

SIMON FRASER UNIVERSITY

S.03-90

Senate Committee on University Priorities Memorandum

TO: Senate

FROM: John Waterhouse
Chair, SCUP
Vice President, Academic

RE: Faculty of Health Sciences Proposal

DATE: September 19, 2003

At its September 17, 2003 meeting SCUP recommended the following motion:

Motion

That Senate approve and recommend to the Board of Governors the establishment of a Faculty of Health Sciences at SFU effective September 1, 2004 as outlined in S.03-90

Attached is a copy of the proposal for the Faculty of Health Sciences which was reviewed and approved by members of SCUP.

encl.

c: D. Maclean, Director, IHRE
B. Brandhorst, IHRE
M. Hayes, IHRE

Proposal
For a
Faculty of Health Sciences

Background: Evolution to a Faculty of Health Sciences

Health research and education has a long history and is well established at Simon Fraser University. Its roots can be traced to the creation of the School of Kinesiology in 1970, the establishment of the Gerontology Research Centre in 1982 and the establishment of the Department of Psychology. Over the past twenty years health research has developed in all Faculties of the University and extends to nearly all disciplines. As a consequence, Simon Fraser University now has over 120 faculty members active in health research, but such activity is widely dispersed.

As early as 1992, efforts were underway to create a coherent framework around this dispersed activity as well as to create new areas of health research and teaching. In May 1994, the Task Force on Applied Health Programs recommended the development of a new unit for the delivery of a Health Studies Program at the undergraduate and graduate level (see Appendix A for a copy of the Task Force report). The Senate Committee on Academic Planning (SCAP) supported the general direction of the Task Force's report and recommended the establishment of an Applied Health Programs Planning Committee. This marked the first occasion where a Senate committee supported a proposal for the creation of a new unit that would focus and consolidate health-related research and programming at SFU. This initiative faltered in 1995 due to the absence of an obvious champion to lead the programming initiative.

In 1999, interest in developing new health research and programming initiatives re-emerged. This activity was encouraged by the emergence of several significant internal and external factors:

- increased interest, expertise and advocacy within Simon Fraser University for developing a coherent, more visible and innovative presence in health research in Canada;
- restructuring of federal funding for health research which reflected a new broadly based conceptualization of health (e.g., the creation of the Canadian Institutes for Health Research);
- increased priority for the management of health systems and health care on the public policy agenda; and,
- a global increase in the level of awareness and concern for health-related issues, the social, economic and cultural determinants of health, and health care financing.

These events defined an opportunity for Simon Fraser University to distinguish itself from traditional University health programming and Medical Schools within Canada.

After completing a comprehensive self-study and consultation process, it was determined that Simon Fraser University should establish an Institute as a first step towards the development of a graduate school in health studies. The Institute, formally established in 2000 (see Appendix B for a copy of the proposal

creating IHRE), was founded upon a broad conception of the term "health" that spanned the entire spectrum of research approaches, methods of inquiry, levels of analysis and research perspectives that are employed by researchers engaged in exploring and understanding health and disease. In its conception the Institute was to be a home and incubator of research programs and new educational programming across the university.

"Some of its researchers will investigate the social roots of disease, the organization and social dynamics of clinical practice, and the factors that control health-related institutions, systems, and policies. Research in association with the Institute will explore environmental aspects of health, the impacts of social policies and programs, the development of health policy, and the investigation of alternative approaches to disease prevention and health promotion. The Institute will support research directed to understanding biological, physiological, anatomical, biochemical, behavioural, biobehavioural, genetic and other phenomena that operate at the level of the molecule, cell, organ, individual or society. The Institute will promote research aimed at the application of health treatments and clinical interventions, technological innovations in support of discovery and understanding, health information systems, and the ways in which health services are administered, structured, and provided. The Institute has a comprehensive conceptualization of health research and it will invite all faculty engaged in health-related research to participate in its evolution."¹

The goal of the Institute was to "foster health-related research", to "promote, stimulate and nourish research collaborations that bridge basic biomedical, clinical and social science sectors", and to develop graduate programming.² The establishment of the Institute in 2000 reflected Senate's support for the evolution of health-related educational programming and research at SFU and recognized the need for an administrative structure that would provide a coherent framework for collaborative and innovative health education and research.

