

# SIMON FRASER UNIVERSITY

S.05-112

## Senate Committee on University Priorities Memorandum

TO: Senate

FROM: John Waterhouse  
Chair, SCUP  
Vice President, Academic

RE: Proposal for a Bachelor of Arts in  
Health Sciences (Major, Honors, and  
Minor in Health Sciences) (SCUP 05-057)

DATE: October 19, 2005

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At its October 5, 2005 meeting SCUP reviewed and approved the proposal from the Faculty of Health Sciences for a Bachelor of Arts in Health Sciences (Major, Honors, and Minor in Health Science).

### Motion

That Senate approve and recommend to the Board of Governors, the proposal for a Bachelor of Arts in Health Sciences (Major, Honors, and Minor in Health Sciences) offered by the Faculty of Health Sciences:

*Withdrawn from Agenda*

encl.

c: D. MacLean  
N. Haunerland

The SCUS memo concerning the new courses in this program is attached at the end of this document. The approval of the courses is contingent upon Senate's approval of the BA in Health Sciences degree program,



# **PROPOSAL**

**Bachelor of Arts Degree in Health Sciences**  
**(Major, Honours, and Minor in Health Science)**

**Offered by**  
**The Faculty of Health Sciences**  
**Simon Fraser University**

**September 19, 2005**

## EXECUTIVE SUMMARY

The last decade has seen a dramatic shift in approaches to managing the health of Canadians. While historically the main focus has been to improve medical care, emphasis is now placed increasingly on integrated approaches to promoting health, preventing disease and injuries, and establishing healthy environments. The first ministers, at their meeting in September 2004, stated:

*"All governments recognize that public health efforts on health promotion, disease and injury prevention are critical to achieving better health outcomes for Canadians and contributing to the long-term sustainability of Medicare by reducing pressure on the health care system...For the first time, governments will set goals and targets for improving the health status of Canadians through a collaborative process with experts."*

Indeed, it is widely accepted that scientific knowledge alone will not produce dramatic increases in public health. Improving health across a population is contingent upon approaches that closely integrate the social and behavioural determinants of health into scientific knowledge and health promotion and disease prevention strategies. This burgeoning awareness has resulted in the appearance of new and restructured post-graduate programs across Canada, including Simon Fraser University's new Master of Science degree in Population and Public Health. Pressing need for education and training in these areas, however, exists not only at the specialized graduate level. Preparation at the undergraduate level has been much slower to emerge, and there is a conspicuous absence of programs that prepare, not only for graduate opportunities in population and public health, but also for the new needs in the changing health care system.

In response to these new opportunities, the proposed BA degree program will educate students in the relevant areas of health. They will learn determinants of health, health risk assessment and mitigation, evidence-based health education and promotion; health systems and program development, implementation and assessment; health information systems, and the use of state-of-the-art technology. Taking an integrated approach that builds on the social and natural sciences, our graduates will make informed decisions based on knowledge and ethical standards; with a judicious understanding of the needs, values, and beliefs of individuals and communities.

The BA degree in Health Sciences proposed here will first be offered in September 2006. Eventually, it will complement a BSc degree in Health Sciences that is more focused on the biological and technical aspects of health. It is anticipated that together these two undergraduate programs will accommodate substantial numbers of students and produce a significant proportion of the graduates needed in our province and beyond. The degree aligns well with the strategic goals and priorities of SFU and the Faculty of Health Sciences. It is relevant to the learning goals of students, as reflected in student demand and interest. Finally, it meets societal needs for personnel in the broad area of public health.

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# 1 PROGRAM ORIGIN

## 1.1 IHRE

SFU's expertise in health is spread across many administrative units, including Kinesiology, Molecular Biology and Biochemistry, Psychology, and many other departments across the mathematical, social and applied sciences. SFU's drive to establish an academic unit clearly identified as "health", which began over a decade ago, came to fruition in 1999 with the establishment of the Institute for Health Research and Education (IHRE). The specific goals of IHRE were: (1) *"To foster health-related research at Simon Fraser University through the development of research collaborations and partnerships which bridge the biomedical, clinical and social science sectors incorporating multiple research perspectives"* and (2) *"To develop and offer innovative education programs in the broad area of health"* (<http://www.ihre.sfu.ca>).

Towards the first goal, IHRE brings together more than 130 researchers from all sectors of SFU with expertise and interest in health research. The goal is to foster cross-disciplinary research collaborations in the area of health. To facilitate cross-disciplinary interactions, IHRE support has substantially strengthened library holdings in the area of health. Moreover, personnel have been hired to support the infrastructure for health research across programs. Two technicians for instrumentation have recently started to provide services. Other personnel are in place to assist with grant applications. IHRE has funded proposals for program development, supported research projects, and coordinated some very successful fundraising activities. In order to facilitate the second goal (educational programming), IHRE proposed the development of a Faculty of Health Sciences (FHS) which would offer undergraduate and graduate degrees.

## 1.2 The Faculty of Health Sciences

In 2004, the Senate of Simon Fraser University created the Faculty of Health Sciences. The Senate documents emphasize the cross-disciplinary nature of this faculty: *"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 in existing departments."*

In addition to the research mandate, the faculty has a clear teaching mission: *"A major goal of the new Faculty is to develop new undergraduate education programs"*. More specifically, the Senate document states: *"The new Faculty of Health Sciences will support research and develop teaching programs that bridge science, policy and practice across the five sectors at the foundation of IHRE"*, identified as (1) Basic Biomedical, (2) Clinical Interfaces, (3) Health Services and Systems, (4) Societies, Cultures and the Health of Populations, and (5) Technology and Health.

