



UNIVERSITY OF TORONTO
DALLA LANA SCHOOL OF PUBLIC HEALTH

Self-Study for External Review of the Dalla Lana School of Public Health

December 1, 2010

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Table of Contents

LIST OF TABLES	
LIST OF APPENDICES	
SECTION 1: BACKGROUND	1
A. HISTORICAL OVERVIEW	1
B. ESTABLISHMENT OF THE DALLA LANA SCHOOL OF PUBLIC HEALTH (DLSPH)	1
<i>Organizational Divisions</i>	2
<i>Faculty [Section 2]</i>	2
<i>Degree & Other Educational Programs [Section 3]</i>	2
<i>Research & Scholarship [Section 4]</i>	3
<i>Linkages & Partnerships [Section 5]</i>	3
C. THE GOVERNANCE MODEL	3
<i>Leadership, Management, and Administration</i>	4
D. STRENGTHS & CHALLENGES	5
SECTION 2: FACULTY & RESOURCES	6
A. OVERVIEW OF FACULTY	6
B. FUTURE CHALLENGES	18
SECTION 3: EDUCATION	19
A. FACTS & FIGURES	19
B. DEGREE PROGRAMS	19
<i>Doctoral Degree Program (PhD)</i>	19
<i>Master of Public Health (MPH) Program</i>	31
<i>Master of Science in Community Health (MScCH)</i>	47
C. OTHER EDUCATIONAL ACTIVITIES	51
<i>Royal College of Physicians and Surgeons Specialty Training Programs In Community and Occupational Medicine</i>	51
<i>Undergraduate Medical Education – Courses in Public Health</i>	55
<i>Diploma in Industrial Health</i>	57
<i>Undergraduate Arts & Science Programs</i>	57
D. INNOVATIONS & INITIATIVES IN EDUCATION	58
<i>Collaborative Graduate Programs (Non-degree granting programs)</i>	58
<i>Strategic Training in Health Research (STIHR) Grants</i>	60
<i>Centre for Critical Qualitative Research (CQ)</i>	62
<i>Global Health Education Institute</i>	63
E. STUDENT EXPERIENCE AND FEEDBACK	65
<i>Canadian Graduate and Professional Student Survey</i>	65
<i>Student Report</i>	68
SECTION 4: RESEARCH & SCHOLARSHIP	77
A. FACTS & FIGURES	77
B. OVERALL RESEARCH OBJECTIVE & GUIDING PRINCIPLES	77
C. CURRENT RESEARCH THEMES	78

D. RESEARCH UNITS	80
E. LINKAGES WITH DEPARTMENTS WITHIN THE FACULTY OF MEDICINE, OTHER DEPARTMENTS IN THE UNIVERSITY OF TORONTO, ONTARIO GOVERNMENT AGENCIES AND PUBLIC HEALTH UNITS.....	81
F. STRENGTHS & CHALLENGES.....	83
SECTION 5: LINKAGES & PARTNERSHIPS.....	84
A. INTERNAL RELATIONSHIPS.....	84
B. EXTERNAL RELATIONSHIPS	84
<i>Affiliated Hospitals & Research Institutes.....</i>	<i>84</i>
<i>Provincial Education, Health Sector Organizations and Provincial Government</i>	<i>85</i>
<i>Global and International Affiliations</i>	<i>85</i>
SECTION 6: CONCLUDING REMARKS & FUTURE DIRECTIONS.....	86

LIST OF TABLES

TABLE 1:	Core Faculty by Division, Rank & Appointment Status	7
TABLE 2:	Core Faculty Teaching, Supervisory & Academic Administrative Roles, 2009-10	8
TABLE 3:	DLSPH Teaching by Courses Offered, 2009 – 2010	11
TABLE 4:	Home Institutions of Status Faculty	17
TABLE 5:	Financial Support for PhD Students	26
TABLE 6:	External Awards from Agencies held by PhD Students in 2008/09	26
TABLE 7:	PhD Enrolment by Specialization (Fall)	27
TABLE 8:	PhD Total Enrolment, Withdrawals & Graduations by Year	27
TABLE 9:	Mean (range) and Median Times-to-Completion of PhD Program	28
TABLE 10:	Applications, offers, registrations (2005-2009)	33
TABLE 11:	Full time / Part time Enrolment	36
TABLE 12:	Full Time MPH Enrolment, Transfers, Withdrawals & Graduations by Year ...	37
TABLE 13:	Part time MPH Total Enrolment, Transfers, Withdrawals & Graduations by Year	37
TABLE 14:	Mean (range) and Median Times to Completion of M.H.Sc./M.P.H.	38
TABLE 15:	MSc Biostats Full time + Part time Enrolment (Headcount)	44
TABLE 16:	Full time Master’s Enrolment, Transfers, Withdrawals & Graduations by Year	44
TABLE 17:	Part time Master’s Enrolment, Transfers, Withdrawals & Graduations by Year	45
TABLE 18:	Mean (range) and Median Times to Completion of MSc program in Years	45
TABLE 19:	DLSPH - Major Research Themes Identified by Faculty	79

LIST OF APPENDICES

- **APPENDIX 1:** LIST OF FACULTY
- **APPENDIX 2:** ENROLMENT DATA FOR ALL COURSE, 2005-06 THROUGH 2009-10
- **APPENDIX 3:** COURSE REQUIREMENTS FOR EACH PHD SPECIALIZATION
- **APPENDIX 4:** FUNDING POLICY FOR PHD STUDENTS IN DLSPH, 2010/11
- **APPENDIX 5:** DOCTORAL GRADUAL STUDENT-SUPERVISOR AGREEMENT
- **APPENDIX 6:** PHD GRADUATES AND THESIS TITLES, 2005-2010
- **APPENDIX 7:** MPH OBJECTIVES AND COMPETENCIES FOR EACH SPECIALIZATION
- **APPENDIX 8:** MPH PROGRAM REQUIREMENTS BY SPECIALIZATION
- **APPENDIX 9:** MSCCH PROGRAM DETAILS FOR EACH SPECIALIZATION
- **APPENDIX 10:** OCCUPATIONAL MEDICINE RESIDENCY PROGRAM
- **APPENDIX 11:** BRIEF DESCRIPTION OF SELECTION COLLABORATIVE PROGRAMS
- **APPENDIX 12:** FACULTY BY MAJOR AREAS OF RESEARCH

SECTION 1: BACKGROUND

A. HISTORICAL OVERVIEW

The University of Toronto (UofT) has a rich tradition of preparing leaders in public health practice and research. The first generation of the School emerged in 1925-27 during the public health movement that led to the Rockefeller Foundation supporting three new public health schools at Harvard, Johns Hopkins and the School of Hygiene at the University of Toronto.

The School of Hygiene was the first institution in Canada to offer comprehensive training for public health researchers and professionals, originally largely through Diploma programs. Until 1975, the School of Hygiene remained the major focus of public health and academic training in English-speaking Canada. In 1975, the School of Hygiene was disbanded, with most of the faculty transferred to the Faculty of Medicine to a new Division of Community Health with three departments: Behavioural Science, Preventive Medicine & Biostatistics and Health Administration, together with a semi-autonomous Occupational & Environmental Health Unit.

In 1978, the Division of Community Health established the Master of Health Science (MHSc) degree with four fields: Community Health & Epidemiology, Health Administration, Health Promotion, and Occupational & Environmental Health to replace former Diploma programs offered by the School of Hygiene. Subsequently, an MSc/PhD program was also introduced.

In 1997 the Department of Health Administration became a separate graduate unit and in 2001 was renamed the Department of Health Policy, Management & Evaluation (HPME). In 1997, the Department of Preventive Medicine & Biostatistics (which now included the Occupational & Environmental Health Unit) merged with the Department of Behavioural Science to create the Department of Public Health Sciences.

B. ESTABLISHMENT OF THE DALLA LANA SCHOOL OF PUBLIC HEALTH (DLSPH)

The launch of the School of Public Health followed consultation with key stakeholders on- and off-campus, including affiliated institutions and government ministries, who unanimously identified a School of Public Health as necessary to integrate academic public health at the University of Toronto with the needs of public health practice at the regional, provincial, national and global level. It was envisaged that the School would provide a dynamic academic centre within the University to better coordinate its substantial existing strengths and to add the distinctive value of a dedicated academic public health centre. Further, it would align with the renewal of public health post Walkerton (an emergency caused by the breakdown of water safety monitoring in the district of Walkerton) and SARS in Ontario, in Canada and globally. Working with public health organizations, the School was expected to shape professional and interprofessional public health policy and practice.

A proposal to establish a School of Public Health was approved by the University of Toronto Governing Council in 2007. The Department of Public Health Sciences formed the core of the new DLSPH. Following the departure of the long-time Chair of the Department of Public Health Sciences, departmental leadership was held by two interim Chairs (2006-2008) until 2008 when the inaugural Director of the School of Public Health was named. The search committee had successfully recruited Professor Jack Mandel (previously Chair of the Department of Epidemiology at Emory University). Shortly thereafter, the University of Toronto received a landmark donation from Paul and Alessandra

Dalla Lana to name the School of Public Health. The Dalla Lana School of Public Health was officially launched on April 30, 2008. The recent Dalla Lana donation has allowed for the recruitment of three endowed chair positions (see page 18) as well as the provision of 24 awards for the support of professional masters students.

In 2009, the MHSc program, offered since 1978, was renamed Master of Public Health (MPH), the internationally recognized public health degree. In the summer of 2010, Dr. Mandel left the School for personal reasons. The current Interim Director of the School, Professor Louise Lemieux-Charles is also Chair of the Department of Health Policy, Management and Evaluation.

ORGANIZATIONAL DIVISIONS

The DLSPH is currently organized into five divisions [see insert] with two new divisions under development. These divisions are discipline-based groupings that provide structure to the School. (They are, however, informal with no constitutional authority or budget.) The School has also inherited the legacy of being a national leader in preparing physicians for Royal College Fellowships in Community and Occupational Medicine and medical graduates with strong public health competencies as well as providing Continuing Professional Development for public health professionals through, for example, summer institutes and schools.

DLSPH: Divisions
• Biostatistics
• Epidemiology
• Social & Behavioural Science
• Interdisciplinary
• Occupational & Environmental Health

FACULTY [SECTION 2]

The DLSPH currently (July 2010) has 23 tenured/tenure stream faculty, 28 contractually-limited term appointed (CLTA) faculty, 178 status-only faculty, 14 adjunct faculty and 73 faculty cross-appointed from other departments in the University. Faculty members have varied backgrounds spanning humanities, social and behavioural sciences, physical and life sciences.

DEGREE & OTHER EDUCATIONAL PROGRAMS [SECTION 3]

The new School has 385 graduate students and offers both masters and doctoral programs. The **doctoral** training program (PhD) aims to prepare students for independent research and academic careers in the Public Health disciplines. There are currently three fields of study in the PhD program: Biostatistics; Epidemiology; and Social & Behavioural Health Sciences. At the Masters level, the School offers the **Master of Public Health (MPH)**, formerly the MHSc, the **Master of Science (Biostatistics)** and the **Master of Science in Community Health (MScCH)**.

- The **Master of Public Health (MPH)** degree is a 10 credit degree program designed to prepare public health practitioners, educators and researchers for careers in public health. The MPH program is offered in Epidemiology, Community Nutrition, Occupational and Environmental Health, Health Promotion, and Family and Community Medicine. The Community Nutrition field is offered in collaboration with the Department of Nutritional Sciences and the Family and Community Medicine field is offered in collaboration with the Department of Family and Community Medicine.
- The **Master of Science (Biostatistics)** is a five credit degree program that involves the development and application of statistical methodology to further understanding of data arising in public health, the health sciences and biology.

- The **Master of Science in Community Health (MScCH)** is a five credit degree program that is geared to applicants with very specific career development goals that are relevant to practicing health professionals. Five specializations are currently offered: Addictions and Mental Health; Family and Community Medicine; Health Practitioner Teacher Education; Occupational Health Care; and Wound Prevention and Care. The Family and Community Medicine and Health Practitioner Teacher Education specializations are offered in collaboration with the Department of Family and Community Medicine.

The DLSPH is also the academic home for the Community Medicine Specialty Training Program and the two-year Occupational Medicine Subspecialty program of the Royal College of Physicians and Surgeons. In addition, the School is engaged in the Undergraduate Medical program (M.D.) through the Determinants of Community Health course (DOCH) which runs through the first three years of the MD curriculum. There are approximately 250 students in each year of the MD program.

Faculty at the DLSPH are also actively engaged in teaching undergraduate courses in the Faculty of Arts & Science and are exploring teaching other courses which would include introductory courses in public health and epidemiology.

RESEARCH & SCHOLARSHIP [SECTION 4]

Research and scholarship are foundational to public health practice and education. A primary goal of the DLSPH is to become a ‘go-to’ site of knowledge, expertise and critical thinking in public health at the national and international level. The School has made significant progress toward positioning itself as a leading locus of knowledge production in public health sciences. In 2008/09, total research funding in the DLSPH was in excess of \$30 million. Twelve research themes were identified by the 85 faculty that provided information on their research. In the last 5 years 411 projects have been initiated or completed with total funding of \$132,510,012. The establishment of critical partnership and linkages is of fundamental importance for the development and sustained excellence of research and scholarship within DLSPH.

LINKAGES & PARTNERSHIPS [SECTION 5]

There has been a long history of collaboration and partnership between Public Health, the Faculties of Nursing and Dentistry and the Department of HPME. These partners were actively involved in the development of the proposal for the establishment of a School of Public Health at the University of Toronto. A major strength of the DLSPH lies in the large complement of faculty who are employed by key collaborating institutions such as Ontario Agency for Health Protection and Promotion, Institute of Work and Health, Cancer Care Ontario, Institute of Clinical Evaluation Sciences, and in many of the affiliated hospitals in the Greater Toronto Area (GTA). The majority of these individuals hold primary academic appointments in the DLSPH, giving them a formal link to the University. Faculty are also affiliated with or work closely with key public health agencies in the Greater Toronto Area, including Toronto Public Health (TPH) particularly in training Community Medicine specialists, MPH epidemiology students and public health oriented doctoral students. The faculty play an important role in shaping and developing the provincial public health capacity in both practice and research.

C. THE GOVERNANCE MODEL

The DLSPH is presently located within the Faculty of Medicine and is expected to either become a school with interdivisional oversight (a committee of Deans) or a single department Faculty.

