

## UNBC - STRATEGIC RESEARCH PLAN, 2010-2015 SUMMARY

### CONTEXT AND PURPOSE

UNBC has gained national recognition for excellent research performance in the past half-decade, especially in key areas of strategic importance to the wellbeing of northerners. We esteem and encourage research and scholarly activity that is locally motivated and relevant, yet has global effect and recognition. This renewed strategic research plan reaffirms UNBC's founding principles through commitment to four interdisciplinary and interconnected areas of scholarly inquiry of critical importance to our location, as well as to Canada and to the Circumpolar North. In doing so, it elaborates on the values, vision and mission put forth in UNBC's University Plan (2010), including fostering research that is internationally recognized for its quality and impact, and for its orientation to communities' needs.

### MAJOR OBJECTIVES OF THE PLAN

- 1) To strengthen research at UNBC that is of outstanding quality and pioneering in its innovation, especially in strategic interdisciplinary research areas that are of marked importance to our region and similar areas;
- 2) To enhance the training of researchers, by increasing the number of graduate students and by providing a highly stimulating research environment for all of our students (undergraduate and graduate) that establishes UNBC as a leader in the integration of research and teaching;
- 3) To guarantee our researchers access to superior research resources and infrastructure, and to manage these to ensure their effective and efficient use;
- 4) To develop new research relations with communities, businesses, industries, other academic institutions and other partners, regionally, nationally and internationally; and
- 5) To enhance access to the results of our research, through improved knowledge translation, transfer and application, in order to maximize their benefits to society in Northern British Columbia and beyond.

### STRATEGIC RESEARCH AREAS

UNBC's four interdisciplinary strategic research areas are:

- Environment and Natural Resources
- Community Development
- Northern, Rural and Environmental Health
- First Nations and Indigenous Studies

**Table 1: Distribution of UNBC Research Chairs by Strategic Research Area (2010)**

*(The first, bold-face number in each cell indicates number of Chairs whose primary interest is in the specified strategic research area; the numbers in parentheses indicates number of Chairs who identify the specified research area as an additional area of their research focus. See Table 2 for more detail.)*

	<b>Environment &amp; Natural Resources</b>	<b>Community Development</b>	<b>Northern, Rural &amp; Environmental Health</b>	<b>First Nations &amp; Indigenous Studies</b>
<b>Canada Research Chairs (9 total)</b>	<b>5 NSERC</b> (+3 SSHRC, 1 CIHR)	<b>1 SSHRC</b> (+1 SSHRC, 1 CIHR)	<b>1 CIHR</b> (+3 SSHRC, 1 NSERC)	<b>2 SSHRC</b> (+ 1 CIHR, 1 NSERC, 1 SSHRC)
<b>Other Research Chairs (5 total)</b>	<b>4</b> (+1)	<b>0</b> (+2)	<b>1</b> (+ 1 Northern, Rural & Env. Health)	

A brief description of each of the strategic research areas follows.

### **Environment and Natural Resources**

The University of Northern British Columbia is surrounded by abundant natural resources, and resource extraction and exploitation have traditionally been the foundation of the region's economy. Responsible stewardship of resources and the environment requires an advanced understanding of our rich natural heritage. Moreover, the transformation of traditional extraction-based economies to innovative, global, knowledge-based economies requires advances in many areas, including:

- A highly developed understanding of the fundamental workings of natural systems: their complexity, resilience, adaptive capacity and sustainability;
- Well-balanced and integrated assessment of multiple and often competing values associated with natural resources;
- Identification and integration of sound social, economic and ecosystems principles for resource management and environmental protection;
- Design and application of new technologies for management, extraction, processing, remediation, and many other issues related to the resource base.

The relevance of research on these topics is of profound importance to Canada, and to other areas of the world with similar ecosystems and resource dependencies.

#### *Emerging Themes*

Over the next half-decade, UNBC envisages research growth in the following sub-areas (and in the disciplinary areas that support these):

- Bioenergy and Other Clean Energy
- Contaminants and Environmental Remediation
- Ecosystems Services
- Fisheries
- Wood Innovation (including engineering, design, product diversification & marketing)
- Climate Change
- Cumulative Assessment
- Environmental History
- Integrated Watershed Research

### **Community Development**

Communities across Northern British Columbia face a range of social and economic pressures. Frequently dependent on single resource based industries, and subject to the economic vulnerability this engenders in an increasingly globalized market, our communities struggle to remain viable. While expected to engage in 'bottom-up' development, they face a decline in infrastructure (physical, informational, etc.) that would support such development. This same situation confronts rural communities throughout Canada's North and other economically marginalized regions of the globe.