The initial focus was on graduate programs: the Master of Science degree in Public Health has been approved, and two other graduate degrees are currently being developed. The Faculty now needs to mount its initial undergraduate programs and attract a critical mass of faculty, students, and scholars to allow a rich spectrum of course offerings.

## 2 CURRICULUM

### 2.1 Overview

The three areas of emphasis for the proposed program can be summarized as follows:

- social determinants of health
- health technology and information systems
- health systems and policy

All of these areas are of great current interest, and through specialization students will be better prepared for the full range of career opportunities. Within each of these streams, the focus is intentionally broad. Thus the syllabus will cover health issues from all levels (systems, individuals, communities, and populations) encompassing a mix of courses that integrates health sciences and population health with sociology, anthropology, epidemiology, biostatistics, economics, as well as health policy and administration. Given this interdisciplinary scope, the core courses will span five foundation areas, namely:

- determinants of health
- evidence-based medicine
- foundations in sociocultural and ethical aspects of health
- foundations in human biology
- methodologies – including technology, basic statistics and computation

Throughout the curriculum, case studies will stress problem solving in interdisciplinary teams coping with uncertainties. A Co-op option will eventually provide the opportunity to acquire workplace skills in health risk assessment and mitigation, health administration and policy, health promotion, planning, policy, and the technology of health.

The program presented here should be seen as a starting point only, not as a fully developed program that contains all the specialty courses that will eventually be offered. The details and the focus of those upper-division electives depend on the input and expertise of the faculty members of the Faculty of Health who have not yet been hired, or have not yet arrived on campus.

### 2.2 The new context for health and the need for this program

The above stated goals for the curriculum are framed within the current Canadian concept of health. By 1974 the causes of morbidity and mortality were delineated scientifically and the major risk indicators were identified. A Health Canada report *A New Perspective on the Health of Canadians* (the Lalonde Report) identified a "health field concept" in which health care itself is only one of four major influences on health. Biology, lifestyle, and environment are seen as equally important. The key message of the Lalonde Report was that health does not equal health care – other influences must be taken into account.

In 1986, the Ottawa Charter on Health Promotion extended the health field concept and identified prerequisites for health to include peace, shelter, education, food, income, a stable eco-system, sustainable resources, social justice, and equity. This spectacular broadening of the health concept was reflected in a government report *Achieving Health for All* (the Epp Report), which proposed an integration of sociocultural aspects of health, the health sciences, and public policy. While the mission statement of Health Canada remained "To maintain and improve the health of the Canadian peoples" the determinants were expanded to include sociocultural factors, standard of living, lifestyle, and working conditions. Consequently, while health education and health care remain part of the methodology, the scope is dramatically expanded. Thus the measures used include behavioural and social change, policies for population health, including legislation (such as anti-smoking legislation) to mitigate the biochemical mediators and indicators of risk.

In 1999 a third report *Toward a Healthy Future: the Second Report on the Health of Canadians* was released by the Federal/Provincial/Territorial Advisory Committee on Population Health. This report added two key ideas to the analysis of factors shaping the health experiences of populations: a life course perspective (i.e., the understanding of health outcome as the cumulative outcome of experiences over a person's entire life), and the crucial role of early child development in shaping health experiences later in life. As a result of these developments, the scientific determinants of health are now considered within the context of social environments, developmental experiences of early life, personal health practices, the physical environment, genetics and biology, and the availability of effective health care services.

The reform of the funding system for health research reflects this paradigm change. Through funding realignment in the CIHR, we see new directions in health research, health administration, and health policy that rely on the integration of social science, applied sciences and biological sciences. Following the research shift, new educational initiatives at the post-graduate level started to appear. Among the first, SFU's Faculty of Health Sciences admitted, in September 2005, its initial cohort of graduate students in the newly-established MSc in Population and Public Health.

While specialized graduate degrees are being established here and elsewhere, initiatives at the undergraduate level are scarce. The proposed BA in Health Sciences will be among the first in Canada that specifically addresses the new concept of health. From our University's perspective, the need for formal undergraduate training is obvious from the absence of any similarly trained applicants to the new graduate programs in the Faculty of Health. From the perspective of the wider society, graduates are needed, not so much as high-level decision makers, but as mid-level program administrators, program coordinators, report writers, etc. Individuals with relevant expertise are required in programs for health promotion, disease prevention, and health risk mitigation. In addition, there is a need for personnel with experience in health information systems who are qualified in the management, analysis, application, and interpretation of the flood of data collected in various health sectors. Finally, private and public institutions require individuals with an understanding of the sociocultural, environmental, and biological determinants of health to find information, evaluate, prepare reports, and draft policy for decision-makers in health administration and health policy.

## **2.3 Learning objectives - what a student will gain from the program**

Students will be taught the determinants of health, health risk assessment and mitigation, and effective strategies for health promotion and disease prevention using evidence-based information, cutting edge educational tools, and state-of-the-art technology. They will be trained to be sensitive to ethical considerations, community and individual norms, needs, values, and belief systems.

Graduates of the program will understand health policy, health administration, and health care delivery, and the impact of evidence-based policy on population health. They will have a repertoire of skills related to planning, design, development, and implementation of community and population-based health programs. In particular they will have a practical knowledge of health needs assessment, program evaluation, and cost-efficiency. They will have experience in interdisciplinary team problem-solving, consensus building, and group decision-making while coping with uncertainties.