Prior to the founding of the DLSPH, the Department of Public Health Sciences was governed by a Chair. An Associate Chair was appointed to assist the Chair. The role of the Associate Chair was to oversee, at a high level, the educational mandate of the department - to provide leadership in program development and in setting academic policy. This included leading curriculum renewal processes - both planning and implementation. The Associate Chair was also responsible for appointments of faculty within the School of Graduate Studies (SGS) and chairing the departmental Curriculum Committee. The Graduate Coordinator was the faculty member responsible for academic and student matters from admission through to graduation, ensuring that the programs adhered to the SGS and departmental policies and procedures and, with the assistance of a team of graduate administrators, the day to day operation of the graduate department. Within each program, for each specialization, a designated Program Director had responsibility for developing program specific requirements, selecting students for admission, monitoring and facilitating student progress and student counseling.

In the founding of the School and with the advent of a new Director, a divisional structure was created and the positions of Program Director were eliminated. The positions of Associate Director Education and Associate Director, Research were created. Within the Divisions, responsibility for each of the programs became that of the Division Head (epidemiology and biostatistics) or that of those individuals who had formerly been program directors and were now designated *program leads* with reporting lines to the Division Head. Until the Constitution is approved, the Director continues to report to the Provost for academic matters though all curriculum changes continue to go through the Faculty of Medicine's Faculty Council for approval before going through the different levels of university governance. The Director also reports to the Dean of Medicine for operational administrative matters and the Faculty of Medicine provides administrative support in the areas of human resources, finance and development.

LEADERSHIP, MANAGEMENT, AND ADMINISTRATION

The Director is supported by an Executive committee composed of the Division Heads and Associate Directors and it meets on a monthly basis. Each Division is responsible for reviewing admissions and addressing issues specific to its Division through both a faculty and admissions committee. At the School level, a Curriculum Committee chaired until recently by the Associate Director, Education and supported by the Graduate Affairs Administrator in the Graduate Office reviews proposed changes to the curriculum and establishes educational policies and procedures. Its membership includes representation from the Divisions and students. Until recently, faculty meetings have been held on a quarterly basis and/or twice a year and the Director met once per year with students in town hall meetings.

Resources allocated to the School include a base budget and revenues and recoveries from increased graduate enrolment, faculty salary recoveries from research contracts and research awards. The Dalla Lana endowment has supported the hiring of three new faculty research chairs as well as student support. The School budget is administered centrally and as noted above, there are no monies allocated to the Divisions. There is a 15 administrative staff complement which supports the mission of the School. This includes a Business Manager responsible for the financial and administrative functions of the School. One year ago four staff members were decentralized to provide support to the divisions.

A majority of the activity over the past two years has been devoted to the recruitment of new faculty and endowed chairs. These positions either replaced recent retirements and/or were supported by the Dalla Lana endowment. To date there have been six new hires including three in the Dalla Lana Chair positions of Public Health Policy, Disease Control and Global Health. Two positions remain unfilled (Biostatistics, Occupational and Environmental Health).

D. STRENGTHS & CHALLENGES

Strengths

In 2005, the Department of Public Health Sciences, Faculty of Nursing and Department of Health Policy, Management and Evaluation moved to a newly renovated building located at 155 College Street, known as the Health Sciences Building. The new facilities have provided each party with an increase in space both for teaching and its research activities.

A major strength of the School is the contribution made to its educational and research mission by many status only, cross-appointed and adjunct faculty. This is exemplified by the fact that the head of the Division of Epidemiology is a former status only faculty member, now seconded for a major part of her time to the School from Cancer Care Ontario.

Challenges

Since the development of the School there has not been the structure nor the opportunity to develop an overarching vision. Much of the effort has been expended on the recruitment of new faculty and endowed chairs and administrative processes. There are multiple interests in the field of public health which are evident through the disciplines and areas of focus present in the school, these will need to be reflected in the development of a mission and vision for the School and its future direction. At the operational level, the divisional structure is in the process of being revised. The responsibilities of the Division Heads and of the Associate Director(s) need to be clearly articulated. In addition, a formal role for the new Graduate Coordinator, responsible for the leadership of the education programs is now under development. The role of Graduate Coordinator within the University of Toronto is usually held by a senior faculty member within the School of Graduate Studies.

SECTION 2: FACULTY & RESOURCES

A. OVERVIEW OF FACULTY

The School has among the largest concentration of academic population and public health researchers in Canada. Given the interdisciplinary nature of public health, faculty have varied backgrounds spanning humanities, social and behavioral sciences, physical and life sciences. As of July 2010 the DLSPH had 316 faculty. A complete list of all faculty, including academic rank, primary divisional affiliation and SGS appointment status is provided in Appendix 1. The CVs of faculty are available in electronic form (USB-stick).

Faculty Category	Number
Tenure / Tenure Stream	23
Contract – Term Appointment (CLTA)	28
Status-Only	178
Adjunct	14
Cross Appointed	73

Of the 316 faculty engaged at the Dalla Lana School of Public Health, 55 faculty can be described as core, that is they hold their primary appointment in the DLSPH and are tenured/tenure stream, CLTA, or others who are heavily involved in the education mission of the School. Table 1 describes these faculty members by division, rank and appointment status. Table 2 identifies these core faculty and provides a synopsis of the number of courses taught by each, their supervisory responsibilities and any additional academic administrative roles undertaken. The data is based on the annual 2009-10 Activity Report submitted by each faculty member in April 2010. In addition to these core faculty, there are a number of other *core* faculty, who are cross appointed to DLSPH - their primary appointments are in the Departments of Nutritional Science or Family and Community Medicine. These are the *core* faculty associated with Community Nutrition specialization of the MPH (Ann Fox, Melanie Morris, Valerie Tarasuk) or the Family & Community Medicine specializations of the MPH and the MScCH. These individuals include Helen Batty, Curtis Handford, Savithiri Ratnapalan, Peter Selby and Philip Ellison.

TABLE 1: Core Faculty by Division, Rank and Appointment Status					
		Tenure	Tenure Stream	CLTA	Other
Biostatistics	Professor	4			
	Associate Professor	2			
	Assistant Professor				
	Other				1
Epidemiology	Professor	2		5	
	Associate Professor	1	1	3	
	Assistant Professor		3	2	
	Other				
Occupational & Environmental Health	Professor			1	
	Associate Professor	1		3	
	Assistant Professor			3	
	Other			1	
Social & Behavioural Health Sciences	Professor	4		2	1
	Associate Professor	3		2	1
	Assistant Professor		2	3	
	Other				
Other (Global Health & Interdisciplinary)	Professor			1	
	Associate Professor			2	
	Assistant Professor			1	
	Other				1
TOTAL		17	6	28	4

TABLE 2: Core Faculty Teaching, Supervisory and Academic Administrative Roles 2009-10

Last Name	First Name	Academic Status	Academic Ranking	TEACHING				SUPERVISION					OTHER
				Instructor	Crs Director	Co-instructor	Guest Lecturer	Primary Supervisor	Co-primary supervisor	Thesis cttee	Examining Cttee	Practicum supervisor	
BIOSTATISTICS													
Corey	Paul	TENURE	Professor	2	3	0	1	0	1	2	1	1	Assoc. Dir. Education
Escobar	Michael	TENURE	Professor	2	0	0	0	0	1	4	0	0	
Lou	Wendy	TENURE	Professor	0	1	0	0	5	0	6	1	1	Division Director
Stafford	Jamie	TENURE	Professor	0	0	0	0	1	3	0	0	0	Chair, Stats (Faculty Arts&Sci)
Kustra	Rafal	TENURE	Associate Professor	1	0	1	0	3	1	1	0	0	
Sun	Lei	TENURE	Associate Professor	0	2	0	0	2	4	0	1	1	
Thorpe	Kevin	Senior RA	Senior-RA	0	2	1	1	0	0	2	0	0	
EPIDEMIOLOGY													
Badley	Elizabeth	TENURE	Professor	1	0	1	1	2	0	1	0	1	
Young	Kue	TENURE	Professor	0	2	0	0	4	0	1	0	0	
Cole	Donald	TENURE	Associate Professor	0	2	2	0	1	3	4	1	0	Collab.Prog Global Health
Fisman	David	TENSTR	Associate Professor	0	0	2	2	0	0	1	2	3	
Bondy	Susan	TENSTR	Assistant Professor	0	3	0	0	1	1	9	0	0	
Gagnon	France	TENSTR	Assistant Professor	0	1	0	0	0	0	0	1	2	
Gesink	Dionne	TENSTR	Assistant Professor	0	0	3	0	0	2	4	1	3	
Kreiger	Nancy	CLTA	Professor	0	0	1	2	2	0	0	0	0	Division Director
Mustard	Cameron	CLTA	Professor	1	0	0	0	1	2	0	0	0	
Narod	Steven	CLTA	Professor	0	0	1	0	0	0	1	0	0	
Remis	Robert	CLTA	Professor	0	0	1	0	1	0	0	0	0	
Cohen	Joanna	CLTA	Associate Professor	0	2	0	3	3	1	4	1	0	
Millson	Margaret	CLTA	Associate Professor	0	0	1	0	1	1	0	0	3	

Last Name	First Name	Academic Status	Academic Ranking	TEACHING				SUPERVISION					OTHER
				Instructor	Crs Director	Co-instructor	Guest Lecturer	Primary Supervisor	Co-primary supervisor	Thesis cttee	Examining Cttee	Practicum supervisor	
Scott	Fran	CLTA	Associate Professor	1	2	0	0	0	0	0	0	0	Program Director CMRP
Hall	Elizabeth	CLTA	Assistant Professor	1	0	0	0	0	0	0	0	0	
Kaufman	Pamela	CLTA	Assistant Professor	0	0	1	0	0	0	0	0	1	
Ferrence	Roberta	STATUS	Professor	0	0	1	1	3	0	0	0	0	
INTERDISCIPLINARY													
Harvey	Bart	CLTA	Associate Professor	0	0	0	0	1	0	1	0	0	Division Director
OCCUPATIONAL & ENVIRONMENTAL HEALTH													
Scott	James	TENURE	Associate Professor	1	0	0	3	5	0	0	0	0	
Holness	Linn	CLTA	Professor	0	1	0	1	1	0	3	1	1	Division Director
Hosein	Roland	CLTA	Associate Professor	0	2	0	0	0	0	0	0	0	
Sass-Kortsak	Andrea	CLTA	Associate Professor	0	1	2	1	0	0	0	0	0	Vice-Dean (FOM) & Interim Grad Coordinator
Silverman	Frances	CLTA	Associate Professor	0	0	0	0	2	3	0	0	0	
Bozek	Paul	CLTA	Assistant Professor	1	2	1	1	0	1	0	0	1	
House	Ron	CLTA	Assistant Professor	0	1	1	0	3	0	0	0	0	
Ceolin	Lissa	CLTA	Adjunct	0	1	0	2	0	0	0	0	0	Program lead MPH
SOCIAL & BEHAVIOURAL HEALTH SCIENCES													
Birn	Anne-Emanuelle	TENURE	Professor	1	0	0	0	5	2	0	0	0	
Calzavara	Liviana	TENURE	Professor	0	1	0	1	6	0	5	0	0	
Eakin	Joan	TENURE	Professor	1	0	1	1	6	0	1	3	0	
Ferris	Lorraine	TENURE	Professor	0	0	0	1	2	0	2	0	0	Assoc. Vice Provost
Robertson	Ann	TENURE	Professor	1	0	0	0	2	2	1	0	0	
Einstein	Gillian	TENURE	Associate Professor	0	0	0	0	0	0	0	0	0	2009-10 sabbatical leave

Last Name	First Name	Academic Status	Academic Ranking	TEACHING				SUPERVISION					OTHER
				Instructor	Crs Director	Co-instructor	Guest Lecturer	Primary Supervisor	Co-primary supervisor	Thesis cttee	Examining Cttee	Practicum supervisor	
McDonough	Peggy	TENURE	Associate Professor	2	0	0	0	6	0	3	0	0	
Poland	Blake	TENURE	Associate Professor	2	0	0	0	3	1	2	0	0	
Daar	Abdullah	CLTA	Professor	0	1	0	0	0	0	0	0	0	
Goodstadt	Michael	CLTA	Professor	1	3	1	0	0	0	1	0	12	Program Lead MPH
Abuelaish	Izzeldin	CLTA	Associate Professor	0	2	1	0	0	0	0	0	0	
Jackson	Suzanne	CLTA	Assistant Professor	1	0	3	0	0	0	0	1	7	
Myers	Ted	CLTA	Professor	0	1	0	1	5	2	0	1	0	Division Director
Schwartz	Robert	CLTA	Associate Professor	0	0	2	1	1	1	0	0	0	
Thorsteinsdottir	Halla	CLTA	Associate Professor	0	1	0	0	0	0	0	0	0	
Ahmad	Farah	CLTA	Assistant Professor	2	0	2	3	0	1	1	0	2	
Forman	Lisa	CLTA	Assistant Professor	0	0	0	3	0	0	1	0	0	
Jackson	Suzanne	CLTA	Assistant Professor	1	0	3	0	0	0	0	1	7	
Keelan	Jennifer	CLTA	Assistant Professor	1	0	1	0	0	0	1	0	1	
Norman	Cameron	CLTA	Assistant Professor	2	0	1	4	0	1	3	0	0	
Pakes	Barry	Adjunct	Adjunct	0	2	0	1	0	0	0	0	0	

TABLE 3: DLSPH Teaching by Courses Offered, 2009 – 2010

Course Code	Division	Course Title	Instructor 1	Instructor 2	Instructor 3	Other Instructors	Enrolment 2009 -10
CHL 5004H	PHS	Intro to Public Health	Joanna Cohen	Fran Scott			138
CHL 5101H	SBHS	Social Theory and Health	Peggy McDonough				11
CHL 5102H	SBHS	Social and Political Forces in Health Care	Ann Robertson				9
CHL 5109H	SBHS	Gender and Health	Janice DuMont	R. Mason			13
CHL 5110H	SBHS	Theory and Practice of Program Evaluation	Ted Myers				35
CHL 5115H	SBHS	Qualitative Analysis & Interpretation	Joan Eakin				9
CHL 5117H	SBHS	A Global Perspective on the Health of Women and Children	Akwatu Khenti	Catherine Chalin			18
CHL 5118H	SBHS	International Health, Human Rights and Peace-Building	Akwatu Khenti	Catherine Chalin			11
CHL 5120H	SBHS	Population Health Perspectives on Mental Health and Addictions	Not offered				12
CHL 5121H	SBHS	Genomics, Bioethics and Public Policy	Halla Thorsteinsdottir	Abdallah Daar			5
CHL 5122H	SBHS	Qualitative Research Practice	Ellen MacEachen	Joan Eakin			10
CHL 5201H	BIO	Intro to Biostatistics I	Kevin Thorpe	Nathan Taback	Eleanor Boyle		38
CHL 5202H	BIO	Biostatistics II	Kevin Thorpe	Rafal Kustra			33
CHL 5203H	BIO	Public Health Research Methods	Liviana Calzavara	Monique Gignac	Hayley Hamilton	Robert Mann, P. O'Campo	52
CHL 5204H	BIO	Survey Methods in the Health Sciences II	Sue Bondy				9