The vision of the Institute approved by Senate stipulated that IHRE develop into an internationally respected Graduate School for Health Research and Education offering unique graduate programming. It further stipulated that the Institute be required to identify and foster core strengths that would ensure that SFU uniquely and significantly contribute to health educational programming and research in North America. This development of core strength was to simultaneously incubate and promote corollary research and teaching programs within other individual departments and schools.

Since the creation of IHRE, Senate has further recognized the strategic importance of health-related research at the University and has approved it as one of the ten research priorities for the University as stated in the Strategic Research Plan submitted to the Canada Research Chairs program.

¹ Proposal for the Institute for Health Research and Education at Simon Fraser University May 11, 2000.

² SFU slightly altered the CIHR sector categorization and defined health research at SFU as that which would fall under one of five sectors: (1) Basic Biomedical, (2) Clinical Interfaces, (3) Health Services and Systems, (4) Societies, Cultures and the Health of Population, and (5) Technology and Health.

Vision

Simon Fraser University has built its reputation on excellence in research and creative educational programming. The timing is right to initiate the transformation of health education on this campus, particularly at the Graduate level. The research and teaching programs that are developed within the Faculty of Health Sciences will share the essential defining feature of the Faculty: **the integration of social and natural science research with population outcomes, societal application and policy analysis**. This integration will combine a broad spectrum of research approaches, methods of inquiry, levels of analysis and research perspectives. This unique approach will enable researchers and students to make original contributions to the study and understanding of health and disease and will establish Simon Fraser University at the forefront of multi-disciplinary health research in Canada.

The new Faculty of Health Sciences will support research and develop teaching programs that bridge science, policy and practice³ across the five sectors at the foundation of IHRE. As described in the following section there are currently a number of areas which will be further explored for possible program development. These areas fit well with the vision of the new Faculty and are consistent with existing capacity at SFU. Each new program area will be defined by a set of shared features:

- (1) the integration of science⁴, outcomes analysis and policy,
- (2) the cross-sectoral nature of the research questions and programs, and,
- (3) the adoption of multiple perspectives, modes of inquiry and levels of analysis.

The major funding vehicle for health-related research in Canada, the CIHR, has had a significant increase in the proportion of its funding envelope directed to research that transverses these areas. Clearly, CIHR along with other health research funding agencies in Canada are being aligned to promote more broadly based and integrated health research across the spectrum from the bench to the community. Embodied within the vision of the new Faculty is an effort to position SFU's health research and education in the same manner.

Aside from research funding support, which is acknowledged as an important driver for knowledge creation, the integrated approach to research and teaching programs will create new opportunities for the research plans of individual health researchers across campus. The faculty complement of the new Faculty will be strategically determined to ensure that they become core assets to complement the research programs of individuals working in the natural and social sciences, population health research and policy arenas. This underscores the incubator approach to be employed of the new Faculty.

³ The term practice is used here in a broad context beyond that which is normally associated with the work of health care practitioners.

⁴ The term science is used here to mean both social science and natural science

New health programs within the Faculty will form new areas of focus, each one of which draws together and builds upon the knowledge and approaches to inquiry present in each individual health sector. The end result is an integration of our understanding of health and its biological and social determinants that can then form the foundation for new discovery. The shared defining features of each new health program situate them in an overlapping (and further integrating) arrangement that provides coherence to the overall framework of the new Faculty. The areas of focus identified for the new Faculty of Health Sciences do not subsume the research and programming currently being conducted within each health sector across the University. Rather, these programs draw the individual sectors together in new ways.

The new Faculty of Health Sciences will have a core complement of faculty chosen for their multi-disciplinary approach to health-related research and their ability to examine questions from varying methodological perspectives. Their expertise will provide a bridging function to existing research and teaching programs and will complement the specialized expertise of faculty working within existing departments. These new faculty members will have primary appointments and teaching responsibilities in the new Faculty.