Required and elective courses will provide an understanding of the health inference, technology, and informatics related to production of new knowledge and its application. They will know the applications of technology in health policy development and the interpretation of information in health data banks in generating evidence-based policies affecting individual and public health.

While all students will be exposed to these general topics, the goal of the upper-division curriculum is the more comprehensive treatment of selected aspects. Students will select one of the following three streams which each have different course requirements:

### ***Stream 1: Social determinants of health***

Graduates of this stream will be equipped with an understanding of the socio-cultural determinants of health and health risk mitigation through health promotion, health communication, and behaviour modification. They will be familiar with effective strategies of health promotion through health education, including web-integrated education using current technology. They will be sensitive to ethical considerations, community and individual norms, needs, values, and belief systems. They will be able to frame health issues in a global perspective, including health problems and health literacy in vulnerable populations.

### ***Stream 2: Health technology and information systems***

Graduates of this stream will be equipped to use current technology and methodology including spatial epidemiology and information technology related to collection, storage, and processing of health records, and health data bases. They will be familiar with quantitative health inference using statistics, health informatics, computational and statistical analysis, research design, the technology of evidence-based health, and the applications of information technology in health research and health policy development.

### ***Stream 3: Health systems and policy***

Graduates of this stream will be equipped with an understanding of the workings and analysis of health systems. They will know how public health changes are contingent upon the development and implementation of evidence-based and viable health policies. They will have an understanding of the health care delivery system and its outcomes in population and public health. They will have a repertoire of skills related to analysis, planning, design, development, and implementation of community and population-based health programs. In particular, they will have a practical knowledge of health needs assessment, program evaluation, and cost-efficiency. They will be experienced in interdisciplinary team problem solving, consensus building, and group decision-making while coping with uncertainties.

Within each stream, students will learn to apply the methodology as a skilled worker uses a tool. They will be taught the theoretical basis of complex methodologies only to the extent needed to understand the applications and limitations of that method as an analytical tool. Courses will include laboratories and case studies in which students learn what problems the methodologies are intended to address, as well as their strengths and limitations.

## **2.4 Courses and curricular requirements**

The general requirements for graduation in the *Bachelor of Arts (Health Science)* program are the completion of 120 credit hours, including at least 45 in the upper division. The Faculty's BQW requirements must also be met. Due to the interdisciplinary nature of the degree, all students will be exposed to the foundation concepts in the social and the natural sciences; hence, only six additional credits of dedicated breadth in the arts will be required. The detailed course requirements are listed in Table 1.

For a *Bachelor of Arts (Health Sciences Honours)* degree, both a CGPA of 3.0 and an upper division GPA of 3.0 is required. Honours students must complete at least 132 credit hours and meet all the requirements listed for Health Sciences majors. In addition, Honours students must complete an Honours thesis (HSC 490, 491, 492), based on independent research under the direction of a faculty member. Honours students who obtain both a program and graduation GPA of 3.5 are eligible for the designation "first class".

For a *Minor (Health Science)* degree students must complete HSCI 210, 211, 212, 213, and at least 15 upper division HSCI credits.

## TABLE 2.1: DEGREE REQUIREMENTS:

### Lower division requirements:

### Prerequisites

All of:

- |                                                                     |                                            |
|---------------------------------------------------------------------|--------------------------------------------|
| 1. HSCI 110-3 Perceptions and misperceptions of common health risks | -                                          |
| 2. HSCI 130-3 Foundations of epidemiology                           | -                                          |
| 3. HSCI 140-3 Complementary and alternative medicine                | -                                          |
| 4. HSCI 160-3 Global perspectives on health                         | -                                          |
| 5. STAT 201-3 or 203-3 or 100-3                                     | -                                          |
| 6. HSCI 210-4 Cancer                                                | 15 h, 2 of HSCI 110, 130,140, 160          |
| 7. HSCI 211-4 Cardiovascular disease, diabetes, obesity             | 15 h, 2 of HSCI 110, 130,140, 160          |
| 8. HSCI 212-4 Infectious diseases                                   | 15 h, 2 of HSCI 110, 130,140, 160          |
| 9. HSCI 213-4 The environment and human health                      | 15 h, 3 h STAT, 2 of HSCI 110, 130,140,160 |
| 10. KINS 105-3 Fundamentals of human structure and function         | -                                          |
| 11. SA 101-4 or 150-4                                               | -                                          |

**Total: 38 credit hours, including 28 HSCI credits**

### Upper division requirements:

### Prerequisite

All of:

(15 HSCI credits)

- |                                                                      |                      |
|----------------------------------------------------------------------|----------------------|
| 1. HSCI 301-3 Foundations of health communication & health promotion | HSCI 210,211,212,213 |
| 2. HSCI 302-3 Evidence-based decision making in health               | HSCI 210,211,212,213 |
| 3. HSCI 320-3 Health technology - Laboratory methods                 | HSCI 210,211,212,213 |
| 4. HSCI 321-3 Health technology - Imaging                            | HSCI 210,211,212,213 |
| 5. HSCI 401-3 Behaviour modification in health promotion             | HSCI 210,211,212,213 |
| 6. XXX-xxx-3 Bioethics (to be developed jointly with Philosophy)     | 30 credit hours      |

Supplementing these general requirements, four stream-specific courses and five Health elective courses are required for the *Bachelors of Arts (Health Science)* degree. Honours students need to complete these requirements plus an Honours thesis (HSCI 490, 491, 492 = 15 credits).