CHL 5207Y	BIO	Lab in Statistical Design and Analysis	Tony Panzarella	Derek Stephens			10
CHL 5208Y	BIO	Lab in Statistical Design & Analysis	Tony Panzarella	Derek Stephens			2
CHL 5209H	BIO	Survival Analysis	Sandra Gardner				26
CHL 5210H	BIO	Categorical Data Analysis	Lei Sun	Laurent Briollais			26
CHL 5220H	BIO	Community Health Appraisals Methods I (CHAM I)	Vicki Kirsh	Jason Pole			45
CHL 5221H	BIO	Community Health Appraisals Methods II (CHAM II)	Blake Poland	Ann Fox			49
CHL 5223H	BIO	Applied Bayesian Methods	Michael Escobar				11
CHL 5224H	BIO	Statistical Genetics	Lei Sun	Wei Xu			17
CHL 5225H	BIO	Advanced Statistical Methods for Clinical Trials	Andrew Willan	Joseph Beyene	M. Pintile	Janet Raboud, Kevin Thorpe	9
CHL 5250H	BIO	Biostatistics Seminar	Wendy Lou	Paul Corey			15
CHL 5300H	PHP	Issues in Transdisciplinary Research and the Health of Marginalized Populations	Jenn Keelan	Robert Schwartz			53
CHL 5308H	PHP	Tools and Approaches for Public Health Policy Analysis and Evaluation	Joanna Cohen	Robert Schwartz			18
CHL 5401H	EPI	Intro to Epidemiology	Elizabeth Hall				37
CHL 5402H	EPI	Epidemiological Methods II	Elizabeth Badley				31
CHL 5403H	EPI	Epidemiology of Non-Communicable Diseases	Kue Young				10
CHL 5404H	EPI	Research Methods in Epidemiology I	Dionne Gesink	Gail Eyssen			5
CHL 5405H	EPI	Health Trends and Surveillance	Ian Johnson				29
CHL 5406H	EPI	Quantitative Methods for Biomedical Research	Sue Bondy	Malcolm Binns			7
CHL 5408H	EPI	Research Methods II	Elizabeth Badley	Julia Knight			5

CHL 5409H	EPI	Cancer Epidemiology	Eric Holowaty	Anna Chiarelli			10
CHL 5410H	EPI	Occupational Epidemiology	Ron House				10
CHL 5411H	EPI	International Health	Barry Pakes				19
CHL 5412H	EPI	Communicable Disease Epidemiology, Prevention and Control: Principles	Margaret Millson	Robert Remis			13
CHL 5415H	EPI	Communicable Disease Epidemiology, Prevention and Control: Practice	Elizabeth Rea				9
CHL 5416H	EPI	Environmental Epidemiology	Donald Cole	S. Harris	S. Gower	L. Vanderlinden	6
CHL 5417H	EPI	Tobacco and Health: From Cells to Society	Roberta Ferrence	Scott Leatherdale			6
CHL 5418H	EPI	Scientific Overviews in Epidemiology	Laura Rosella	Ian Johnson			32
CHL 5420H	EPI	Global Health Research Methods	Donald Cole	Lisa Butler			3
CHL 5421H	EPI	Aboriginal Health	Kue Young				10
CHL 5423H	EPI	Doctoral Seminar Series in Epidemiology	Nancy Kreiger	Robert Mann			10
CHL 5430H	EPI	Fundamentals of Genetic Epidemiology	France Gagnon				3
CHL 5601H	INTER	Teaching Evidence Based Family Medicine in Clinical Setting	W. Rosser	C. Holmes			7
CHL 5602H	INTER	Working with Families in Family Medicine	J. Whittingham	T. Windrim	Stephen Holzapfel		4
CHL 5603Y	INTER	Social, Political and Scientific Issues in Family Medicine	Curtis Handford				15
CHL 5604H	INTER	Human development in Family Medicine	William Watson	T. Windrim	R. Frankford		2
CHL 5605H	INTER	Research Issues in Family Medicine/Primary Care	N. Pimlott	Rahim Moineddin			1
CHL 5609H	INTER	Continuing Education for the Health Professionals I	Savithiri Ratnapalan				10

CHL 5630Y	INTER	Wound Prevention and Care	Gary Sibbald				5
CHL 5700H	GH	Global Public Health	Suzanne Jackson				23
CHL 5701H	GH	Collaborative Program in Global Health Seminar	Donald Cole				19
CHL 5801H	SBHS	Health Promotion	Farah Ahmad				33
CHL 5803H	SBHS	Health Promotion Strategies	Michael Goodstadt				32
CHL 5804H	SBHS	Health Behaviour Change	Cameron Norman				22
CHL 5805H	SBHS	Critical Issues in Health Promotion	Michael Goodstadt				21
CHL 5806H	SBHS	Health Promotion Field Research	Suzanne Jackson	Michael Goodstadt			12
CHL 5902H	OEH	Advanced Occupational Hygiene	Roland Hosein				10
CHL 5903H	OEH	Environmental Health	Roland Hosein				12
CHL 5904H	OEH	Occupational Health and Safety–Legal and Social Context	Linn Holness				16
CHL 5907H	OEH	Physical Agents II - Radiation	David Gorman				11
CHL 5910H	OEH	Occupational and Environmental Hygiene I	Paul Bozek				14
CHL 5911H	OEH	Occupational and Environmental Hygiene II	Paul Bozek				10
CHL 5912H	OEH	Industrial Toxicology	Grazyna Kalabis				9
CHL 5914H	OEH	Physical Agents I - Industrial Noise and Vibration	James Purdham				10
CHL 5915H	OEH	Control of Occupational Hazards	Andrea Sass-Kortsak	Paul Bozek			12

CHL 5917H	OEH	Concepts in Safety Management	Lisa Ceolin				12
CHL 5918H	OEH	Biological Hazards in the Workplace Community	James Scott				10
CHL 7001H	SBHS	Advanced Topics in Social Theory and Health: Feminist Perspectives on the Body	Peggy McDonough				4
CHL 7001H	SBHS	Systems Science Perspectives in Public Health	Cameron Norman				4
CHL 7001H	SBHS	Building Community Resilience	Blake Poland				14
CHL 7001H	GH	Health as an Engine for the Journey of Peace	Izzeldin Abuelaish				5
CHL 7001H	BIO	Statistical Data Mining in Health Sciences	Rafal Kustra				3
CHL 7001H	OEH	Applied Ergonomics	Paul White				9

There are approximately seventy-five graduate courses that are offered on a regular basis and students also have access to reading courses. Table 3 lists the courses offered in 2009-2010 including instructor(s) and enrolment numbers. The number of students in each course varies considerably. (Appendix 2 provides a history of enrolment data for courses offered since 2005-06). All courses are evaluated by the students for the purpose of providing feedback to the instructors. These evaluations are also used by the School for merit pay related to process through the ranks (PTR) as well as tenure and promotion decisions. This data is not publically available but the courses offered by DLSPH are generally very highly rated by the students.

The above faculty are complemented by a much larger group of cross-appointed, status and adjunct faculty who are also engaged, at varying levels, in the educational and research mission of the Department. Appendix 1 is a complete list of all faculty involved with the School. The status-only faculty are employed by the research institutes in the affiliated hospitals, in other key collaborating research institutions, such as Cancer Care Ontario (CCO), and the Institute of Work and Health (IWH), other Universities and all 3 levels of government (municipal, provincial and federal). (See Table 4) Many of these individuals hold primary academic appointments in the DLSPH, giving them a formal link to the University that is mutually beneficial. It is important to emphasize the significant contribution being made by status faculty who are vital to the educational activities. Status faculty teach courses (or parts thereof), supervise and mentor graduate students, provide much needed funding and research work space, and participate in graduate department administration. The cross-appointed faculty comes from other departments/units from across the University. Within the Faculty of Medicine, this includes the departments of Family and Community Medicine, Nutritional Sciences, Medicine, Paediatrics, and Psychiatry. More broadly, other cross appointees hold their primary appointments in the Faculties of Nursing, Applied Sciences & Engineering, Law, Arts and Sciences (departments of Statistics, Sociology, Geography) and the Ontario Institute of Studies in Education (OISE-UT)

Collaborative research, both contract and peer review, is conducted jointly with colleagues from these organizations, the Ministry of Health and Long- Term Care, and the Public Health Agency of Canada. Examples include joint work on the competencies for public health epidemiologists, and the Centre for Urban Health initiatives [see Section 5 Research].

It is envisaged that these faculty will have an enhanced role in the mission of the School. In particular, there is an expectation that policy regarding the nature of appointments for non-medical status faculty will evolve in the very near future. This would clarify the extent of their role, and particularly their obligations to the School, within affiliation agreements between the University and the affiliate institutions where they are employed. Where appropriate, there is an expectation that members of the leadership of the School, or designates, will play key roles in the hiring of individuals who ultimately seek a cross, or status, appointment in the School.

TABLE 4: Home Institutions of Status Faculty		
	Institution	Number
Affiliated Hospitals	University Hospital Network (PMH, TGH, TWH) ¹	12
	Centre for Addiction and Mental Health (CAMH)	11
	Hospital for Sick Children (HSC)	11
	St. Michael's	9
	Mt. Sinai Hospital (Samuel Lunenfeld RI)	9
	Women's College Hospital	3
	Others	7
Total		62
Research Organizations	Cancer Care Ontario (CCO)	13
	Institute for Work and Health (IWH)	13
	Institute for Clinical Evaluative Sciences (ICES)	2
	Canadian Institute for Health Information (CIHI)	1
	Ontario Institute for Health Research (OIHR)	1
Total		30
Government	Federal (Health Canada, PHAC, Environment Canada)	6
	Provincial (8 OAHPP, 3 MOHLTC, 1 MOE, 1 MOL)	13
	Local – Toronto Public Health	8
Total		27
Other Universities	University of Western Ontario	6
	McMaster University	3
	Ryerson University	3
	York University	2
	Others (4 provincial, 5 national, 3 international)	12
Total		26
Other	Foundations, centres	33
Total		178

A number of faculty are either in endowed Chair positions or have successfully competed for research chairs or career awards. These include:

Canada Research Chair

Anne-Emanuelle Birn	International health
John Cunningham	Brief interventions in addictive behaviours
France Gagnon	Genetic epidemiology
Wendy Lou	Statistical methods of health care
Steven Narod	Breast Cancer
Andrew Patterson	Genetics of complex diseases

Endowed Chairs

Adalsteinn Brown	Newly appointed, November 2010, Dalla Lana Chair in Public Health Policy
Prabhat Jha	Newly appointed, November 2010, Dalla Lana Chair in Disease Control
James Orbinski	Newly appointed, November 2010, Dalla Lana Chair in Global Health
Jurgen Rehm	Chair in Addiction Policy
Kue Young	TransCanada Pipelines Ltd Chair in Aboriginal Health

Career Scientist Awards

Jennifer Keelan	Assistant Professor
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Professorships

Izzeldin Abuelaish	Michael and Amira Dan Professorship in Global Health
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B. FUTURE CHALLENGES

Renewal and expansion of these faculty numbers will involve the replacement of all retiring faculty and growth in areas deemed necessary to the mission of the School, particularly Public Health Policy. Growth in other areas such as Biostatistics, Epidemiology, Occupational and Environmental Health, or Social and Behavioural Health Sciences, would be aligned with both the strategic mission, and revenue streams, of the School. Joint appointments with other faculties at the University of Toronto, and institutions affiliated with the School, are expected to increase.

The relationship between the School and the Department of Health Policy, Management and Evaluation (HPME) will have to be re-envisioned.

SECTION 3: EDUCATION

A. FACTS & FIGURES

<u>Degree Program</u>	<u># student (fall headcount)</u>	
	<u>2005-06</u>	<u>2009-10</u>
PhD	95	100
MPH	111 (+ 44 p/t)	139 (+30 p/t)
MSc	19 (+ 5 p/t)	12 (+ 5 p/t)
MScCH	n/a	5 (+ 41 p/t)

B. DEGREE PROGRAMS

DOCTORAL DEGREE PROGRAM (PHD)

OVERVIEW

The PhD degree in the DLSPH educates and trains the next generation of educators and scientists who will lead the development of new knowledge to advance public health in Canada and around the globe. Currently, the degree is offered in three fields or specializations: Biostatistics, Epidemiology, and Social and Behavioural Health Sciences. Consideration is also being given to adding Occupational and Environmental Health and Public Health Policy to the suite of PhD specializations in the School.

OBJECTIVES

The objective of the PhD program is to develop independent scientific leaders and educators:

- in the understanding of disease occurrence, causation, and prevention;
- in the effort to understand, address and reduce health inequities and improve the well-being of individuals, communities and societies; and
- in the development and application of statistical methods for advanced data analysis, especially as related to the biomedical, social science and public health fields;

PhD Specializations

- Biostatistics
- Epidemiology
- Social & Behavioral Health Sciences

Graduates of the program are trained to work as independent researchers and are expected to assume major leadership and supervisory roles in academia including universities, teaching hospitals, and public research institutes; in government and other health agencies; and in the medical and pharmaceutical industry.

COMPETENCIES

Graduates from the DLSPH doctoral program gain general competencies in:

- critically evaluating scientific literature;
- identifying gaps, framing new research problems;
- applying appropriate methodological tools, theoretical and conceptual understanding to address health problems;
- understanding ethical implications of public health research;
- appreciating the policy implications of public health research;
- analyzing data, and understanding how to link scientific questions and complex quantitative and qualitative methods; and
- advancing knowledge in the field of public health.