Initial Program Possibilities and Research Initiatives

Implementation of a proposed graduate program in Population and Public Health is viewed as the first step in implementing a series of teaching and research programs related to health. This initiative will require hiring new faculty having expertise in epidemiology, biostatistics, health economics, and health policy analysis. The new Faculty will assess development of other integrative health science programs consistent with national and regional opportunities and SFU interests and expertise. Some initiatives will focus on research, while others are likely to involve development of new graduate programs. A major goal of the new Faculty is to develop new undergraduate education programs. As a consequence, undergraduate programs related to human health sciences are ultimately expected to emerge arising either from other programs/departments which have undergraduate teaching migrating to the new Faculty or the new Faculty itself developing specific undergraduate offerings (possibly in collaboration with other academic units).

We describe here examples of 5 potential program/research areas, emphasizing their integrative aspects and multi-disciplinarity that cross the boundaries of existing sectors. The 5 areas are: Population and Public Health, Infectious Disease, Aging and Chronic Illness, Brain Function and Development, and Biomolecular Interactions. The proposed program Population and Public Health will be advanced for Senate consideration this fall. Other programs will be developed over the next two to three years. One way of thinking about the

proposed Faculty is that it will act as an incubator for new health programs and a home for researchers and programs that fit the integrated vision.

A brief example of the multi-disciplinary nature of each of these areas is provided below.

(1) Population and Public Health:

Population and Public Health focuses on the factors that influence health and disease and on developing, implementing, and evaluating interventions and policies that may produce changes in health at the individual and population level. This area of health research and programming requires an analysis of the causes of disease and the determinants for health that are situated in the social, economic, cultural and physical environments in which people live. The program as envisioned would be multi-disciplinary, requiring an integration of knowledge and methods from fields such as epidemiology, biostatistics, environmental health, medicine, sociology, anthropology, demography, economics, biology, geography, communications and health policy and administration. Population and public health transects all SFU research pillars and has particular relevance for those in the Faculties of Arts and Education who are interested or have expertise in health research and programming, particularly in important areas such as health education and medical history.

A potential area for development would be to examine the individual and population outcomes of health systems and policies. An integrated approach at the intersection of technology, public policy and health systems would provide educational and research opportunities across an expansive range of health topics. This is an important area in British Columbia and in Canada where the health system is undergoing significant change with decentralization and a greater focus on the renewal of primary care and public health within a fiscal framework that the province and country can afford.

(2) Infectious Disease:

The program and research development would be focused initially on immunology, particularly as it relates to vaccine development. Such a program would transect the basic biomedical field and would extend research in this domain to its impact on the health of populations, treatment and effective therapy, education and prevention, through to policy implications. In addition, such an initiative complements the proposed graduate Program in Population and Public Health, which will require associated faculty members having expertise in infectious and communicable diseases.

An initiative that views infectious disease from a broad based approach would differentiate SFU from most of the major medical schools and

would make significant contributions to society in examining these issues from this perspective. Concerns about HIV, AIDS, West Nile Virus, SARS, BSE, and potential bioterrorist agents have heightened public and government awareness of the need for more effective ways to respond to and contain historic as well as new infectious agents. Recruited faculty having research expertise in areas such as microbiology, virology, immunology, and vaccine development would be able to contribute to the developing new diagnostic and therapeutic approaches to infectious diseases and interact effectively with basic biomedical and bioinformatic researchers at SFU. Other new faculty would be more focused on education about and prevention of, infectious diseases, as well as public policy issues.

Immunology and vaccine development is the focus of a Tier 1 Canada Research Chair application under development at SFU between IHRE and MBB. It is anticipated that this CRC will fulfill a leadership role at SFU in the development of this program area.

(3) Biomolecular Interactions:

A new research initiative that would integrate bioinformatics, functional genomics, proteomic, and molecular genetic approaches for identifying new genes, signaling pathways, and macromolecular interactions with physical approaches to detecting and characterizing novel biomolecular interactions and complexes with design devices for diagnosis, monitoring, and drug delivery.