## ***Social Determinants of health***

All of: (15 credits including 7 HSCI)

SA 355-4 Quantitative methods

SA255+ STAT203

SA 356-4 Qualitative methods

SA255+SA101

HSCI 421-4 Health Survey methods

HSCI 330+SA355 or SA356

HSCI 430-3 Health problems of vulnerable populations

HSCI 301

At least 5 elective courses (see below) including at least 9 HSCI credits (for a total of 31 U/D HSCI).

***Other electives to make up 120 credit hours***

## ***Health technology and information systems***

All of: (13 credits including 10 HSCI)

STAT 302-3 Analysis of experimental and observational data

HSCI 330-3 Exploratory strategies in epidemiology

HSCI 302+STAT 302

HSCI 420-4 Bioinformatics and health information systems (Lab)

HSCI 301

HSCI 422-3 Diffusion pathways in the spread of disease

HSCI 330

At least five elective courses (see below) including at least six HSCI credits (for a total of 31 U/D HSCI).

***Other electives to make up 120 credit hours***

## ***Health systems and policy***

All of: (13 credits+ including 13 HSCI)

HSCI 305-3 The Canadian health system

HSCI 210+ 211+ 212+ 213

HSCI 306-3 Principles of health economics

HSCI 210+ 211+ 212+ 213

HSCI 423-3 Health policy in disease mitigation and public health

HSCI 301+ 302

HSCI 424-4 Strategic applications of GIS in health (lab)

HSCI 301+ 302

At least five elective courses (see below), including at least three HSCI credits (for a total of 31 U/D HSCI).

***Other electives to make up 120 credit hours***

**Health electives:** Five courses chosen from the following list, or permission by the undergraduate advisor; additional courses may be added later.

*All HSCI 300-400 level courses*

*All GERO 300-400 level courses*

HIST 409-4 Disease and society

9h HIST

GEOG 355-4 Geographical Information Science II

GEOG 255+100

GEOG 386-4 Geography, health, and health care

GEO241+100

KIN 375-3 Growth and development

KIN105+142

KIN 340-3 Active health: behaviour and promotion

KIN105+140+143

PSYC 365-3 Health psychology [note pre-requisites]

PSYC100+102+201+260

SA 337-4 Sexuality and society

SA250

SA 418-4 International health

SA250

SA 318-4 Anthropology of medicine

SA101

## 2.5 Individual courses

Initially, the Faculty of Health Sciences will offer the courses listed below. It is anticipated that the lower division courses will be offered annually, as will the core upper division courses required for all streams. The other upper division courses will normally be offered at least bi-annually, and more frequently if warranted by enrolments.

Course calendar descriptions are provided in Section 4.2. Please note that detailed course outlines, as well as additional upper division courses will be developed once new faculty have arrived. The provision of special topics courses (HSCI 471, 472, 473) will allow offering new courses immediately, and test them prior to their incorporation into the curriculum.

- 110-3 Perceptions and misperceptions of common health risks
- 120-3 Introduction to human sexuality and sexual behaviour
- 130-3 Foundations of epidemiology
- 140-3 Complementary and alternative medicine
- 150-3 Current topics in human sexuality
- 160-3 Global perspectives on health
- 210-4 Cancer
- 211-4 Cardiovascular disease, diabetes, obesity
- 212-4 Infectious diseases
- 213-4 The environment and human health
- 301-3 Foundations of health communication and health promotion
- 302-3 Evidence-based decision making in health
- 305-3 The Canadian health system
- 306-3 Principles of health economics
- 320-3 Health technology - Laboratory methods
- 321-3 Health technology - Imaging
- 330-3 Exploratory strategies in epidemiology
- 401-3 Behaviour modification in health promotion
- 420-4 Bioinformatics and health information systems
- 421-4 Health survey methods
- 422-3 Diffusion pathways in the spread of disease
- 423-3 Health policy in disease mitigation and public health
- 424-4 Strategic applications of GIS in health
- 430-3 Health problems of vulnerable populations
- 471-3 Special topics in health sciences I
- 472-3 Special topics in health sciences II
- 473-3 Special topics in health sciences III
- 488-3 Directed studies in health sciences
- 489-3 Directed research in health sciences
- 490-5 Research proposal
- 491-5 Independent research
- 492-5 Undergraduate research thesis

*(HSCI 490, 491, 492 are restricted to Honours students; together, they form the Honours Thesis)*

## **2.6 Learning methodologies**

As indicated above, courses from both inside and outside the Faculty of Health Sciences will provide a foundation of core methodological skills. Clusters of electives will accommodate the specialized needs of students. Many of these courses will emphasize research findings as the basis of the facts and concepts taught, highlighting current methodology and inference. Selected students with advanced standing will be admitted to directed research courses or to graduate courses.

Wherever possible, courses will incorporate case studies to ensure grounding in current real-world problems. Learning will be active, rather than a passive memorization of facts. Diverse viewpoints will be explored in an inclusive way, and inferences will be strictly evidence-based.

Theoretical skills are best conceptualized in the context of applications in which they will be used. For this reason, many courses will use case studies and tutorial workshops to stress applications. The involvement of health professionals as associates in the teaching program and as guest lecturers will further enrich the classroom experience. High emphasis is placed on team problem-solving, good oral and written communication, and mathematical and computational skills; such training is deemed essential by most employers. For selected students, a cooperative education option is developed jointly with the SFU Coop office, which has agreed to make their instructional modules on employability and job-search skills available to our students.