Specific competencies exist in the specializations within the PhD program. These are:

PhD Specialization	Specific Competencies
Biostatistics	Developing new statistical methodology and discovery of mathematical statistical properties using cutting edge mathematical statistical methods, and proficiency in the use of common and advanced statistical packages and the development of new statistical algorithms.
Epidemiology	Having a solid grounding in observational and experimental research methods, and in the biological and/or social sciences; developing methods appropriate for answering specific research questions; using available data and/or collecting new data, as required; implementing methodologically sound research studies for addressing specific research questions; conducting data analysis and publishing research findings in the scientific peer-reviewed literature; and understanding the public health impact of research findings in particular, and of epidemiologic research more broadly.
Social & Behavioural Health Sciences	Having a sound grounding in theoretical constructs relating to social theory and health behaviour and behaviour change, and apply these and appropriate research methods to understanding of multi-level determinants and mechanisms including individual, group, community, institutional and societal level inter-relations, structures and processes that underlay health/well-being, illness, injury and disability. Using the World Health Organization's (WHO's) definitions of health and health promotion as a foundation, we examine public health problems and interventions.

ADMISSION REQUIREMENTS

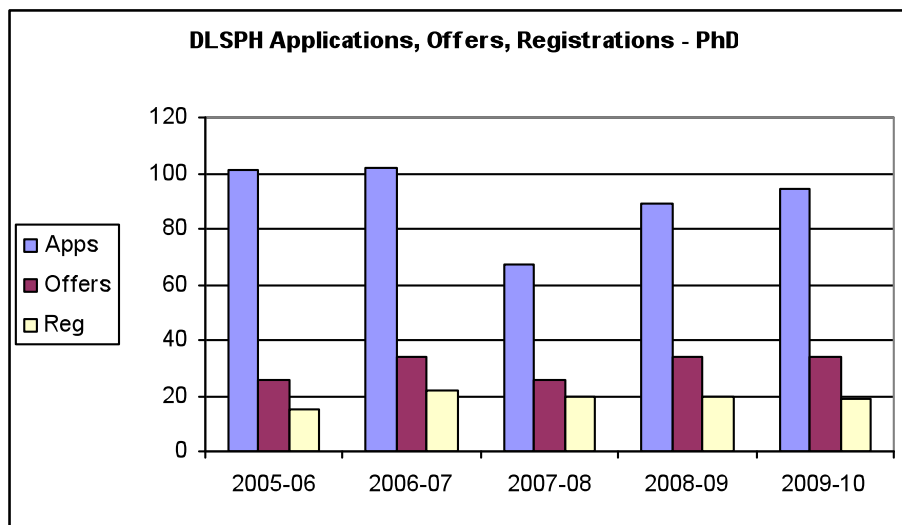
Successful applicants will hold a master's degree in a relevant field (e.g., depending upon the field of study - biostatistics, biology, epidemiology, sociology, behavioural science, psychology); have training in quantitative or qualitative research methods; and have research experience demonstrated by the completion of a master's thesis, a supervised research practicum, or other research experience that includes independent contributions to scientific literature.

They will have an A- or greater average in the final year of the highest degree (or in the last 5.0 full course equivalents completed at a senior level); will have practical experience and expertise in using standard statistical software packages; and will have research interests that align with at least one member of the faculty with PhD supervisory privileges.

APPLICATIONS

Over the past five years, the number of applicants to the PhD program has been strong at over 90, with the exception of 2007-8, with an unexpected dip to 67 (see Figure below). The quality of the applicant pool remains high, with the program admitting approximately 20 new students per year over the past 4 years. Setting aside the anomalous 2007-08 data, acceptance rates have ranged from 56% to 65%, with possibly a decreasing trend. This may be as a result of increasing competition from other universities. In addition, we are aware that some applicants are declining offers of acceptance because they are getting better funded offers elsewhere in both Canada and the United States.

Data for the 2010-11 admission cycle, though incomplete, indicate an increased number of applicants (139), offers (41) and registrations (30) (i.e., number entering September 2010).



	2005-06	2006-07	2007-08	2008-09	2009-10
Offer rate (%)	26%	33%	39%	38%	36%
Acceptance rate (%)	58%	65%	77%	59%	56%

PROGRAM DESCRIPTION

- In ***Biostatistics***, students receive a deep and broad experience in all aspects of data analysis, mathematical statistics, classical and modern methods in linear and non-linear models, survival analysis, and may choose from a collection of more specialized topics such as Bayesian methods, statistical methods applied to genetics, and computer intensive techniques. Faculty research areas include Bayesian methods, bioinformatics, computational biology, clinical trials methodology, cost-effectiveness analysis, health system monitoring and evaluation, hierarchical modeling, longitudinal data analysis, meta-analysis, microarray analysis, optimal experimental design, statistical methods for observational studies, statistical genetics, spatial and temporal models, statistics for neuroimaging data, and survival analysis.
- In ***Epidemiology*** the research foci include the epidemiology of cancers, musculoskeletal diseases, HIV/AIDS, and other infectious and chronic diseases; with an emphasis on genetic, individual, lifestyle, infectious and environmental factors affecting human health. This program aims to develop excellent epidemiologists who are able to work, teach and conduct research on contributors to health; disease, disability and death; and effective measures of prevention.
- The ***Social and Behavioural Health Sciences*** field is unique in Canada. For the entire last quarter of the 20th century until the present it has been the only graduate program of its kind in Canada. Although in more recent years graduate training in the social science of health is available in other universities, this program remains unique, particularly by virtue of its location within the health sciences but firmly grounded in the theoretical knowledge of parent social science disciplines. The program is inherently multi- and cross- disciplinary, both in terms of its students' backgrounds and in terms of the disciplines upon which the curriculum draws upon. The field has two possible foci, the Health and Behavioural Sciences (HBS) focuses on research methods and theories to understand individuals, behaviour and the social context in relation to health, illness and health care. Research aims to understand health issues from a single, multi-level or systems-based perspective, or to study interventions to modify health behaviour both of individuals and groups. The focus in Social Sciences and Health (SSH) is on the application of social science theory and methodology to research on health, illness and health care. The emphasis is on critical theory, more qualitative approaches to understanding health issues and contribution to the development of interventions.

COURSES

Students in the PhD program acquire their skills and learning through a combination of course work and independent research. While specific course requirements vary across specialization, all PhD students must have some exposure to the five pillars of public health education. This exposure is gained through the required core course CHL 5004H Introduction to Public Health, and through other required methodological and substantive courses. Specific course requirements for each specialization are provided below.

PHD REQUIRED COURSES		
		CREDIT
BIostatISTICS		
CHL5004H	Introduction to Public Health	0.5
CHL5208Y	Advanced Laboratory in Statistical Design and Analysis	1.0
CHL5210H	Categorical Data Analysis	0.5
CHL5250H	Biostatistics Seminar	0.5
	Plus one of the following:	
CHL5209H	Survival analysis I	0.5
STA2209H	Lifetime Data Modeling	0.5
EPIDEMIOLOGY		
CHL5004H	Introduction to Public Health	0.5
CHL5404H	Research Methods in Epidemiology I	0.5
CHL5406H	Quantitative Methods in Biomedical Research	0.5
CHL5408H	Research Methods II	0.5
CHL5423H	Doctoral Seminar for Epidemiology	0.5
CHL5424H	Advanced Quantitative Methods in Epidemiology	0.5
SOCIAL AND BEHAVIOURAL HEALTH SCIENCES		
Required Courses for SSH: 3.5 FCE		
CHL5004H	Introduction to Public Health Sciences	0.5
CHL5101H	Social Theory and Health	0.5
CHL5102	Social and Political Forces in Health and Health Care	0.5
2 Methods courses		1.0
2 Electives		1.0
Required Courses for HBS: 3.0 FCE		
CHL5004H	Introduction to Public Health Sciences	0.5
CHL5804H	Health and Behaviour Change	0.5
2 Methods courses (one required quantitative)		1.0
1 CHL7000H (reading course) related to thesis topic		0.5
1 Elective		0.5

Students also are expected to take elective courses. Students are best served if their elective courses form part of a coherent package of experience. In this light, students are encouraged to choose elective courses that relate to the theme of their dissertation, or electives that fill identifiable gaps in their overall training and experience. Students typically take 3.0-4.0 full course equivalents (FCE), where a one-term course is worth 0.5 FCE. Students in the PhD program who have received their master's degrees in the DLSPH will be assisted in designing a program of study that acknowledges the students' advanced standing. Typical elective courses for each specialization are listed in Appendix 3.

Comprehensive or Qualifying Examination: The comprehensive or qualifying examination is generally taken after the student has completed the required courses. It is comprised of methodological and

substantive components that vary with the specialization. Students are expected to sit for the comprehensive examination by the end of their first year, and must have passed the examination no later than the end of the second year.

- The **Biostatistics** comprehensive examination is composed of three parts: Foundation (mostly mathematical statistics), Methodology (applied statistics) and Data Analysis. The first two parts consist of five-hour in-class written examinations, and the third part is a one-week take-home exam that requires a final report.
- The **Epidemiology** comprehensive examination also consists of three parts: certification of completion of the tutorial for the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS)*; a written in-class examination that tests competence in the concepts, principles, data sources, and content of epidemiology, and the ability to apply these concepts and principles critically; and the preparation of a systematic literature review designed to assess the ability to develop and to conduct a systematic review of the literature in an area of the student's choosing.
- In the **Social and Behavioural Health Sciences**, the comprehensive examination provides for flexibility in approach depending on the stream of study. In a 25-50 page paper, accompanied by an oral examination the student is expected to critically examine methods and theoretical issues relevant to the general field of their dissertation research. Students are expected to identify core theoretical and conceptual approaches that could frame their research problem, and to locate themselves and their thesis orientation in relation to such fields.

Student Seminars: Students in the PhD program are expected to attend (and present) at seminars and other gatherings of colleagues. For example:

- The **Biostatistics** seminar series is a weekly event that brings together students, faculty, researchers and practitioners who are interested in biostatistics methodology and its applications. The objectives of the seminar series include: i.) introducing various research topics in biostatistics that are not taught through regular courses at DLSPH, ii.) presenting recent methodological advancements, and iii) providing research exchange opportunities among peers. All first-year biostatistics graduate students are required to attend the seminar series as part of a required course, and must submit three research reports based on topics presented over the fall and winter terms. Students are encouraged to work with the seminar presenters while preparing their research reports. The seminars are given by external speakers (including international speakers), UofT faculty members, and senior PhD students. Presentation slides are available to all registered seminar attendees through the seminar website, including archived presentations from past years. A list of seminar topics can be found at <http://www.sph.utoronto.ca/lou/course/ch15250/Course.asp>
- The **Epidemiology** Doctoral/Divisional seminar series comprises biweekly presentations by faculty and doctoral students, with an emphasis on work in progress. First and second year doctoral students are required to register for the course; faculty, upper year PhD students, and MPH students are strongly encouraged to attend. A list of this academic year's seminar schedule can be found at <http://www.sph.utoronto.ca/EpiSeminarSeries.asp>

TIMELINES

PhD students are required to submit annual activity reports. The reports are reviewed with the student by the supervisor, and further reviewed by the program director. The program director (and the supervisor) meet with any student whose progress is deemed unsatisfactory, to develop a plan for improved progress.

Full-time students are expected to complete the PhD in four to five years. (Flexible-time students may take longer, but not more than eight years.)

- Year 1: Take required courses, prepare for comprehensive examination, submit applications for external funding
- Year 2: Take elective courses, complete comprehensive or qualifying examination, prepare research proposal and obtain approval for dissertation topic, obtain approval of the Research Ethics Board (as needed).
- Years 3-4: Collect and analyze data; take any coursework that would enhance the thesis research.
- Years 4-5: Write and defend dissertation, apply for post-docs and jobs.

Flexible-Time PhD Program: Students may be admitted to the Flexible-Time PhD program, which is intended for practicing professionals who generally have to maintain employment related to their intended field of study. The admission and degree requirements for the Flexible-Time program are identical to those listed above for the full-time program; however, students have up to 8 years (compared to 6 years for full-time) to complete their program. They are required to register full-time for the first 4 years of their program (and pay full-time fees). Thereafter, they may register part-time, with reduced fees. An individualized plan of study and research activities is negotiated at initial registration and updated annually. Flexible-time students are not eligible for university-based student support. That is, they are not considered part of the *funded cohort* and therefore not eligible for the guaranteed minimum stipend. Students are not permitted to transfer from the Flexible-Time program to the full-time program. Approximately 10 to 15% of the PhD students are enrolled in the Flexible-Time program.

STUDENT FINANCIAL SUPPORT

In 2000, the University of Toronto became the first Canadian institution to introduce a guaranteed minimum level of funding for all eligible doctoral stream graduate students (those in the '*funded cohort*'). Currently, the university-wide minimum support level is \$15,000 plus tuition and fees, for a minimum of five years of doctoral stream study. Based on tuition and fees for 2010-11, this represents \$22,750 for domestic students and \$32,200 for international students.

The DLSPH has a Funding Policy which has been in effect since 2005 (see Appendix 4). The *funded cohort* is defined as all full-time students, both domestic and international, in years 1 to 5 of the PhD program, in good standing. Sources of funding include internal and external awards (scholarships, fellowships) and stipends from supervisor's grants (all classified as T4-A income). Research Assistantships, Teaching Assistantships and other funds *arising from employment* are not part of the funding package. Since 2006, the funding package (awards, fellowships, bursaries, student stipends), for registered students has been fully tax exempt (Professional/Clinical earnings are excluded).

The School spends approximately \$100,000.00 per year to fund TA positions for higher enrolment master's level courses. Table 5 provides information on the average funding per student from 2005-06 to 2009-10, indicating the source. DLSPH doctoral students have been increasingly successful in

garnering external competitive awards - provincially and nationally, with 51% of stipends deriving from external awards in 2005-06, increasing to 62% in 2009-10. While students have been competitive, the U of T is focused on continuing to develop strategies to maintain and, in fact, increase this competitive edge.

TABLE 5: Financial Support for PhD Students							
Year	\$ Amount of Support From					Students Funded	
	External Scholarship	Univ Scholarship	RAs	Other*	Total	# (%)	Av \$
2005-06	820,114	598,112	127,391	34,415	1,580,032	76 (94%)	20,790
2006-07	838,045	693,005	77,000	27,959	1,636,008	75 (73%)	21,813
2007-08	1,137,822	580,621	205,400	35,040	1,958,883	81 (95%)	24,184
2008-09	1,131,190	663,889	197,001	45,861	2,037,941	87 (98%)	23,425
2009-10	1,212,951	624,184	76,750	46,724	1,960,609	82 (94%)	23,910

Note:
 Percentage of student in the funded cohort receiving funds excludes Flex-time students who are outside of funded cohort.
 Other* = Internal bursaries.
 Source of data: ROSI (Repository of Student Information), GradSIS (Graduate Student Information), and Enrolment Cube.