A CFI proposal to acquire infrastructure for a proposed Center for Biomolecular Interactions and Health Research (CBIHR) has been produced with the assistance and commitment of IHRE. Efforts to secure some initial infrastructure support for CBIHR's activities via an institutional infrastructure grant from the Michael Smith Foundation for Health Research which was led by IHRE has been successful. CBIHR would bring together approximately 30 researchers from Chemistry, Molecular Biology and Biochemistry, Kinesiology, and Biosciences, as well as from three other universities. Bioinformatic, functional genomic, proteomic, molecular genetic, microscopic, physiological, physical biochemical, and spectroscopic approaches will be focused on discovering and characterizing biomolecular interactions, macromolecular complexes, and signaling pathways that regulate the functions of cells. In turn, nano-devices for disease diagnosis, health monitoring, and drug delivery will be developed by the materials scientists associated with the initiative. This proposal is an example of a grass roots, multi-disciplinary research initiative spanning existing Faculties that can be fostered within the proposed Faculty as part of its mandate to enhance research and graduate education activities related to health on a university-wide basis.

This area of health research once developed could provide significant resources and technical analysis at the level of the gene (DNA

manipulation, sequencing and mass spectrometric analysis of proteins), molecular structure and molecular interactions (titration microcalorimetry, surface-plasmon resonance and nuclear magnetic resonance spectroscopy) and the cell (microscopy, flow cytometry and cell sorting). These capabilities will greatly enhance the biomedical research of program areas in population and public health (molecular epidemiology), infectious diseases, brain function and development, and aging and chronic disease.

(4) Aging and Chronic Illness:

SFU's reputation in the field of gerontology is known worldwide. There are emerging programs in rehabilitative engineering in the Schools of Engineering and Kinesiology. SFU is the home of the CIHR Institute of Nutrition, Metabolism and Diabetes. SFU faculty members in Kinesiology and Gerontology have externally funded research programs in cardiovascular disease, risk factors and conditions, and obesity. SFU is developing an exciting partnership with the Canadian Center for Arthritis Research and together have sponsored a British Columbia Leadership Chair in Arthritis and Musculoskeletal Research.

The opportunity for program development and research aging and chronic illness would draw together a broad array of perspectives including assistive devices, population health issues, social and health policy including such things as pension issues, and the exploration of diseases associated with aging at the biomedical, cellular and genetic level. Examining the area of aging and chronic illness from a multi-faceted approach would enable the extension of research focused on individual aspects of this complex area. Development in this domain is critical given the population demographics both nationally and internationally, as well as the stresses that such demographics are having on areas such as health care, pension legislation, mandatory retirement, assisted living architecture, to name just a few.

(5) Brain Function and Development:

An initiative in brain function and development would see the integration of research perspectives across neurodegenerative disorders, brain repair, neuroscience, child development, sleep disorders, brain injury, dementia and social and health policy. Clearly, this domain transects and complements studies in aging and chronic disease as well as those related to children and youth.

SFU faculty members in this area have excellent scientific reputations in cognitive, biological, developmental, and social science. For example, as well as an APA/CPA accredited program in clinical research and practice, the Department of Psychology is developing a comprehensive program in neuro-psychology. Other units and programs within Arts (e.g., Cognitive Science Program; Linguistics; Gerontology) and the broader SFU community (e.g., the Consortium for the Advancement of Child Health

(CACH) sponsored by IHRE) provide a sound intellectual and collegial foundation for the interdisciplinary nature of health research and education on the SFU campus. Biomedical research programs in neuroscience are underway in Kinesiology, Biosciences and Molecular Biology. An emerging strength at SFU in development disabilities related to brain function and development has brought dramatic advances in knowledge in the past decade. There is an enormous potential to develop new strategies for early intervention that will ultimately improve the quality of life of individuals with development disabilities and to facilitate policy solutions that will reduce overall costs for individuals, families, and communities.

IHRE and a Data Warehouse

In addition to the educational program areas above, the Faculty of Health Sciences will become the permanent home for the Institute for Health Research and Education (IHRE) and one additional research centre.

(1) Institute for Health Research and Education

The Faculty of Health Sciences, as home to the Institute for Health Research and Education, would maintain its principle strategic objectives to support, promote, and develop health-related research opportunities across the University. For example, in addition to fostering the CBIHR initiative, IHRE has received external funding in support of grant facilitation, community liaison efforts on behalf of researchers, and improvement of the library collection related to health. IHRE's extensive web site has significantly raised the profile of health research at SFU. The Faculty would provide a focus for building interdisciplinary ties among health researchers, identifying and establishing common resources and facilities to support health-related research and education of university wide interest. It will expand its ties to the provincial and federal government for health policy development and evaluation.