A survey of student needs and wishes indicated that significant numbers want an online component to their courses, including the possibility of taking some courses solely by online delivery. Preliminary discussions have taken place with LIDC (eLINC at SFU Surrey) to jointly develop web-based components of HSCI courses. The Faculty of Health Sciences will take responsibility for developing the course content, while LIDC will provide web design and course delivery resources. It is envisioned that web integration is especially useful for the practical application of learned concepts.

## **2.7 Degree completion time**

Normal completion time is eight to ten semesters, depending on the course credit load taken each semester. Honours students can expect to add one additional semester. In the Coop option, the semesters of cooperative work are additional.

## **2.8 Admission requirements**

For admission into the Faculty of Health Sciences, the same requirements apply as for general admission (=Arts and Social Sciences requirements).

## **2.9 Transfer of courses from other universities**

We encourage the incorporation of relevant courses from other universities into the students' degree programs. Once our courses are approved, we will coordinate with the BC Council of Articulation and Transfer (BCCAT) possible articulation agreements with other institutions from the BC college system. We expect that many of our courses will be unique and not directly articulated to courses offered in the colleges, therefore, we will consider block transfer options with selected institutions that offer relevant diploma programs.

### **3. NEED FOR AND DEMAND FOR THE PROGRAM**

#### **3.1 Relationship to existing Canadian programs**

While there are several related undergraduate programs in Canada, most of the specific degrees offered are more narrowly focused than the BA degree proposed here. In addition to programs offered in Eastern Canada (Community Health Sciences at Brock University, Health Science and Human Biology at the University of Toronto, BSc in Health Education at Dalhousie University, and degrees in the Faculty of Applied Health Sciences at the University of Waterloo) only one Bachelors of Health Science is offered in the West - at the University of Lethbridge. With a focus on nursing or addictions counseling, the Lethbridge degree addresses rather specific needs, unlike the more general degree proposed here.

The program at the University of Waterloo has a different focus from our proposal, but it appears to be moving closer to our direction. Waterloo's program currently comprises separate departments of Health Studies and Gerontology, Kinesiology, and Recreation and Leisure Studies, but the Faculty of Applied Health Sciences will focus on four areas of specialization: Health Promotion, Health Administration, Environmental Health, and Biomedical (<http://www.ahs.uwaterloo.ca>). The impressive success of Applied Health Sciences at Waterloo, with about 1400 full time students enrolled (half of them in the Co-op stream) attests to the growing demand in this field, and is consistent with the rationale for our proposal.

The University of Toronto has a broad spectrum of undergraduate programs based on the medical model - essentially extensions of programs that exist in the Medical School - but these have minimum overlap with the current proposal. A nascent program in Public Health Sciences has similar core areas to ours, i.e. Biostatistics, Epidemiology, Social/Behavioral Sciences and Health Promotion, Occupational and Environmental Health, as well as Health Services and Policy. At the time of writing, it exists as a "vision" within the Faculty of Medicine (<http://www.phs.utoronto.ca>), but there can be little doubt of its imminent reality and of its success. Both of these trends confirm the conclusion that the current proposal is a timely step in the right direction.

Within the province of British Columbia, no comparable programs exist. Health related programs with very different focus exist at all Universities, including SFU (Kinesiology, Psychology). The University of Victoria offers a four-year Bachelor of Arts Degree (Major in Recreation and Health Education, available only as co-operative education) that prepares students with knowledge and skills related to the study and practice of community recreation and health promotion/education. It also offers a BSc in Health Information Science, again a far more specialized program than proposed here.

Within the BC college systems, several focused Bachelors degrees are offered by BCIT (e.g. Public Health Inspection, Health Care Quality Management, Occupational Health and Safety). This and other institutions offer also various Diploma or associate degree programs in health related areas (e.g., Continuing health care administration diploma, Malaspina; Health Information Service Diploma, Douglas; for a complete listing, see <http://www.educationplanner.bc.ca/>). As evident from these examples, the BA proposed here is unique, and there is no indication that any other institution will soon mount such a program. On the other hand, students trained by the colleges in relevant aspects of health may seek to continue their education in our program, and therefore we will work actively toward block-transfer agreements.

### 3.2 SFU's strategic advantage

SFU has the substantial advantage of a new interdisciplinary Faculty, with the freedom to conceive programs *de novo*, starting with no antecedents except the current trajectory in the field of health, and an innovative vision for the future. The current proposal encapsulates such a vision in concrete terms. We have chosen a degree structure that will give Simon Fraser University a competitive advantage over degrees constrained by a medical school context, and those which for historical reasons are driven by their framing in the context of Kinesiology, Gerontology, Recreation, or Nursing. The proposed emphasis will complement the educational strengths of SFU in physiological systems and individual health (Kinesiology), in molecular and cellular determinants of health (MBB and Biological Sciences), and in social and cultural aspects (Sociology and Anthropology, Geography, Gerontology, Psychology).

If this degree moves forward with the expected speed, we will be unique in the province, and we are convinced that our program can compete effectively with other health-related programs offered in BC and beyond.

### 3.3 Anticipated labour market demand

In earlier surveys related to our graduate programs, we identified strong interest among undergraduate students in courses and careers related to health promotion and the determinants of health. This parallels strong historical interest at SFU in health and nutrition courses in Kinesiology. Graduates of the BA program will be competitive in admission to graduate programs that take interdisciplinary approaches, including the M.Sc. in Population and Public Health, but they will also have skills of immediate interest to employers across the health system.