The primary source of funding is external competitive studentship grants. Table 6 provides a summary of the principal sources of major, external competitive studentship awards including, but not limited to the Canadian Institutes of Health Research (CIHR), Social Science and Humanities Research Council (SSHRC) and Ontario Graduate Scholarships (OGS). For example, in 2008-09, 45% of full-time PhD students held external awards from the agencies noted in the table below.

TABLE 6: External Awards from Agencies held by PhD Students in 2008/09

Agency	No. of Students
CIHR	20
SSHRC	10
NSERC ¹	1
OGS	6
OGSST ²	5
Other	2
Total	44

1. Natural Sciences & Engineering Research Council
2. Ontario Graduate Scholarships in Science and Technology

Student - Supervisor Agreement: Students and their supervisors are required to jointly complete an annual Student - Supervisor Agreement Form, on a Faculty of Medicine web-based agreement and

financial tracking system (Graduate Student Information System - GradSIS). The form articulates, in detail, the department's funding policies, including the annual minimum stipend and the duration of the guarantee (typically five years for PhD). The student's funding package is itemized including the source(s) of the funds. All university-based student awards (scholarships, bursaries, including OGS, CIHR, SSHRC, etc) are managed and paid through a university-wide system, which is linked to the Faculty of Medicine's GradSIS system, enabling effective monitoring and tracking of student funding. In addition, the agreement form outlines student and supervisor responsibilities, and relevant University policies and procedures, including Research Ethics, Safety, Sexual Harassment and Intellectual Property. In this manner, the DLSPH has some assurance that both students and supervisors are informed of these important policies and procedures. The need for early discussion of intellectual property issues is also highlighted (see Appendix 5).

OUTCOMES

Enrolment, Withdrawals & Graduation: Since the Fall of 2005, enrolment in the PhD program has increased slightly (Table 7). The relative size of the three specializations has changed, with growth in the Social & Behavioural Health Sciences and reductions in Biostatistics and Epidemiology, likely as a consequence of the fluctuations in faculty complement.

	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
Biostatistics	21	22	18	16	13
Epidemiology	35	30	34	31	24
Social & Behavioural Health Science	39	47	51	58	63
Total	95	99	103	105	100

The total enrolment data (Table 8) reflects enrolments over the full academic year (Fall, Spring and Summer terms), which are slightly higher than the Fall headcounts, as shown in Table 7).

TABLE 8: PhD Total Enrolment, Withdrawals & Graduations by Year

Year ¹	New Enrolment	Total Enrolment ²	# Female (%) ³	# Visa (%) ⁴	Total Withdrawals ⁵	Total Graduations ⁶
2003-04	21	92	66 (71.7%)	2 (2.2%)	2	10
2004-05	22	95	65 (68.4%)	3 (3.2%)	2	6
2005-06	15	106	74 (69.8%)	2 (1.9%)	1	17
2006-07	25	109	76 (69.7%)	1 (0.9%)	5	15
2007-08	20	108	77 (71.3%)	1 (0.9%)	4	12
2008-09	20	111	75 (67.6%)	1 (0.9%)	2	4
2009-10	20	105	74 (70.5%)	2 (1.9%)	11	17

¹ Academic year starting September 1 with three entry points: (Sept, Jan. and May).

² All students registered in the program in that academic year continuing and new (for continuing, use numbers reported November 1).

- ³ Number of female students and (%).
- ⁴ Number of visa (international) students and (%).
- ⁵ All students who withdrew within that year.
- ⁶ All students who completed the program within that year.

Given the length of the PhD program, data are provided for new enrolments over the past 7 years. (Table 8). Over the past 5 years, approximately 75% of the PhD students are female and the vast majority are domestic (Canadian citizens or landed immigrants), with only 1 to 3 % being international students. Withdrawals do occur - typically one or two per year. However, since 2005-06, the withdrawals have occurred earlier in the program. The exceptionally high number of withdrawals in 2009-10 (n=11) reflects the fact that the DLSPH expended efforts to identify lapsed students and formalized their withdrawal. New PhD enrolments have remained relatively constant, at around 20 over the past years.

Though incomplete, data from 2010-11 fall registration indicate a substantial increase in New Enrolment to 30.

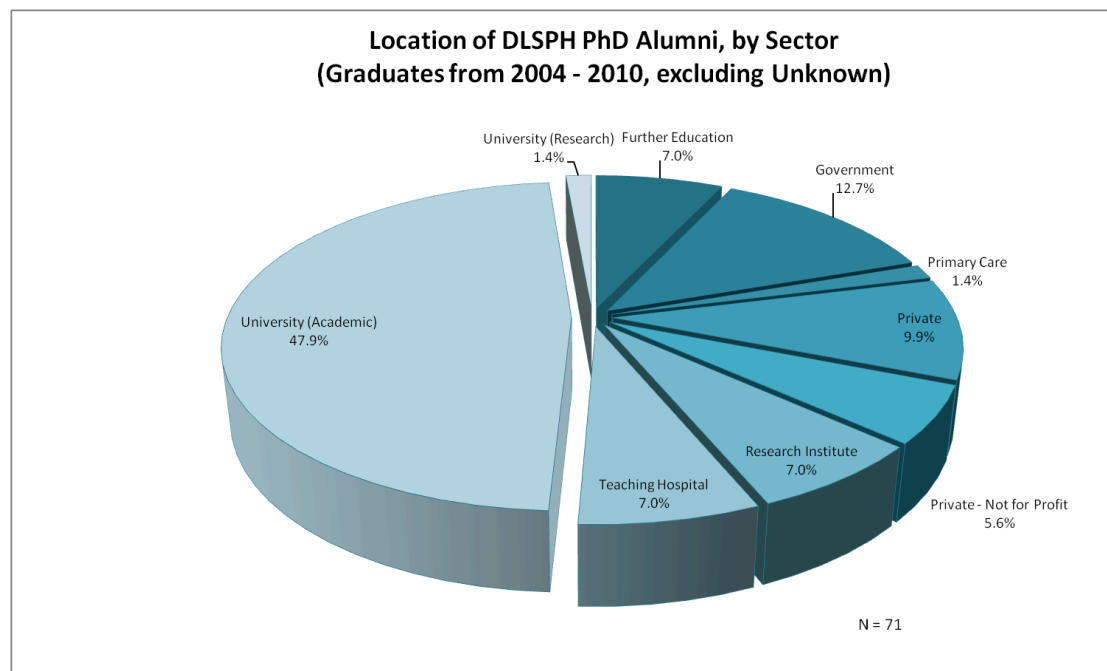
Time to Degree Completion: Over the past 7 years (2003/4 - 2009/10), the mean and median times to degree completion (TTC) are provided in Table 9. The introduction of guaranteed funding for all PhD students in the funded cohort, together with much closer, annual monitoring of student progress is expected to improve time to completion over the coming years. It should also be noted that the flexible time program can adversely impact TTC data, as these students have up to 8 years to complete their degree programs. For the PhD Epidemiology, the mean and median TTC is reduced to 6.4 and 6.5 years, respectively, when the 5 graduates of the flexible-time program are excluded. Excluding the 3 graduates of the flexible-time S&BH program, the mean TTC is reduced to 6.2 years, the median remains unchanged.

TABLE 9: Mean (range) and Median Times-to-Completion of PhD Program

Field	Mean (range)	Median
PhD, Biostatistics (n=15)	5.6 (3.0-9.0)	5.7
PhD, Epidemiology (n=29)	6.7 (3.7-9.3)	7.0
PhD, Social & Behavioural Health Science (n=34)	6.4 (4.0-9.7)	6.3

Career Paths for Graduates: The graduates of the PhD program (2005-2009), together with their thesis title and supervisor are listed in Appendix 6. Graduates are highly sought after. Nearly one half of the alumni are successful in obtaining faculty positions at Universities, locally, nationally and

internationally. One quarter of alumni are in academic posts outside of Canada (mostly in the United States).



Among graduates, 33% are working in the private sector, 60% in academia (university and teaching hospitals), and 7% in government. Most of those employed in *Teaching Hospitals* and *Research Institutions* are working as research scientists (principal investigators). The majority of alumni in *Government* are engaged with either the Ontario Ministry of Health and Long Term Care, or the Public Health Agency of Canada, though two in this category are working in the US - one at CDC, the other at NCI. Graduates working in the *Private Sector*, are either working in the pharmaceutical industry or as private consultants. Those alumni classified as *Further Education* are more recent graduates with post doctoral fellowship positions.

STRENGTHS & CHALLENGES

Strengths

- **BREADTH OF PROGRAM OFFERINGS:** One of the principal strengths of the DLSPH and its PhD program is its truly multi-, inter- and trans-disciplinary nature. Incoming students have incredibly diverse backgrounds, from the basic, physical and life sciences to the social and behavioural sciences. To ensure that they have a common grounding in the core principles and issues of public health, students are required to take a core Public Health course in the first two weeks of their program. The course features key public health researchers and practitioners, many of national and international stature, who bring a range of disciplinary perspectives. The intense eight-day format fosters collegial relationships among students across all fields and programs.
- **FACULTY:** The expertise of our core and status faculty reflects the breadth of public health. As Canada's largest University, U of T has an incredible wealth of expertise, providing a tremendous resource to the DLSPH programs. The DLSPH is closely linked with the Department of HPME as well as other strong ties with other graduate units, within the Faculty of Medicine

and more broadly throughout the university - many Faculty are cross-appointed to the DLSPH, thereby enriching interdisciplinary activities.

- **TORONTO/GTA LOCATION:** Our location in Toronto constitutes another major strength, providing a large complement of over 200 scientists who are employed in key collaborating institutions, such as Cancer Care Ontario, Institute of Work and Health, OAHPP, Institute of Clinical Evaluative Sciences, and all of the fully affiliated hospitals. These scientists hold primary, status-only academic appointments in the DLSPH and they and their institutions are vital to the teaching and research enterprise of the DLSPH. They provide a diversity and richness of academic opportunities and ideas, and enable the DLSPH to maintain the size, strength and depth of its programs.

Challenges

- **TIME TO DEGREE COMPLETION:** The University and the DLSPH has been concerned about the time to degree completion, particularly in PhD programs. In the past 4.5 years, we have been tracking student progress more carefully using annual reports and meetings. In addition, since 2005, all PhD students in the funded cohort receive funding. It is anticipated that we should see a reduction in times to degree completion over the next few years.
- **GRADUATE STUDENT FUNDING:** Graduate student funding continues to be a significant challenge for the PhD program at the DLSPH. The guaranteed funding package for PhD students is approximately \$22,750 per annum. While this represents a major improvement in funding over the past decade and is at par with some of our competitors locally, it is not always competitive with our comparator institutions nationally and internationally. We will need to find mechanisms to compete at this level and attract the very best and brightest students.
- **BARRIERS TO ADMITTING INTERNATIONAL STUDENTS:** The DLSPH could attract excellent international students and such students would be vital to maintaining a vibrant and world-class doctoral program in Public Health. Unfortunately, there are several barriers to admitting a cadre of international doctoral students. The Ontario Government does not provide funding to universities for international students. In addition, international students pay twice the tuition of domestic students and this additional tuition must be included in the minimum stipend, and finally, international students are ineligible for many graduate awards and scholarships. As a consequence, each international student admitted poses a significant additional cost to the DLSPH - a major disincentive. This is an ongoing concern which has been receiving the attention of university officials at the highest levels.
- **RELIANCE ON STATUS FACULTY:** The benefits and vital importance of the status-only faculty to the doctoral program have been noted above. However, the reliance on status-only faculty can also be considered as a challenge because this is a less stable resource. Our experience to date suggests the status only faculty actively engaged in the PhD program are, in fact, relatively stable. However, this needs careful monitoring.

MASTER OF PUBLIC HEALTH (MPH) PROGRAM

OVERVIEW

The Master of Public Health (MPH) degree is designed to prepare practitioners, educators and researchers for careers in public health. The purpose of the MPH Program (formerly the MHSc program) is to provide advanced training to practitioners entering the field, to experienced professionals wishing to enhance their health expertise, and to those wishing to pursue doctoral training and a career in research. The MPH specializations offered in the DLSPH are Community Nutrition, Epidemiology, Family and Community Medicine, Health Promotion (social and behavioural health sciences), and Occupational and Environmental Health. Consideration is also being given to adding Biostatistics and Public Health Policy to the suite of MPH specializations in the School. The DLSPH does not offer a generalist MPH.

OBJECTIVES

The objective of the MPH program is to prepare students for leadership roles in public health at local, national, and international levels.

COMPETENCIES

Graduates of the MPH program will:

- incorporate population health and social determinants approaches in their public health research and practice;
- explore, analyse and interpret public health issues, including trends and patterns of disease incidence and prevalence, disease burden, factors affecting health status, and major etiologic and prognostic factors;
- demonstrate the ability to critically analyze information and creatively solve problems;
- exhibit practical skills, including the ability to frame questions, refine them in light of the literature and community situation, design an appropriate study to answer the question, collect and analyze relevant data, and interpret the findings relative to the literature and the community/ organizational context;
- collaborate and communicate effectively;
- approach public health issues from a critical perspective;
- plan, implement, and evaluate public health programs and interventions;
- understand the role of policy in public health;
- advocate for public health enhancement on behalf of stakeholders, communities, populations;
- identify and address ethical considerations in their research and practice;
- develop capacity, knowledge, and skills to work as partners in interdisciplinary health teams in a variety of work settings;
- demonstrate public health expertise and leadership within their disciplines and areas of research and practice.

MPH Specializations

- Community Nutrition
- Epidemiology
- Family & Community Medicine
- Health Promotion (Social & Behavioural Health Sciences)
- Occupational & Environmental Health

Two of the specializations have certification requirements.

- In the **Community Nutrition** specialization, students develop the competence required for entry-level dietetic practice. While the professional and educational competencies are currently being revised (www.pdep.ca), current competency areas as outlined by Dietitians of Canada include: Professional Practice; Assessment; Planning; Implementation; Evaluation; and Communication.
- In the **Occupational and Environmental Health** specialization, students develop the competence required for the theoretical, technical and practical aspects of occupational hygiene, sufficient for the students to pass professional examinations offered by the Canadian Registration Board of Occupational Hygiene and/or the American Board of Industrial Hygiene. This competence includes knowledge of physical and biological sciences; understanding workplace hazards and risk assessment; having knowledge of ergonomics, occupational safety, accident prevention, and, occupational health and safety considerations of labour relations.