(2) Centre for Population Data Warehousing and Analysis (CPDWA)

Though not yet fully developed, the vision for the Centre for Population Data Warehousing and Analysis would be a fully-integrated collection of databases covering a variety of overlapping data and populations. The data might include biochemical, genetic, clinical, pharmacologic, economic, cultural and behavioral data, with the populations covered being as large and inclusive as possible. The Centre will be developed so as to complement and share resources and data with existing Centres and programs at SFU, such as IRMACS and the Bioinformatics Research and Training Programs (the latter already funded by CIHR), as well as external health agencies, government databases, and other database providers. The Centre will be a significant asset to all health-related researchers at the University.

As the new Faculty of Health Sciences evolves, other areas of research and teaching programming would be considered. The Faculty will be committed to an incubator role for working with faculty members across the University who have ideas for new educational programming and research projects that would promote multi-disciplinarity and innovative programming in health research and education.

While the research agenda and programming initiatives undertaken by the new Faculty of Health Sciences will be independent, they will also extend the work of existing health research and programming at SFU. New graduate programs and research projects will complement the current strengths of outstanding health researchers already positioned at SFU.

Faculty Appointments and Departmental Connections

The initial core complement of the Faculty of Health Sciences will be comprised of approximately 14 tenure-track positions (with a mix of senior and junior appointments). A portion of these faculty members will have expertise in technical and methodological areas such as health economics, epidemiology (e.g. chronic disease, infectious disease, occupational health, health systems/policy), demography, qualitative research methods, public health/community health, international health and biostatistics. This initial core will ensure that SFU has the breadth in methodological approaches to provide the graduate programming envisioned and to launch the first of the new graduate programs (Population and Public Health).

Academic leadership and the strong desire to work with others will be critically important qualities for new faculty appointments in the Faculty of Health Sciences. Of the fourteen initial faculty members, four will be Canada Research Chairs who will be expected to provide leadership and develop research and teaching programs. The Faculty of Health Sciences, in consultation with the Deans of the other faculties, will determine how best to use these resources to ensure the necessary leadership for the development of potential new programs and centers.

It is envisioned that the Faculty of Health Sciences will collaborate with existing departments in developing programs in both the new Faculty and in existing units. A variety of appointment arrangements are envisioned including joint appointments of faculty members between the Faculty and other academic units on campus, associate member status with the new Faculty or by new faculty in the Faculty to other existing academic units, and adjunct appointments for individuals located external to SFU, either at other universities or in public health or health service organizations. These appointments will enable others to make critical contributions to the research and graduate education programs being offered in the Faculty of Health Sciences and for individuals from that Faculty to contribute to existing units.

A collaborative relationship is also envisioned for graduate students. Graduate students within the Faculty could expand their education by taking courses

hosted by other academic units and build graduate supervisory relationships that extend beyond the Faculty. Equally, graduate students from academic units across campus will be able to enroll in courses offered by the new Faculty and will could utilize faculty from this unit on their supervisory committees in other academic units.

The possibility (given appropriate approvals and processes) is open for existing research groups and teaching programs at SFU to migrate to the FHS. Within a period of five to ten years it is expected that the FHS will evolve into a faculty of similar size to other professional faculties at SFU.

The vision being put forward in this document is one of an integrated multidisciplinary approach to health research and education which defines health in its broadest context. Therefore, irrespective of how the new Faculty develops and what structural form it ultimately takes, to be successful it is essential for the new Faculty to develop close collaborations and working relationships with interested members of University's existing units concerned with health.

In addition, it is anticipated that substantive collaborations will develop between the new Faculty and other universities in BC. As examples, both the University of British Columbia and the University of Victoria have already expressed interest in this regard. Preliminary discussions have occurred with the Department of Epidemiology and Health Care at UBC and St. Paul's hospital on possible collaboration with respect to urban health. The IHRE supported Consortium for the Advancement of Child Health (CACH) has already received matching funding support from the Human Early Learning Partnership based at UBC. In addition IHRE has been approached by the UBC Centre for Health Promotion on a number of health related research and education programs.