Graduates will possess employable skills such as group problem-solving, medical statistical and computational skills, as well as communication and organizational skills, honed within the practical framework of knowledge and concepts in epidemiology, human biology, determinants of health, and evidence-based inference in health decision-making.

Those desiring positions of leadership in health will likely use the degree as a stepping stone to further education such as postgraduate education - Masters and Ph.D. programs in epidemiology, sociology, population or public health, health planning, health economics, health administration, or professional development programs.

Immediate opportunities for graduates will be largely mid-level, reporting to administrators and decision makers. Potential employers with needs at this level include the following:

**Research agencies:** BC Cancer Research Centre, BC Cancer Foundation, Heart and Stroke Canada, Canadian Cancer Society

**Health agencies and organizations:** Canadian Public Health Association, Canadian Multicultural Health Promotion Society, and private health research foundations such as the McCreary Centre. Environmental health assessment organizations, advocacy groups for human health, and other private foundations are also potential employers.

**The pharmaceutical and medical equipment industries** employ representatives who can comment knowledgeably about their products.

**Hospitals and regional health authorities** need administrative assistants and project coordinators at a variety of levels and projects.

**Governmental health agencies** with parallel needs extend well beyond Health Canada and the Population and Public Health Branch of Health Canada. Possible examples include positions in Regional Health Boards, BC Cancer Control Agency, provincial and federal authorities, including CIDA, Centres for Disease Control, and international agencies from WHO to the World Bank.

We anticipate that the demand for these skills will exceed the demand for many other bachelor programs at SFU. Once the program is established, joint majors, double majors, and co-operative programs will be developed with existing programs such as Business, Communication Studies, Kinesiology, Gerontology, Geography (GIS), Statistics and Actuarial Sciences, Women's Studies, and other programs, including SFU's writing / communication and publishing programs. Each of these will provide a unique set of skills, sought after in specific employment niches.

## 4 FACULTY AND OTHER RESOURCES

### 4.1 Program implementation

In addition to the BA program proposed here, the Faculty of Health Sciences will introduce programs which will have a total enrolment in Health Sciences courses of 800 FTEs, with 100 FTEs in graduate and 400 FTEs in undergraduate programs in the areas of Population and Public Health and 50 FTEs in graduate and 250 FTEs in undergraduate programs in the Health Sciences. The following tables detail the specific delivery targets for these programs.

**Table 4.1: FTE STUDENT MAJORS in HEALTH SCIENCES**

| <u>Year</u> | <u>BA</u> | <u>BSc</u>   | <u>Total UG</u> | <u>Grads</u> |
|-------------|-----------|--------------|-----------------|--------------|
| 2005/06     |           |              |                 | 30           |
| 2006/07     | 192       |              | 192             | 60           |
| 2007/08     | 354       | 115          | 469             | 90           |
| 2008/09     | 501       | 213          | 714             | 120          |
| 2009/10     | 640       | 300          | 940             | 150          |
| 2010/11     | 640       | 384          | 1,024           | 150          |
| 2011/12     |           | steady state |                 |              |

**Table 4.2: COURSE FTE  
DELIVERED IN HEALTH SCIENCES**

| <u>Year</u> | <u>To HS Majors</u> | <u>Service to<br/>Non-HS<br/>Majors</u> | <u>HS Grads</u> | <u>Total</u> |
|-------------|---------------------|-----------------------------------------|-----------------|--------------|
| 2005/06     |                     |                                         | 30              | 30           |
| 2006/07     | 86                  | 100                                     | 60              | 246          |
| 2007/08     | 199                 | 100                                     | 90              | 389          |
| 2008/09     | 315                 | 160                                     | 120             | 595          |
| 2009/10     | 440                 | 160                                     | 150             | 750          |
| 2010/11     | 490                 | 160                                     | 150             | 800          |
| 2011/12     |                     | steady-state                            |                 |              |

**Table 4.3: COURSE FTE  
DELIVERED TO HSCI MAJORS**

| <u>Year</u> | <u>From other faculties</u><br><u>To HS Majors</u> |
|-------------|----------------------------------------------------|
| 2005/06     | 0                                                  |
| 2006/07     | 106                                                |
| 2007/08     | 270                                                |
| 2008/09     | 399                                                |
| 2009/10     | 500                                                |
| 2010/11     | 534                                                |
| 2011/12     | steady state                                       |

## **4.2 Personnel**

### ***Number of faculty required, qualifications, new positions***

Concomitant with the total enrolment increases, the faculty will fill a total of approximately 40 CFL positions, including several research chairs, the Dean and the Associate Deans. Normally, all faculty will teach in both graduate and undergraduate programs, with a workload following policy A30.03. The resulting student FTE to filled FTE CFL is expected to be similar to that in the Faculty of Applied Sciences: 21 (2003/04).

The Faculty has identified 11 faculty members, four of whom have already been at SFU (Dean, two Associate Deans, and 1 CRC). Searches for seven additional faculty members have been successfully completed. All of these have expertise in the areas of the proposed undergraduate curriculum, and will teach lower and upper division U/G HSCI courses, as well as graduate courses. In the coming academic year, searches for additional seven faculty members will be initiated, in areas selected to serve the BA program as well as the proposed Master of Global Health. The detailed areas of expertise will be decided in consultation with the new faculty members.

