or should not) be provided in terms of core facilities on a Faculty, University and provincial basis to focus funds strategically and have top-drawer support for infrastructure as the goal. We will become progressively more outcome driven and less focused on equipment as an end – long term operating costs and attracting and retaining appropriate highly qualified personnel are essential to ensure that the fullest value is extracted from one-time capital investments.
- We will seek long-term programs for the renewal of capital investments, such as those in core facilities, in order that the cutting edge is not blunted (where appropriate) and that basic instruments and support equipment do not put us at risk.
- The next few years will be highlighted by our effective use of the new facilities that we have created and which are already largely allocated. A disciplined philosophy for the allocation of research space will need to be developed and implemented: research space is earned rather than an entitlement; more space will be shared. New opportunities to expand our research enterprise are on the horizon – notably the South Health Campus - and these will need to be enthusiastically embraced.

5. FACULTY OF MEDICINE STRATEGIC RESEARCH PRIORITIES 2009-2010

The Faculty of Medicine strategic research priorities for the coming year were chosen after discussion in the Leadership Forum. The principles used to guide the choice included:

- Priorities should be built around areas of existing strength
- The potential for provincial, national and international prominence
- Demonstrated societal needs
- Opportunities for philanthropy and alignment with community partners
- Alignment with University priorities
- Alignment with provincial and federal priorities
- Opportunities to translate research into clinical and industrial applications
- A strong commitment to education
- A foundation of strong leadership

These priorities will be revisited annually.

Four areas are designated the **leading research priorities** of the Faculty of Medicine. These are, in order of priority:

- Brain and Mental Health
- Infection & Immunity
- Heart Health
- Child Health.

Brain and Mental Health is the **greatest research strength** of the Faculty of Medicine. We believe it should be the first priority of the University to provide the support necessary for Calgary to play a leadership role on the Provincial and National stage.

In addition, the University strategic priority of Biomedical Engineering is recognized as an emerging crosscutting initiative for the Faculty of Medicine.

Three additional research areas, each at a different stage in development, are identified as **emerging research strengths**:

- Cancer
- Population, Policy & Health Services Research
- Bone & Joint Health.

The growth and maturation of these themes is an important secondary priority.

Several large-scale specific initiatives have been chosen for special attention:

- complete the research facilities in the *Health Research Innovation Centre* and occupy the space.
- commence the renovation of Snyder III space in the Health Sciences Centre.
- launch the *Calgary Institute for Population and Public Health* and install it in newly-built facilities in the Teaching, Research & Wellness building.
- create a new *Mental Health Research Centre* and install it in newly-built facilities in the Teaching, Research & Wellness building.
- reorganize research infrastructure support: this will include a re-vamped *Centre for Advanced Technologies*, the opening of the *Calgary Centre for Clinical Research*, a restructuring of the *Research Office*, and a new programme to provide seed-funding to Emerging Teams.

- develop cross-Institute *Research Networks* to reduce barriers between Institutes and increase collaboration.

6. OUR PEOPLE

Over 3,000 people - faculty, students and support staff - contribute directly to the research mission of the Faculty of Medicine. Crucial to our future success will be the way we support our existing personnel and recruit new ones. We will:

- Target recruitment of outstanding new academic faculty in alignment with the strategic plan;
- Set the performance bar high for recruitment, merit, promotion and tenure. This will include new metrics for the new research that emphasize the impact – from academic to social – that the research is having;
- Improve the processes through which mentorship is provided to researchers at all stages of their careers;
- Provide long-term, secure career paths for productive soft-funded faculty members;
- Develop improved pathways to retirement for senior faculty members;
- Improve the career path for clinician-scientists;
- Target endowed chairs and Canada Research Chairs to build critical mass in strategic priority areas.

APPENDIX: FIVE KEY PERFORMANCE INDICATORS FOR INSTITUTES

The attribution of success in a complex organization such as the Faculty of Medicine will never be straightforward. Is success due to the Institute, or is the Institute irrelevant, or is it an impediment? Nevertheless, we need to start somewhere, and the proposition is that:

Institutes that are not succeeding across the five measures listed below are not succeeding.

A successful Institute will:

i. Develop and successfully execute a strategic plan with interdisciplinary research themes that encompass multiple pillars of the CIHR and are geared to the improvement of human health.

Evidence:

- i. Institute resources will be focused on strategic objectives
- ii. Institute members will identify with the strategic objectives
- iii. Partnerships will be formed and nurtured as necessary to achieve Institute objectives.
- iv. Knowledge will be disseminated within the Faculty, University and community.
- v. A creative research environment will be built that spans from biosciences to engineering, to the social sciences.
- vi. Institute success will be manifested in grant funding (from individual awards, to those with more than one PI, to group/team grants (CIHR, AHFMR, etc.), to major awards (CFI etc.).
- vii. An effective external communication and community engagement strategy (including NGOs) will be developed.

ii. Capacity building: recruit high quality faculty members, in collaboration with Department Heads and in the context of the strategic plan.

Evidence: the best recruits will be successful in peer-review and will contribute to Faculty goals:

- i. Competitive salary awards.
- ii. Dual awards.
- iii. Success in operating grant competitions.
- iv. Synergy with existing Institute members.

iii. Create a research environment that: enables individuals to succeed; in which discovery is translated into improved health; and which is responsive to community concerns.

Examples:

- i. Effective mentorship.
- ii. Internal peer review.
- iii. Team program building.
- iv. Shared infrastructure.
- v. Clearly spelled-out, high expectations.
- vi. Effective partnerships with Department Heads.
- vii. Meaningful internal communication strategy.

Evidence: a strong research environment will be characterized by the impact of the work produced. Signs of high impact include:

- i. Highly cited MSS (e.g., >50 citations? >100?)
- ii. High h-factors of investigators
- iii. # MSS published in leading journals
- iv. # Investigator-initiated clinical trials
- v. # Provisional patents issued
- vi. Spin-off companies are created
- vii. Public policy is influenced
- viii. Health care delivery models are implemented or altered
- ix. Institute members recognize the value that membership brings
- x. Consistent success at funding agencies that exceed University, Provincial and Federal averages.

iv. Raise funds in support of its mission and focus these strategically in pursuit of Institutes objectives.

Evidence:

- i. Group/team grants (CIHR, AHFMR, etc.)
- ii. Success in obtaining major equipment grants
- iii. Success in obtaining major awards (e.g., CFI)
- iv. Philanthropy in support of chairs, programs and infrastructure
- v. Joint funding programs with NGOs.

v. Educate the next generation: Provide innovative training initiatives and an enriched interdisciplinary learning environment for staff, students and fellows.

Examples:

- i. Seminar programs.
- ii. Journal clubs.
- iii. Work co-operatively in course delivery and student mentorship with broad-based (BHSc, UME) or focused undergraduate and graduate programs.
- iv. Workshops.
- v. Career mentorship.
- vi. Rigorous internal review processes.
- vii. Opportunities for clinical fellows.
- viii. “Extracurricular” (how to teach? Preparation for the biotech industry? ...).

Evidence: Graduate/postdoctoral education in the Institute will be characterized by:

- i. Selectivity – the Institute is a magnet for recruitment.
- ii. Shorter times to completion of degree.
- iii. High graduation rates.
- iv. Many external scholarship awards.
- v. High levels of satisfaction with the education received.
- vi. Future career success (e.g., a postdoctoral fellowship, a job).