A more detailed description of objectives and competencies for each specialization is provided in Appendix 7.

ADMISSION REQUIREMENTS

Minimum admission criteria to the MPH program are:

- A four-year undergraduate degree relevant to the MPH area of specialization;
- Minimum B (75%) standing in the fourth year of study;
- Demonstrated proficiency in English language;
- Demonstrated interest in Public Health;
- An undergraduate course in statistics; and
- Relevant practical experience and demonstrated interest in the area of specialization.

In addition to the general MPH admission criteria, Community Nutrition requires an undergraduate degree with specialization in nutritional sciences, and accredited by Dietitians of Canada or equivalent. Applicants to advanced standing must have a minimum of five years experience working as a dietitian in a related field. In addition to the general MPH admission criteria, the Family and Community Medicine specialization requires licensed and regulated primary care clinicians (or equivalent) in Canada.

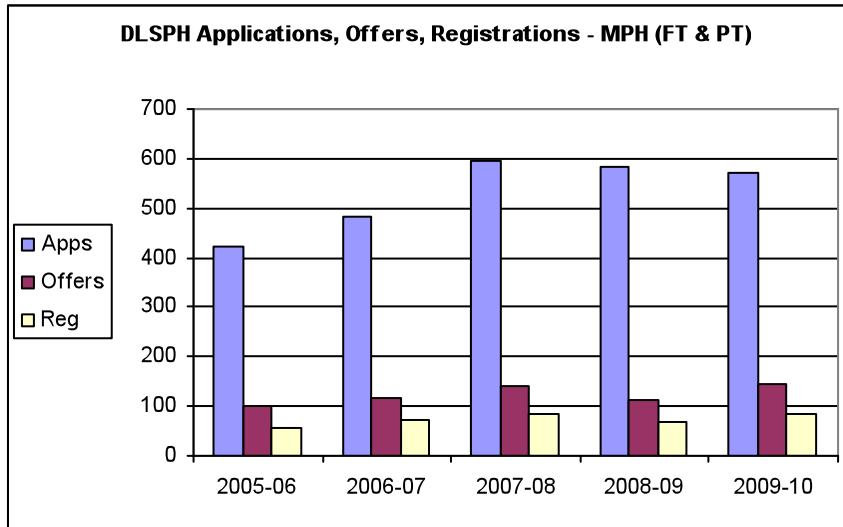
Full-time students usually complete the 10 FCE MPH degree in 20 months [i.e., they are expected to complete it within two (2) years (minimum completion time is 16 months)]. Part-time students may take longer, but not more than four (4) years. Students in Community Nutrition who qualify for advanced standing complete only 5 FCE along with distance-education components.

APPLICATIONS

Over the past 5 years the number of applicants to the MPH has increased from 420 to just under 600 (Table 10).

The demand for this program continues to increase. Data for the 2010-11 admission cycle, though incomplete, indicate an increased number of applicants (778), offers (165) and registrations (96).

TABLE 10: Applications, offers, registrations (2005-2009)



	2005-06	2006-07	2007-08	2008-09	2009-10
Offer rate (%)	24%	24%	24%	19%	25%
Acceptance rate (%)	57%	60%	59%	62%	57%

PROGRAM DESCRIPTION

The MPH specializations align with the needs of the specific disciplinary groups.

- **Community Nutrition** emphasizes principles of adult education: self-assessment, self-directed learning, critical reflection, as well as the importance of continuous learning.
- **Epidemiology** emphasizes quantitative methods, critical appraisal of evidence, research design and implementation, data analyses and interpretation. It trains epidemiologists to work in practice or research settings, and prepares graduates for PhD work in epidemiology.
- **Family and Community Medicine** trains primary care physicians to identify emerging public health problems, to promote healthy lifestyles, to screen appropriate patients for disease, to advocate for patients and to provide public health initiatives to their patients.
- **Health Promotion** takes a social science perspective in addressing issues related to the health of individuals, communities and populations with special attention to identifying, understanding and addressing the societal and personal determinants of health. There is an emphasis on an array of mutually reinforcing health promotion and public health strategies, including health education and communications, community development, the role of organizational development and change, health advocacy, and the development of health promoting public policy.
- **Occupational and Environmental Health** is offered with two options. The professional occupational hygiene option is focused on the prevention of disease and injury arising from the workplace, through the identification of health hazards, the evaluation or assessment of the extent of risk posed by the hazards, and the elimination or control of the risks. The research

option is focused on training students who wish to pursue a research career in occupational and/or environmental health.

Each of the MPH specialization programs has a different emphasis with respect to the discipline but share common goals in preparing students for a career in public health. Through each of these specializations, students satisfactorily cover the core areas of public health. In addition to these core public health specializations, students are encouraged to consider the global implications of their work. Regardless of the specialization, students earning the MPH degree receive a population health perspective, training in biostatistics and epidemiology, an understanding of health promotion approaches and the social determinants of health, and understanding of public health policy and the Canadian public health system. The DLSPH program prepares graduates for careers in diverse areas of public health research and practice, to promote the health of individuals, communities, and populations. More detail about each specialization is provided in Appendix 7.

MPH students with an interest in Global Health may apply to a Global Health concentration. This initiative brings together students from across all MPH fields to focus on global public health issues from an interdisciplinary perspective through shared courses and seminars. The competencies associated with the Global Health Concentration are to:

- Understand the political economy of global health issues.
- Bring a determinants-of-health and population health perspective to problem analysis, policy development and project design.
- Be cognizant of the linkages between local and global health problems.
- Work within the mandates, roles and approaches of international organizations.
- Build coalitions and work in partnership with the NGO sector and local community organizations.
- Be sensitive to cultural differences and adapt methods to local contexts.
- Apply appropriate ethical approaches to international, country level and local projects.
- Understand broad ethical issues as they relate to equity globally.

Further information on the Global Health concentration is provided in Appendix 7.

COURSES

The program requirements for the MPH degree include completion of:

- 10 full course equivalents (FCE) including
 - CHL 5004 Introduction to Public Health Sciences;
 - CHL 5300 Public Health Policy (except OEH specialization)
- Introductory course(s) in Epidemiology and Biostatistics; and,
- At minimum, one practicum placement.

Each specialty/field combines foundational public health research and practice course work, with discipline-specific specialization, and research skill and leadership development opportunities.

Students from each specialization begin their study together in the Introduction to Public Health Sciences core course (CHL 5004H), and reconnect with each other throughout the program at various research, leadership, and education events. This interdisciplinary approach to learning enables students to share a common public health perspective while strengthening their core disciplinary focus.

Course work across all fields provides theoretical foundations and skill development for approaching practice, assessing and critically evaluating public health approaches, considering ethical issues in public health practice and developing qualitative and/or quantitative research skills. A few of the specializations enable students to achieve certification in professional bodies, such as the provincial regulatory bodies of dietetics (Community Nutrition) and the Canadian Registration Board of Occupational Hygienists (Occupational and Environmental Health).

There are two emphases possible within the MPH degree: a practice-based and a research-based focus. These two foci are determined by the student's interests and career goals, and run parallel to each other over the two-year course of the degree program, with opportunity for cross-over from one emphasis to the other. For the practice-based focus the development of public health expertise through applied field work and research is considered a key element of the MPH program. All MPH students are required to complete at least one practicum. The practicum component is a key part of students' learning process. It is where students can gain skills in real public health practice settings in their specialized area, with the support of the university faculty as well as a field supervisor. It is a place where the theories and concepts taught in students' coursework bump up against application in practice. In general, the practica are designed to provide the students with an opportunity to apply and synthesize the theories, knowledge, concepts, principles and methods learned in their courses; and develop additional professional and/or research skills appropriate to their areas of interest. The kind of activities undertaken during the practicum depends on the specialization, the needs of the agency/organization sponsoring the practicum, and the student's own learning objectives and interests. Such activities include: undertaking a project (or part of a project) on behalf of the sponsoring agency/organization; or, participating in the ongoing business of the agency/organization.

The faculty have strong linkages with practitioners and researchers who supervise and provide mentorship for students. With faculty support, students identify learning needs, develop learning plans to guide their practicum experiences and report on their experiences during and after the placements. Feedback from students suggests that practica are extremely valuable opportunities to network, develop professional skills and experience new sectors of the health system. Students wishing to develop research skills may pursue research oriented practicum experiences. Students with a strong research focus will generally obtain their practicum experiences in academic research settings. Students in all specializations may take additional practicum placements beyond the one required, and also may construct a linked sequence of practicum placements - the capstone project - equivalent to a master's thesis. Specific course requirements within each MPH specialization can be found in Appendix 8 and the abbreviated course outlines are available in electronic format on the provided USB-stick.

OUTCOMES

Enrolment, Withdrawal & Graduations: The number of students enrolled full time in the MPH program has increased steadily in the past 5 years (Table 11). The most significant growth has occurred in the Health Promotion specialization. The Family and Community Medicine specialization is very small, largely because most students in this area prefer the MScCH option.

TABLE 11: Full time + Part time Enrolment (Headcount)

Public Health Sciences Enrolment	Fall 2005 (FT + PT)	Fall 2006 (FT + PT)	Fall 2007 (FT + PT)	Fall 2008 (FT + PT)	Fall 2009 (FT + PT)
Community Nutrition	19 + 6	21 + 2	21 + 6	16 + 3	18 + 2
Epidemiology	40 + 13	36 + 17	42 + 19	50 + 15	50 + 11
Family and Community Medicine	7 + 12	5 + 9	8 + 14	2 + 2	1 + 2
Health Promotion	25 + 8	27 + 7	31 + 8	41 + 8	48 + 9
Occupational & Environmental Health	20 + 5	21 + 6	23 + 6	20 + 4	22 + 6
Total	111 + 44	110 + 41	125 + 53	129 + 32	139 + 30

There is a significant cadre of part time students, though the numbers have been declining over the past 2 years. Part time students tend to be those who are employed (typically in public health) and who wish to upgrade their credentials.

The total enrolment data (Tables 12 and 13, for full-time and part-time students, respectively) reflects enrolments over the full academic year (fall, spring and summer terms), which are slightly higher than the fall headcounts, as shown in Table 11.

TABLE 12: MPH Total Enrolment, Transfers, Withdrawals & Graduations by Year (FULL TIME)						
Year ¹	New Enrolment	Total Enrolment ²	# Female (%) ³	# Visa (%) ⁴	Total Withdrawals ⁵	Total Graduations ⁶
2003-04	47	93	78 (83.9%)	7 (7.5%)	0	39
2004-05	63	116	98 (84.5%)	9 (7.8%)	2	42
2005-06	43	112	97 (86.6%)	6 (5.4%)	3	56
2006-07	56	111	91 (82.0%)	7 (6.3%)	0	49
2007-08	62	126	104 (82.5%)	6 (4.8%)	0	43
2008-09	60	130	108 (83.1%)	1 (0.8%)	1	62
2009-10	77	141	119 (84.4%)	2 (1.4%)	1	57

TABLE 13: MPH Total Enrolment, Transfers, Withdrawals & Graduations by Year (PART TIME)						
Year ¹	New Enrolment	Total Enrolment ²	# Female (%) ³	# Visa (%) ⁴	Total Withdrawals ⁵	Total Graduations ⁶
2003-04	11	46	36 (78.3%)	0	1	13
2004-05	12	47	39 (83.0%)	0	1	7
2005-06	17	52	42 (80.8%)	0	1	16
2006-07	20	49	41 (83.7%)	0	2	10
2007-08	19	53	42 (79.2%)	0	1	13
2008-09	10	35	27 (77.1%)	0	1	7
2009-10	7	36	28 (77.8%)	0	0	9

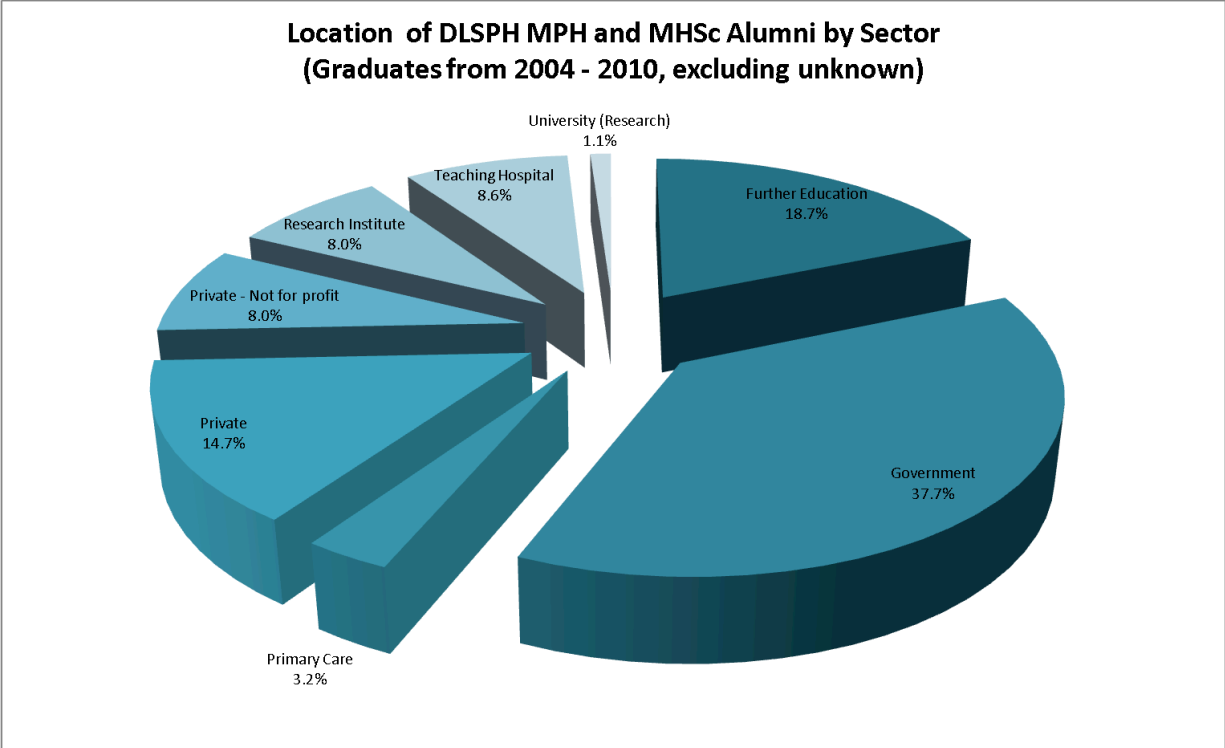
- ¹ Academic year starting September 1 with three entry points: (Sept, Jan. and May).
- ² All students registered in the program in that academic year continuing and new (for continuing, use numbers reported November 1).
- ³ Number of female students and (%).
- ⁴ Number of visa (international) students and (%).
- ⁵ All students who withdrew within that year.
- ⁶ All students who completed the program within that year.