While the overall faculty complement will eventually be sufficient to teach the courses proposed here plus a substantial number of additional electives, other instructors may be needed in the initial phase of the program. These will be recruited from associate members (course buy-out from other departments), or experts from outside the university hired as sessional or limited-term instructors.

### ***Teaching Assistants***

The courses proposed here all have tutorial or laboratory sections that will be supported by teaching assistants (TA). For most courses, TA needs can be estimated by the TSSU agreement (e.g., tutorial size 18 students; one hr prep time etc.) but in special cases faculty members may also teach tutorial or laboratory sections. A budget sufficient to meet these needs will be allocated by the FHS.

### ***Teaching support staff***

Positions for a full-time undergraduate secretary as well as an undergraduate advisor/program coordinator have been created.

## **4.3 Library**

The Library has estimated the additional cost of the library resources for all HSCI courses. The faculty has committed the total onetime funds of \$78,550, and ongoing annual contributions of \$49,550, as required.

## **4.4 Space**

The new Health Sciences building, announced in March 2005, will provide space to house the entire Faculty of Health Sciences. The building will contain the necessary office and lab space for faculty, teaching assistants, as well as undergraduate teaching and computer labs.

Prior to anticipated completion of the Health Sciences building in the fall of 2007, temporary space has been allocated to FHS in the West Mall complex. Additional lab space in the West Mall complex has been promised, as other departments vacate this space (Business Administration, 2005; Criminology, 2006).

## **APPENDIX 1 - COURSE DESCRIPTIONS**

### ***HSCI 110-3 Perceptions and misperceptions of common health risks***

Factors influencing individual health risk perception, and the causes and consequences of misperception. An introduction to health risk assessment, management, and communication through the case-studies.

### ***HSCI 120-3 Introduction to human sexuality and sexual behaviour***

An evidence-based introduction to human sexual function and dysfunction. Normal psychosexual development in a range of sexual behaviors. The effects of culture on sexual attitudes, behavior, and gender identity.

### ***HSCI-130-3 Foundations of epidemiology***

A study of disease distribution across human populations, and of factors which influence susceptibility to, and prevalence of, diseases. The methodologies of epidemiology, epidemiological inference, and the use of biochemical, clinical, and statistical data.

### ***HSCI 140-3 Complementary and alternative medicine***

A critical, science- and evidence-based examination of integrative, complementary, and alternative approaches to health and disease.

### ***HSCI 150-3 Current topics in human sexuality***

Current issues and controversies and their impact on the sexual behaviour and well-being of individuals at different ages and circumstances. Topics include sexually-transmitted diseases and AIDS, sexual orientation and cultural differences in tolerance, abuses of power, or sexually-explicit media.

### ***HSCI-160-3 Global perspectives on health***

An introduction to the differences in health and health services among the nations of the globe. Vulnerable sub-populations worldwide and their special health needs. Future worldwide health risks, their economic and health consequences.

### ***HSCI 210-4 Cancer***

An integrated survey of cancers. Their causes, pathology, and treatments. Genetic and environmental risk factors, screening and preventative measures to reduce occurrence and mortality of cancer.

### ***HSCI 211-4 Cardiovascular disease, diabetes, obesity***

An integrated survey of cardiovascular diseases, diabetes, and obesity. Causes, pathology, and treatments. Lifestyle, dietary and genetic risk factors, preventative measures to reduce morbidity and mortality.

### ***HSCI 212 Infectious diseases***

An integrated survey of infectious diseases and their social and economic causes and consequences. Infectious agents, including bacteria, protozoa, fungi, and viruses – how they spread, how they work, and how they can be stopped. Surveillance, prevention, and management of infectious diseases and epidemics.

### ***HSCI 213-4 The environment and health***

An integrated survey of environmental hazards to human health, their social and economic causes and consequences. Environmental risks in the workplace and the wider external environment. The impact of industrialization in rural and urban communities. Methodological approaches to their detection, assessment, management, and mitigation.

### ***HSCI 301-3 Foundations of health communication and health promotion***

The role of health communication and education in the improvement of health and mitigation of disease. Strategies and methodology for public education regarding health maintenance, and preventive measures. New approaches in health promotion – legislation and the use of print media and web technology in health communication.

### ***HSCI 302-3 Evidence-based decision making in health***

Decision-making based on proven data. Effective criteria for rigorously evaluating health information and practices. Evaluation of health decisions influenced by political, commercial, or cultural factors.

### ***HSCI 305-3 The Canadian Health System***

A comparative analysis of the Canadian health care and delivery systems. Organizational principles, health resources, access to care, service utilization, health care planning, and health promotion strategies. Societal and political issues that affect the Canadian health system.

### ***HSCI 306-3 Principles of health economics***

A study of micro- and macro-economic concepts used in the pursuit of better health and health care. Choices within limited resources, economic evaluation of efficiency, equity, elasticity of health systems, policy and regulatory issues.

### ***HSCI 320-3 Health technology - Laboratory methods***

An integrated study of contemporary laboratory and investigative methodologies in use in health assessment, Indications, and misuse of chemical, immunological, microbiological, and molecular biological tests. Scientific and financial criteria for usefulness in screening for disease and risk factors.

### ***HSCI 321-3 Health technology - Imaging***

The investigative use of radiological and other medical imaging techniques, and their use and misuse. Description, indications, and misuse of X-ray, CT, MRI, PET, ultrasonic, and newly emerging techniques. Scientific and economic criteria of usefulness in screening for disease and risk factors.