Key areas of research and scholarly activity include:

- A nuanced understanding of the interwoven factors that contribute to some communities remaining resilient in the face of challenges;
- Identification and formulation of place-based sustainable options for economic diversification;
- Analysis of globalization processes that affect the societies, cultures, economies and environments of northern British Columbia and like regions;
- Exploration and development of the culture and cultural economy of small cities and rural communities and their contribution to quality of life;
- Assessing and planning for appropriate services provision (e.g. social work, health care, environmental planning) in northern and rural environments;
- An assessment of how ideas and behaviours are related to the challenges and opportunities for social integration of different racial, ethnic, religious or other groups into northern communities.

#### *Emerging Themes*

- Commerce and Sustainability in Resource Communities
- Community Research Methodologies
- 'Green' Entrepreneurship
- Rural and Cross-cultural Education
- Creative Cultural Expression and Sense of Place
- Place-based Tourism
- Sustainable Aboriginal Economies

### **Northern, Rural and Environmental Health**

Canadians who live in rural and northern regions have health status and health outcomes that are markedly worse than those of their urban and southern fellow citizens. Factors that contribute to these disparities include long distances from full-range health care services and providers, life-styles, socio-economic status and environmental sustainability. Such disparities are even greater for First Nations populations. The health determinants that produce these disparities include individual, community, population and environmental factors, necessitating a broadly comprehensive approach to the study of health. Key research areas include:

- Identification of the determinants of health status in rural and northern communities;
- Understanding of health services and health human resources, and the development of enhanced models of service delivery and health professional education;
- Improvements in the accessibility and effectiveness of health promotion programs across space and across diverse populations;
- Identification and evaluation of cultural issues affecting health and health care delivery, especially in First Nations communities;
- The relationship between health of individuals and populations and the natural, and built environments in which they live.

### ***Emerging Themes***

UNBC envisages research growth in the following subareas. While these are of broad import across Canada and globally, UNBC researchers will often distinguish their research by focusing specifically on the often-neglected rural and northern dimensions of such themes:

- Air Quality and Health
- Health and Related Social Services Provision Policy and Best Practices
- Impact on Diseases of Cellular Mechanisms
- Improving Access to Health Care and Health Information
- Linking Social and Environmental Determinants of Health to Reduce Health Disparities
- Mental Health and Addictions
- Northern Food Security and Diet-related Health Issues
- Preventative Health Care and Disabilities Management

### **First Nations and Indigenous Peoples**

Northern British Columbia is homeland to a rich diversity of First Nations, including twenty major linguistic groupings, the territories of 16 Tribal Councils and 77 bands, and four Métis organizations. Aboriginal students comprise over 10% of our student body, and demographics suggest a great potential for this number to expand. The university acknowledges a special responsibility to the First Nations of its service area in terms of education and research, as well as in supporting indigenous communities in their self-governance initiatives, and creating meaningful opportunities for knowledge exchange between indigenous and non-indigenous peoples. Most First Nations in UNBC's service area are highly dependent on the natural resources of the area, including forests and fisheries. First Nations are challenged by health, education and economic inequities. Key areas of research include:

- Design and application of indigenous-informed resource management strategies;
- Understanding definitions of, and causal factors to, indigenous health and wellness, and contributing to their enhancement;
- Formulation of culturally appropriate models for education curricula and delivery ;
- Assessments and recommendations of self-governance models

### ***Emerging Themes***

- First Nations Epistemologies and Education
- First Nations Health and Healing
- Indigenous Governance and Law
- Indigenous Research Methods
- Orality and Connections with Literary Traditions
- Traditional Land Use Studies

## **OBJECTIVE 1: STRENGTHENING UNBC'S RESEARCH CAPACITY**

### **Developing the Strategic Research Areas Through Allocation and Support of Research Chairs**

Over the period of this Strategic Research Plan, eight of our Tier 2 Canada Research Chairs will complete their second term; these CRCs should be available for redeployment. UNBC will weigh the benefits of combining Tier 2s into Tier 1s with those of hiring new Tier 2 researchers. Research chair appointments may be targeted for foundational discipline areas on which the strategic research areas depend. We will also pursue other opportunities for endowed Research Chairs at the federal and provincial levels, as well as through private sponsorship.

### ***Gender representation***

UNBC is committed to gender equity in employment and in training the next generation of researchers. UNBC ensures that gender considerations are a fundamental component of all faculty searches. Yet we currently have a significant gender imbalance among our Canada Research Chairs: only one of UNBC's nine CRCs is female. UNBC's recruiting goal is to move toward a situation where at least 30% of our CRCs are female by 2015.