Resources

In 2000, as part of the university's decision to develop a coherent and visible presence in health research and programming in health, a five year budget commitment was made totaling \$1.8 million in recurring personnel and operating costs (including 10 tenure track faculty positions, administrative personnel, program development and senior leadership), as well as \$1.1 million in nonrecurring start up and equipment costs (primarily related to the establishment of research facilities for the new faculty complement). Budget allocations have been made in each of the past three years towards this commitment. A portion of the budget will be maintained to preserve the operations and goals of stimulating, supporting and incubating health research outside the new Faculty through IHRE. Additional funding in line with the annual budget projections will be set aside over the next four years to ensure the successful implementation of the health initiative at SFU.

It was also anticipated that approximately \$10 million in fund raising would be required to construct adequate facilities to house the new faculty complement. As elsewhere in the University, space is a significant issue for this initiative. The University is actively engaged, as part of its space and capital planning exercises, in finding the necessary office and research facilities to adequately house the new faculty members to be recruited over the next three years.

Timelines

Clearly, with the establishment of a new faculty at SFU there will be the need for a transition period to allow for the development of the appropriate faculty policies, governance structures and procedures as well as the need to situate the new faculty within the policy and governance structures of the University including the approval of new programs both within and external to the University. The timing for some of these activities is difficult to predict as significant components are beyond our control.

We anticipate the following timelines (assuming approval of the FHS by BOG in December 2003):

Faculty recruitment

Initial recruitment of 5 to 6 new faculty members will occur in a staged manner between June, 2004, and September, 2005. Further faculty recruitment of an additional 6 to 8 new FTE's will occur between 2005 and 2008 depending on the availability of space and research facilities. Some of these most likely will be joint appointments with existing units in support of new research and teaching programs. A CRC Tier 1 nomination was recently submitted in Immunology and Vaccine development. With approval the position will begin in September, 2004, creating an opportunity to fill a new faculty position in molecular virology or immunology by September 2005.

New programs

The new MSc program in population and public health will be developed as a priority, with the preliminary program proposal submitted to graduate studies by January, 2004, on approval of the FHS by the BOG. With approval, the full program proposal will be developed, submitted and approved by January, 2005. The first cohort of students will be admitted to the MSc program in September, 2005.

Additional new educational programs will be developed after this period in collaboration with other University units.

Assessment

A comprehensive external review of the MSc program and FHS will occur in the fourth year of the new program. The review will be consistent with University

policy and include an assessment of the educational programs, faculty complement and their scholarly activities.

Conclusion

In conclusion, the creation of the Faculty of Health Sciences is the next logical step in the evolution of health research and education at SFU that began over three decades ago. The new Faculty will establish a unique presence in North America in health research and educational programming. Its defining character will be the integration of science, policy, and practice. New integrated and innovative program areas will be developed characterized by a set of shared features, namely (1) the integration of science⁵, outcomes analysis and policy, (2) the cross-sectoral nature of the research questions and programs, and, (3) the adoption of multiple perspectives, modes of inquiry and levels of analysis. The Faculty will house the Centre for Population Data Warehousing and Analysis (CPDWA) and the Institute for Health Research and Education (IHRE). Graduate programming within the Faculty will commence with a MSc Program in Population and Public Health.

The primary advantages for the development of a new Faculty of Health Sciences at SFU are:

- The Faculty will establish innovative new graduate health programming in Canada that is distinct from that offered by traditional medical schools.
- SFU will become an attractive destination for faculty and students interested in broadly based health research and education.
- The Faculty will establish a locus for new health research that integrates science, policy and practice, thus contributing to improving health.
- The core academic appointments in the Faculty will bring important new expertise to SFU and provide a critical mass of faculty working at the intersections of health research sectors.
- The Centre for Population Data Warehousing and Analysis in the Faculty will provide essential data research resources and infrastructure to population and basic biomedical researchers across the university.
- The visibility provided by a new Faculty will place SFU in a position of inclusion at local, national and international health policy tables and will establish SFU as a key participant in health-related education and research in Canada.

Other Universities in Canada and particularly in BC, are strategically positioning themselves for increased activity in health fields. Many have made significant commitments to clinical programs. By adopting an integrated approach to link

⁵ The term science is used here to mean both social science and natural science

social, scientific, population and policy issues, Simon Fraser University can distinguish itself from the traditional medical school Universities and establish itself as an innovative and important presence in health research and education.

9/19/03