### ***HSCI 330-4 Exploratory strategies in epidemiology -***

The concepts and measurements of human population dynamics in epidemiological inference. Identification of causes and prevalence of disease. Demographic and molecular methodology to assess the determinants of health and disease.

### ***HSCI 401-3 Behaviour modification in health promotion***

Behaviour modification strategies and their applications in risk reduction, health promotion, and disease prevention. New approaches in behaviour modification - new media and new technology.

### ***HSCI 420-4 Bioinformatics and health information systems***

A broad study of computational tools for all aspects of the field of health. Topics include health information systems, databases, GIS, as well as the acquisition and management of molecular data in health risk assessment and mitigation..

### ***HSCI 421-4 Health survey methods***

The utility of surveys in health research and practice. Strategies for design, administration, and analysis of data from qualitative and quantitative health surveys. Practical tools for exploratory analysis. Problems and limitations, and how to avoid them.

### ***HSCI 422-3 Diffusion pathways in the spread of disease***

The dynamics of disease distribution processes, and the mechanisms and pathways by which diseases spread. Representation and analysis by computational and cartographic methods.

### ***HSCI 423-3 Health policy in disease mitigation and public health***

An overview of the tools of policy analysis as the means of shaping health care policy and the health of the public. The application of philosophical, political, and economic concepts to health policy debates and the improvement of health care delivery.

### ***HSCI 424-4 Strategic applications of GIS in health***

The use of mapping-strategies and geographic information systems in identifying disease patterns and health risks. The relation of health problems to the distribution of markers of exposure, susceptibility, and health impact, and resulting risk management strategies for intervention, mitigation, and disease prevention.

***HSCI 430-3 Health problems of vulnerable populations***

A study of the relationships between socioeconomic conditions and health in vulnerable populations. Impact of living conditions and access to health services on health risks, mortality, and morbidity, and strategies for better outcomes in disadvantaged communities.

***HSCI 471-3 Special topics in health sciences I***

Selected topics in areas not currently offered within the undergraduate course offerings.

***HSCI 472-3 Special topics in health sciences II***

Selected topics in areas not currently offered within the undergraduate course offerings.

***HSCI 473-3 Special topics in health sciences III***

Selected topics in areas not currently offered within the undergraduate course offerings.

***HSCI 488-3 Directed studies in health sciences***

Independent studies on topics selected in consultation with the supervising instructor. A student will be permitted to enroll in this course only if she or he obtains the prior written agreement from the instructor.

***HSCI 489-3 Directed research in health sciences***

Independent research on topics selected in consultation with the supervising faculty member. A student will be permitted to enroll in this course only if she or he obtains the prior written agreement of a professor to act as research advisor.

***HSCI 490-5 Research proposal***

Research proposal for the Honours thesis. HSCI 490, 491, and 492 together form the Honours thesis. Limited to Honours students upon written agreement of the faculty supervisor.

***HSCI 491-5 Independent research***

Research for the Honours thesis. HSCI 490, 491, and 492 together form the Honours thesis. Limited to Honours students upon written agreement of the faculty supervisor. Pre- or co-requisite HSCI 490.

***HSCI 492-5 Research thesis***

Independent honours research thesis. HSCI 490, 491, and 492 together form the Honours thesis. Limited to Honours students upon written agreement of the faculty supervisor.

**SIMON FRASER UNIVERSITY**  
**MEMORANDUM**

**To:** Senate

**From:** C. MacKenzie, Chair *CM*  
Senate Committee on Undergraduate Studies

**Subject:** Faculty of Health Sciences – new HSCI courses  
(SCUS Reference: SCUS 05-19)

**Date:** October 5, 2005

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Acting under delegated authority at its September 13 and September 27, 2005 meetings, SCUS approved the following new Health Sciences courses:

- HSCI 210-4 Cancer
- HSCI 211-4 Cardiovascular Disease, Diabetes, Obesity
- HSCI 212-4 Infectious Diseases
- HSCI 213-4 Environmental Impact on Human Health
- HSCI 301-3 Foundations of Health Promotion and Health Communication
- HSCI 302-3 Evidence-based Decision Making in Health
- HSCI 305-3 The Canadian Health System
- HSCI 306-3 Principles of Health Economics
- HSCI 320-3 Health Technology – Laboratory Methods
- HSCI 321-3 Health Technology – Imaging
- HSCI 330-3 Exploratory Strategies in Epidemiology
- HSCI 401-3 Behaviour Modification in Health Promotion
- HSCI 420-3 Computers in Health and Health Information Systems
- HSCI 421-4 Health Survey Methods
- HSCI 422-4 Diffusion Pathways in the Spread of Disease
- HSCI 423-3 Health Policy in Disease Mitigation and Public Health
- HSCI 424-4 Strategic Applications of GIS in Health
- HSCI 430-3 Health Problems of Vulnerable Populations
- HSCI 471-3 Special Topics in Health Sciences I
- HSCI 472-3 Special Topics in Health Sciences II
- HSCI 473-3 Special Topics in Health Sciences III
- HSCI 488-3 Directed Studies in Health Sciences
- HSCI 489-3 Directed Research in Health Sciences
- HSCI 490-5 Research Proposal
- HSCI 491-5 Independent Research
- HSCI 492-5 Honours Research Thesis

**Any Senator wishing to consult detailed information with respect to the new courses should contact Bobbie Grant, Senate Assistant, at 604 291-3168 or email [bgrant@sfu.ca](mailto:bgrant@sfu.ca)**