### **Other Strategies for Strengthening Research Capacity**

UNBC's Community Development and Natural Resources and Environmental Studies Institutes play an important role as catalysts for the development of research in two of our strategic areas. Resources to employ support staff will be sought, to enable these institutes to serve more effectively. An interdisciplinary health research institute will be established in partnership with Northern Health Authority, and discussions will be initiated about founding a First Nations/Indigenous research institute, in order to enhance capacity in these strategic areas. We will also recruit more post-doctoral fellows and visiting scholars to UNBC, and we are exploring opportunities for providing competitive financial incentives to do so.

## **OBJECTIVE 2: TRAINING RESEARCHERS**

Northern British Columbia and Canada's wellbeing depends on the availability of innovative and skilled citizens, with sophisticated understanding of the complexities of the ecosystems and societies in which we live. The training of undergraduate and graduate students and post-doctoral fellows is a fundamental mission for UNBC. Graduate students comprised 17% of our total student body in 2009/10. UNBC will continue to increase its number of research-based graduate students, including PhD students, and the number of post-doctoral fellows hosted. It will increase the number of PhD degrees it offers in fields connected to its strategic research areas. Concomitantly, recognizing how research opportunities contribute vitally to undergraduate students acquiring critical competencies, we will expand such opportunities.

## **OBJECTIVE 3: MANAGING AND ENHANCING RESEARCH RESOURCES**

To sustain and promote research activity at UNBC, we must manage our support programs (e.g. administrative, financial), physical facilities, field operations and equipment in innovative ways that provide the best service and access for faculty and students, and the best value to our communities and partners, while also respecting our goal to be Canada's Green University™.

## **OBJECTIVE 4: ENHANCING PARTNERSHIPS**

Collaborative research partnerships have characterized a significant segment of UNBC's research to date, and continue to be critical to UNBC's mission. Research partnerships include relationships both with researchers at other institutions in Canada and internationally, and with communities, organizations, agencies and industries at the regional level and beyond. UNBC will actively support the building of such partnerships by researchers (faculty members and students).

## **OBJECTIVE 5: MOBILIZING KNOWLEDGE**

The translation and transfer of knowledge is a critical role of researchers, and one that is increasingly emphasized and demanded of them. One of UNBC's key mandates is to promote knowledge mobilization. We aspire to excellence in 'traditional' methods of dissemination, such as publishing books, articles and reports, and training students. UNBC has also led in integrated knowledge translation, a direct outcome of its community-driven and community-based research partnerships.

## **MEASURING SUCCESS: RESEARCH PERFORMANCE INDICATORS**

To measure progress toward meeting the five objectives articulated above we suggest a set of research performance indicators that will be tracked over time. These include both input measures and output/outcome measures. Mechanisms are in place for collecting information on some of these indicators, but will need to be developed for others.

### **Input Measures**

- Total research revenues
- Tri-Council grant revenues
- Percentage of faculty members with Tri-Council Grants
- Number of Research Chairs (CRC and endowed chairs)
- Percentage of female Research Chairs
- Number of graduate students enrolled in research degrees
- Number of post-doctoral fellows
- Number of students employed as research assistants
- Number and proportion of graduate students holding external scholarships/fellowship
- Growth in major equipment inventory

### **Output/Outcome Measures**

- Number of refereed publications by UNBC researchers
- Number of publications with undergraduate students as co-author
- Number of publications with graduate students as co-author
- Number of graduate students completed
- Number of undergraduate and graduate recipients receiving national or international recognition for their scholarly activities
- Number of faculty members receiving recognition awards (national or international awards, honours, citations)
- Number of research conferences and workshops organized by UNBC researchers
- Number of journals edited by UNBC researchers
- Number of collaborative research projects with partners (other academic institutions, communities, First Nations, industrial partners, NGOs, etc.)
- Patents pending and registered
- Number of faculty- and student-owned research-based companies initiated
- Number of research-related community outreach events
- Establishment of new research institutes representing Strategic Research Areas

## **PLANNING AND APPROVAL PROCESS**

This second iteration of UNBC's Strategic Research Plan flows from UNBC's revised (2010) University Plan, which was developed after extensive community consultation across UNBC's service region. Starting with the input from those consultations, a draft plan was created. It was first reviewed by UNBC's Research Policy Advisory Council (RPAC); input and critique was then solicited from the research community at large, at all UNBC campuses. Once revisions were made, it was brought back to the RPAC for approval, and to the President for endorsement. The document was approved by the Senate Committee on Research and Graduate Studies, then approved by UNBC Senate on 27 October 2010.

The Office of Research will annually evaluate its progress toward meeting objectives, and the Vice President Research will annually report to UNBC's Senate and Board of Governors on progress. We recognize that the strategic planning process must also be flexible to accommodate unanticipated opportunities that may arise.