As with the PhD program, the vast majority of the MPH students are female and Canadian citizens (or landed immigrants). The withdrawal rate is extremely low.

Time to Degree Completion: The mean and median times to degree completion (TTC), over the past seven years (2003/4 - 2009/10) are provided in Table 14. Students are undertaking their programs, largely in a cohort, resulting in efficient completion rates, even for part-time students.

TABLE 14: Mean (range) and Median Times to Completion of M.H.Sc./M.P.H.		
Specialization	Mean (range)	Median
Community Nutrition		
Full-time (n=46)	1.7 (1.3-2.7)	1.7
Part-time (n=24)	3.4 (2.3-4.0)	3.7
Epidemiology		
Full-time (n=96)	1.7 (1.0-2.3)	1.7
Part-time (n=61)	2.6 (1.3-6.3)	2.3
Family and Community Medicine		
Full-time (n=15)	2.0 (1.3-2.7)	2.0
Part-time (n=15)	3.4 (1.0-5.7)	3.5
Health Promotion		
Full-time (n=51)	1.9 (1.7-3.3)	2.0
Part-time (n=42)	3.1 (2.0-5.3)	3.0
Occupational & Environmental Health		
Full-time (n=62)	1.4 (1.3-2.0)	1.3
Part-time (n=8)	3.0 (2.3-4.3)	2.8

Career Paths for Graduates: Graduates of the MPH have been very highly sought after. Mostly, graduates are able to find good positions immediately after graduation. The chart below provides employment data after graduation, for 374 graduates for whom the information was available. The employment status of 79 graduates was unknown. More than one-third of the graduates find employment in the *Government* sector. This includes positions in local public health units, provincial agencies (Ministries of Health, the Ontario Agency for Health Promotion & Protection) and federal agencies (Health Canada, Public Health Agency of Canada). This is the most common for Epidemiology, Community Nutrition and Health Promotion graduates. Almost one in five of the MPH alumni return to university for further education - including doctoral studies, medical and dental schools. As expected, OEH alumni are more likely to work in the *Private (for profit)* sector and FCM graduates are most likely to be in *Primary care*.



STRENGTHS & CHALLENGES

Strengths

- **BREADTH AND UNIQUENESS OF SPECIALIZATIONS:** The U of T program is unique in its breadth of specializations and ‘uniqueness’ of some of the programs offered under the MPH program.
 - Currently, the MPH Community Nutrition is the only professional masters program in Canada that is specific to Public Health Nutrition. The University of Guelph and Brescia College at the University of Western Ontario both offer professional masters programs related to dietetics in general but these do not have a public health focus. Memorial University is in the process of developing a public health nutrition masters program.
 - There are no comparable MPH programs in Family and Community Medicine. The University of Western Ontario offers a clinically-oriented Master of Clinical Science degree and a research-oriented PhD in Family Medicine. These are not specifically Public Health degrees.
 - The MPH Health Promotion field differs in significant ways from other HP programs offered in Schools of Public Health across Canada, with respect to its orientation, breadth and depth of course offerings and practicum opportunities. The Universities of Alberta and Waterloo and Dalhousie and Simon Fraser Universities include *health promotion* components in their Master’s programs; many do not have a distinct HP program though.
 - The MPH Occupational and Environmental Health field is the oldest and most well established graduate program in occupational hygiene in the country. It is the only

Canadian Masters' degree specializing in occupational hygiene based in a School of Public Health which provides students with a cross-disciplinary appreciation of public health. The program's affiliation with the Occupational Medicine residency program provides unique access to health care practitioner working with the same client population.

Challenges

- **RECENT PROLIFERATION OF MPH PROGRAMS ACROSS CANADA:** Given the recent proliferation of MPH programs across the country, there may be difficulty finding appropriate practicum placements for students and employment opportunities for graduates. Most of the new programs in Ontario are generalist MPH's and it is hoped that the reputation of our programs and our students, together with our location in the GTA will mitigate this pressure. Nevertheless this situation must be monitored.
- **RELIANCE ON STATUS FACULTY:** Status and adjunct faculty are essential underpinnings for a professional program. They bring essential components of professional practice to our programs. However, the reliance on these faculty can pose a challenge, particularly because those that support the professional programs often work in organizations that do not have education as a mandate. Therefore this important resource is subject to fiscal realities and may be at risk. Again, this is an issue that needs to be carefully monitored.
- **STUDENT FUNDING:** Since the introduction of the current funding policy that guarantees a minimum level of support to PhD students, it was not possible to provide a similar guarantee for all our Master's students. It has therefore been difficult to compete with other graduate programs that offer financial incentives at the Master's level. This is a challenge shared by all of the Master's programs at the DLSPH. A funding model sustainable over the long-term, one that relies on the research funds of individual faculty members, is needed, especially given the recent proliferation of similar programs across Canada.

- **Master of Science (Biostatistics)**

OVERVIEW

At the present time, in the DLSPH, the MSc degree program is offered in one specialization only - Biostatistics. Biostatistics involves the development and application of statistical methodology to further understanding of data arising in public health, and the health and biological sciences more broadly.

OBJECTIVE

The objective of the MSc program is to prepare students for entry into a PhD program and for a career as a biostatistician to work in universities, government departments, hospitals, pharmaceutical/health corporations and other health agencies such as cancer research units, by providing training in the theory and practice of biostatistics.

COMPETENCIES

Graduates of the MSc program will learn:

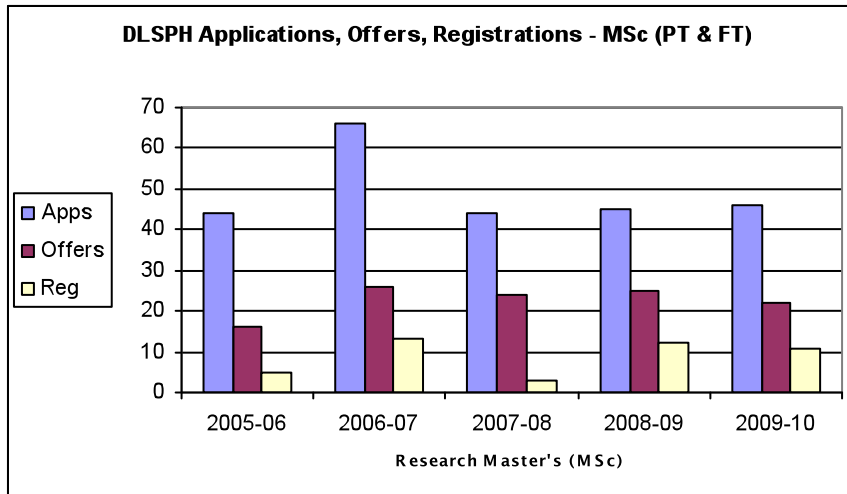
- **Mathematical statistical techniques:** Knowing the mathematical properties of statistical methods and to be able to read the statistical literature to use new statistical methods and to understand the strengths and weaknesses of these new methods.
- **Computational proficiency:** Handling large datasets, solving for numerical results in statistical analyses.
- **The art of data analysis:** Understanding how to link scientific questions and mathematical statistical methods. Translating the scientific questions into mathematical language, and the results of a statistical analysis back to the scientist.

ADMISSION REQUIREMENTS

In addition to the minimum standard admission requirements of a 4 year undergraduate degree with a minimum B standing in the 4th year and demonstrated proficiency in English language, prerequisite courses in linear algebra, advanced calculus, probability and mathematical statistics are required.

APPLICATIONS

Over the past 5 years the annual number of applications to the MSc program has varied, though typically around 45. The acceptance rate is also quite variable, and somewhat lower than for other programs at the school. Possible reasons include the lack of funding support, which is often provided in competing programs.



	2005-06	2006-07	2007-08	2008-09	2009-10
Offer rate (%)	36%	39%	55%	56%	48%
Acceptance rate (%)	31%	50%	13%	48%	50%

PROGRAM DESCRIPTION

The MSc is a 5.0 full credit equivalent program that can be completed in one year of study. Students may choose between two formats:

1. *A course only version of the MSc:* This option appeals to most students and meets the needs of those who intend to pursue a PhD in biostatistics and those who plan to join the workforce after completing the MSc.
2. *A thesis version of the MSc:* This option appeals to mature students who are already working as biostatisticians, and who have a clearly identified research area they wish to pursue.

In the Division of Biostatistics at the DLSPH, the student receives a deep and broad experience in all aspects of data analysis, mathematical statistics, classical and modern methods in linear and non-linear models, survival analysis, and may choose from a collection of more specialized topics such as Bayesian methods, statistical methods applied to genetics, and computer intensive techniques.

COURSES

Required courses (4.0 FCE)		
CHL5004H	Introduction to Public Health Sciences	(0.5)
CHL5207Y	Laboratory in Statistical Design	(1.0)
CHL5210H	Categorical Data Analysis	(0.5)
STA2112H	Mathematical Statistics I	(0.5)
STA2212H	Mathematical Statistics II	(0.5)
CHL5250H	Biostatistics Seminar	(0.5)
	Plus one of the following	
CHL5209H	Survival Analysis I	(0.5)
STA2209H	Lifetime Data Modeling	(0.5)

In addition, students are required to undertake two electives (1.0 FCE) from the following options: CHL5201H Introduction to Biostatistics II (0.5) CHL5204H Survey Methods in Health Sciences II (0.5) CHL5222H Longitudinal Data Analysis (0.5) CHL5223H Applied Bayesian Methods (0.5) CHL5224H Statistical Genetics (0.5) CHL5225H Advanced Statistical Methods for Clinical Trials (0.5) CHL5401H Introduction to Epidemiology (0.5) CHL5402H Epidemiologic Methods II (0.5) STA2101H Methods of Applied Statistics I (0.5) CHL7001H Statistical Methods for Genomics and Bioinformatics (0.5) CHL7001H Statistical Methods in Data Mining (0.5) CHL7001H Spatial Modeling (0.5) CHL7002H Simulation Methods (0.5).

The required two term course, CHL 5207 Laboratory in Statistical Design, includes one two hour lecture and four hours practical work per week. The classroom time is spent on introducing the student to applied statistical issues in research. The practicum is meant to provide the student with hands-on experience with design and analysis issues encountered by applied statisticians in the workforce, typically at surrounding hospitals or research institutes. This also provides opportunities for research assistantships. The Biostatistics seminars, given mainly by faculty members and guest speakers, are intended to provide students with an opportunity to learn, or have some exposure to, a variety of current advanced statistical methods used in health sciences research.

OUTCOMES

For many years, the MSc program was actually offered with several specializations - Biostatistics, Epidemiology, Occupational & Environmental Health and Social & Behavioural Health Sciences. Effective September 2004, the MSc programs were merged with their MHSc counterparts of the same name, for a variety of reasons. There was no corresponding MHSc (later to become the MPH) for Biostatistics and therefore the MSc degree was retained for the Biostatistics specialization only. The data provided in the tables below, include the last of the MSc students in the S&BHS and Epi specializations.

Enrolment, Withdrawal and Graduations: Over the past five years, the number of students enrolled in the MSc has initially declined, reflecting the merging of the three fields into the MHSc (MPH). Enrolment in the Biostatistics specialization is now increasing, with a corresponding increase in part time students.

TABLE 15: MSc Biostats Full time + Part time Enrolment (Headcount)

	Fall 2005 FT + PT	Fall 2006 FP + PT	Fall 2007 FT + PT	Fall 2008 FT + PT	Fall 2009 FT + PT
S & B Health Science	2 + 2	0 + 2	0	0	0
Biostatistics	5 + 1	12 + 3	3 + 1	9 + 4	12 + 5
Epidemiology	8 + 1	0	2 + 0	0	0
Total	15 + 4	12 + 5	5 + 1	9 + 4	12 + 5

The total enrolment data (Tables 16 and 17), for full- and part-time students, respectively, reflect enrolments over the full academic year (fall, spring and summer terms), which are slightly higher than the fall headcounts as shown in Table 15, above.

As with the other programs in the School, the majority of students are female, though in Biostatistics there are proportionately more males. Although enrolment numbers are small, there are proportionately slightly more international students in the MSc. Withdrawal rates are low.

TABLE 16: Master's Total Enrolment, Transfers, Withdrawals & Graduations by Year (FULL TIME)

Year ¹	New Enrolment ²	Total Enrolment ³	# Female (%) ⁴	# Visa (%) ⁵	Total Transfers	Total Withdrawals ⁶	Total Graduations ⁷
2003-04	17	58	45 (77.6%)	1 (1.7%)	0	0	18
2004-05	5	42	32 (76.2%)	0 (0.0%)	0	2	14
2005-06	4	19	14 (73.7%)	0 (0.0%)	0	0	31
2006-07	11	15	8 (53.3%)	3 (20.0%)	0	0	6
2007-08	3	5	4 (80.0%)	0 (0.0%)	0	1	12
2008-09	8	8	4 (50.0%)	0 (0.0%)	0	2	2
2009-10	10	12	6 (50.0%)	4 (33.3%)	0	0	6

¹ Academic year starting September 1 with three entry points: (Sept, Jan. and May).

² Sum of intake for each entry point of a given academic year.

³ All students registered in the program in that academic year continuing and new (for continuing, use numbers reported November 1).

⁴ Number of female students and (%).

⁵ Number of visa students and (%).

⁶ All students who withdrew within that year.

⁷ All students who completed the program within that year.

TABLE 17: Master's Total Enrolment, Transfers, Withdrawals & Graduations by Year (PART TIME)

Year ¹	New Enrolment ²	Total Enrolment ³	# Female (%) ⁴	# Visa (%) ⁵	Total Transfers	Total Withdrawals ⁶	Total Graduations ⁷
2003-04	1	10	7 (70.0%)	0	0	1	2
2004-05	0	8	5 (62.5%)	0	0	1	5
2005-06	1	5	3 (60.0%)	0	0	0	0
2006-07	2	6	4 (66.7%)	0	0	2	2
2007-08	0	1	1 (100.0%)	0	0	0	1
2008-09	5	6	4 (66.7%)	0	0	0	0
2009-10	2	5	4 (80.0%)	0	0	1	2

¹ Academic year starting September 1 with three entry points: (Sept, Jan. and May).

² Sum of intake for each entry point of a given academic year.

³ All students registered in the program in that academic year continuing and new (for continuing, use numbers reported November 1).

⁴ Number of female students and (%).

⁵ Number of visa students and (%).

⁶ All students who withdrew within that year.

⁷ All students who completed the program within that year.

TABLE 18: Mean (range) and Median Times to Completion of MSc program in Years

Biostatistics	Mean (range)	Median
Full-time (n=37)	1.2 (0.7-5.0)	1.0
Part-time (n=6)	2.3 (1.3-5.3)	1.5

Time to Degree Completion: The mean and median times to completion for the MSc students over the past 7 years are just over 1 year. Even part time students complete their programs efficiently.

Career Paths for Graduates: Graduates of the MSc in Biostatistics have been very highly sought in universities, research hospitals, and various government organizations and in the private sector such as the pharmaceutical industry. Most graduates find suitable positions immediately after completion of the program. More than one-fourth of graduates continue pursuing further education, typically in a doctoral degree in Biostatistics. Less than one-third of graduates find employment in the private sector. The majority join research groups at teaching hospitals (e.g., University Health Network, SickKids), research institutes (e.g., Samuel Lunenfeld), and government organizations and agencies (e.g., Cancer Care Ontario, Institute for Clinical Evaluative Sciences, Ontario Agency for Health Promotion & Protection).

STRENGTHS & CHALLENGES

Strengths

The MSc in Biostatistics is unique in its dual focus on statistical methodology and practical training. Students benefit from the rigorous methodological course work and from the faculty-supervised research practicum - together they prepare the students to be fully engaged in various research environments upon graduation. The program is able to draw on a particularly rich and diverse biostatistics faculty, which includes numerous members from local, internationally renowned research institutions and teaching hospitals.

Challenges

Since the introduction of the current funding policy that guarantees a minimum level of support to PhD students, it was not possible to provide a similar guarantee for all our Master's students. It has therefore been difficult to compete with other graduate programs that offer financial incentives at the Master's level. This is a challenge shared by all of the Master's programs at the DLSPH. A funding model sustainable over the long-term, one that relies on the research funds of individual faculty members, is needed, especially given the recent proliferation of similar programs across Canada.

MASTER OF SCIENCE IN COMMUNITY HEALTH (MScCH)

OVERVIEW

The Master of Science in Community Health (MScCH) program is the DLSPH's most recently-implemented degree program, having been approved and admitting its first students in 2007. It differs from the School's other degrees in its emphasis, content, intended audience and method of delivery. A 5.0 credit program, the MScCH is geared to applicants with very specific academic career development goals that are relevant to practicing health professionals. In addition, this program was developed with a Type 1 Graduate Diploma Option consisting of 3.5 FCEs, as a specified subset of the required courses. Five specializations are currently offered: Addictions and Mental Health; Family and Community Medicine; Health Practitioner Teacher Education; Occupational Health Care and Wound Prevention and Care. The Health Practitioner Teacher Education field is seen to be broadly generic and applicable to all health professions, while the other specializations represent specific areas of professional practice.

OBJECTIVES

Objectives of the program are:

- To provide experienced health practitioners, whether they work in either academic or community settings (or both), with the skills to become effective clinical/public health leaders and teachers in their specific professional discipline.
- To further extend the continuum of higher education opportunities for health professionals to exceed the current traditional continuing education. It emphasizes critical, analytic, interpretive and scholarly skills.
- To develop professional models for improved interprofessional team practice and education spanning clinical, community and public health domains of practice.

The detailed objectives for each specialization are provided in Appendix 9.

The program largely offers a flexible, time-efficient, classroom-based, modular programmatic delivery model. It uses existing facilities and current faculty within the Dalla Lana School of Public Health and Faculty of Medicine.

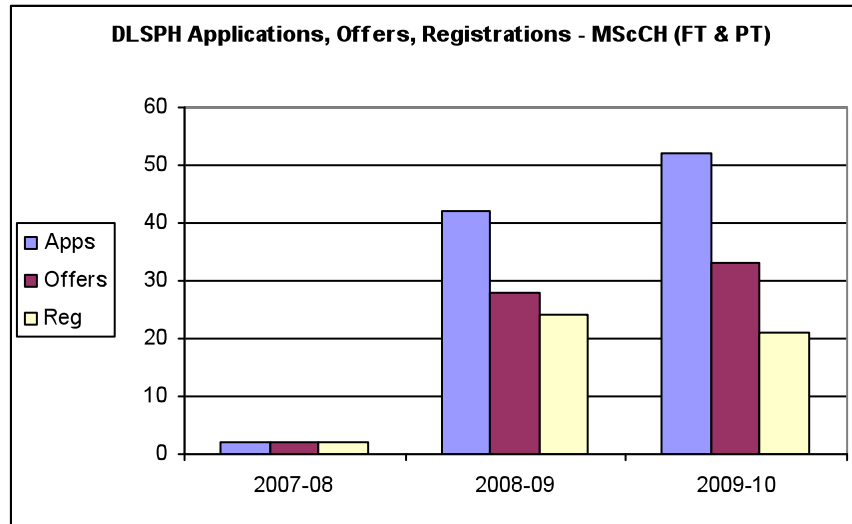
ADMISSION REQUIREMENTS

The MScCH is a graduate-level, professional degree program, which is intended for and limited to established health professionals who wish to enhance their professional knowledge and skills, while being able to remain employed/in practice. Admission to the FCM stream requires appropriate licensure in a regulated health profession (or equivalent) and a valid license to practice in Canada or in the applicant's home jurisdiction. This program is not intended to assist applicants in becoming licensed health practitioners in Canada.

Applicants who have demonstrated interest and ability in scholarly work throughout their health professional training will be given preference. Applicants must also have a demonstrated proficiency in the English language.

APPLICANTS

When the program opened in 2007, students were initially enrolled in the MHSch, and then transferred to the MScCH. Therefore, the data for 2007-8 in the Figure below are incomplete.



	2007-08	2008-09	2009-10
Offer rate (%)	100%	67%	63%
Acceptance rate (%)	100%	86%	64%

PROGRAM DESCRIPTION

The MScCH was designed to enable a choice of program completion options. The MScCH may be completed within 12 consecutive months (full time), or students can take up to 5 years to complete the degree on a part-time basis. A full time student would need to commit to a minimum of 8-14 weeks, full-time, on-campus class attendance plus 160-320 practicum hours of supervised and evaluated field work.

The MScCH degree requires the completion of 5.0 full course credit equivalents (FCE) including at least one supervised, 160-hour, field placement/practicum in which learners are expected to apply their new skills and record and reflect upon their experiences. All students will complete the introductory public health course plus one additional “core” course, with the majority also completing one or more graduate courses addressing the theories and strategies of effective teaching. Field specific required courses, electives and one or two supervised field placements or practica round out the program. An OCGS-defined Type 1 Diploma option will consist of 3.5 FCEs, as a specified subset of each fields’ courses. There is no thesis requirement. The detailed requirements for each specialization are provided in Appendix 9.

Many of the courses in the program combine a total of 26-39 hours of intensive “on campus” classroom activities, accompanied by an extended “off campus” study period. Other courses may run in the more traditional longitudinal 13-week semester format. In addition, one course (CHL5601) is offered on-line. The practicum may run concurrently with the formal course work.

The program was introduced with four initial specializations: Health Practitioner Teacher Education (HPTE); Family and Community Medicine (FCM); Wound Prevention and Care (WPC) and Public Health Nutrition (PHN). In 2009, two additional fields were approved: Addictions and Mental Health, and Occupational Health Care. More recently, the PHN field became an advanced standing option in the MPH, making the MScCH PHN field not necessary.

OUTCOMES

The number of students enrolled in the program has increased, with expected emphasis on part time enrollment. Though the data are incomplete this trend has continued for the 2010-11 entry cycle.

It is too early in the history of the MScCH to consider time to completion trends or other year-over-year data. However, we would note that the program has had 16 full-time and 25 part-time students graduate to date.

	Fall 2008 FT + PT	Fall 2009 FT + PT
Addictions & Mental Health	NA	1 + 1
Family & Community Medicine	0 + 7	1 + 11
Health Practitioner Education	5 + 16	1 + 21
Public Health Nutrition	4 + 5	0 + 3
Wound Care	0 + 2	2 + 5
Total	9+30	5+41

Special Features of this Professional Masters Degree

- Health professional practice orientation
- Emphasis on basic theory as foundation
- Learn useful skills and strategies
- Critical appraisal education and clinical literature
- Familiarity with research project issues
- Experience from individual field work practice
- Accessible for distance and part- time
- Classroom materials presented face-to-face
- Educational Technology as a Resource
- Academic Skills enhancement in Presentation/Writing
- Best Practice Faculty Development design

The design of the courses is also quite innovative within a program structure designed to accommodate the needs of working professionals. Several of the courses in this program are delivered in intensive several days concurrent “on campus” classroom modules totaling 26-39 contact hours per course. In “off campus” pre and post study periods students complete readings and research assignments. Other courses include one entirely web based course and service learning practice.

Many health professionals are required to participate in regular, formal Continuing Education to maintain their license to practice. Students in the MScCH program have the opportunity to receive partial credit in specified introductory graduate courses for work previously completed in specified matched Faculty of Medicine Continuing Education (CE) courses taught by the same graduate faculty as in the MScCH program. In all cases, the students are required to complete additional work beyond the CE requirements in order to receive the graduate course credit.

C. OTHER EDUCATIONAL ACTIVITIES

This section provides an overview of other educational activities that are part of the DLSPH program offerings. These activities include:

- i. Two Royal College of Physicians and Surgeons Specialty Training Programs in Community Medicine and Occupational Medicine
- ii. The Undergraduate Medical Education Program in Public Health - *Determinants of Community Health* (course core and elective curriculum)
- iii. Diploma in Industrial Health
- iv. Undergraduate Arts & Science Programs

ROYAL COLLEGE OF PHYSICIANS AND SURGEONS SPECIALTY TRAINING PROGRAMS IN COMMUNITY AND OCCUPATIONAL MEDICINE

COMMUNITY MEDICINE RESIDENCY PROGRAM

The Community Medicine Residency Program (CMRP) at UofT is the oldest and largest in Canada. It was originally housed in the Department of Preventive Medicine & Biostatistics within the Faculty of Medicine (FoM), then in the Department of Public Health Sciences and moved along with PHS into the DLSPH.

Although the Royal College requires residency programs to be located within Faculties of Medicine, it is felt that the DLSPH as an EDU-A is best situated to house the program. As the DLSPH transitions to independent Faculty status, a formal Memorandum of Understanding between the DLSPH and the FoM will be necessary to ensure that the program meets the Royal College accreditation standards. This will include a dual reporting relationship of the Director of the Program to the FoM, through the Vice Dean Postgraduate Medical Education and to the Director of the DLSPH. The program currently is fully approved by the Royal College. The program has 100% pass rate for residents setting the Royal College exam.

Objectives, learning outcomes, competencies: To produce Royal College certified physicians who have the competencies to diagnose and treat populations as well as individuals to maintain and improve health. The Community Medicine Residency Program is a five-year specialty training program which has five components:

- Clinical training - 2 years provided by Department of Family & Community Medicine (DFCM) to lead to Certification from the College of Family Physicians of Canada.
- Graduate training: - MPH program in epidemiology or equivalent (16-21 months)

YEAR	# CM Residents
2010-2011	35
2009-2010	34
2008-2009	34
2007-2008	30
2006-2007	26

- Field Rotations (15 months core rotations at affiliated sites (local public health agencies, OAHPP, MOHLTC, PHAC). Rotations include Communicable Disease (3 months), Environmental Health (3 months), Planning Policy and Chronic Disease (3 months) and Senior Management (6 months).
- Academic half days every Friday morning
- Leadership: chief resident etc

Admission requirements, admission policies/procedures: The program currently has 35 residents spanning the five years. 31 are active and 4 are on personal or parental leave. Of the 35 we have 21 Canadian medical graduates (CMG) direct entry, 3 international medical graduates (IMG) direct entry, 3 IMG assessed through the independent Centre for the Evaluation of Health Professionals Educated Abroad entry, 2 transfers, 3 re-entry (1 Ontario, 2 Nova Scotia). Applicants apply through four routes only:

1. Canadian Medical Graduates apply directly from medical school through Canadian Resident Matching Service (CaRMs) (usually 15-20 applicants for 4 positions)
2. International medical graduates apply through CaRMs after completing evaluating exams (usually >100 applicants for 1 position)
3. Transfer applicants apply from UofT or other Ontario post graduate program (usually 2-3 for 1-2 positions)
4. Re-entry applicants apply if licensed in Ontario with 12 months minimum practice experience (few applicants for 0-1 positions)

All applicants must provide a personal letter, 2-5 reference letters and all post secondary education transcripts (expect minimum B+ in Statistics).

Program Innovation or Creativity: The CMRP has significantly increased the number of residents in the past five years to meet the needs of public health renewal, as well as applicant interest. In addition, the program has unique partnerships with:

- **The Northern Ontario School of Medicine (NOSM):** The UofT CMRP has supported the development of the NOSM CMRP through a number of activities e.g., Program directors sit on each others committees; Toronto Public Health provides Communicable Disease rotation for NOSM residents; UofT residents provided resident input for NOSM prior to their first residents starting; UofT Program Director has mentored the NOSM Program Director; The NOSM residents and faculty participate in the Friday morning rounds by distance. In addition, often residents from Queen's, and Ottawa also benefit from the UofT rounds.
- **Barrie, Ontario (Simcoe Muskoka district):** The UofT program developed a Distributed Medical Education site with the Department of Family and Community Medicine to provide one slot for a resident to be trained at the Royal Victoria Hospital in Barrie for Family Medicine (FM). As part of this arrangement the Simcoe Muskoka Health Unit provides a one month public health rotation for all FM residents. This program may need to be on hold for 2011 as the RVH construction is behind schedule.
- **Government of Nova Scotia:** The UofT program partnered with PHAC to support a re-entry resident who will return service in Nova Scotia. The resident has completed her MPH through

distance and most of her core rotations in Nova Scotia and will set the exams in the spring of 2011. A second resident will start in October 2010 with a direct arrangement with Nova Scotia.

- **Personal and Program Learning Plans and Portfolios:** The program has developed paper-based learning plans for each resident to plan and track their achievement and demonstration of competency (Royal College, program and personal); and for the program to ensure that there are sufficient learning and assessment opportunities to meet Royal College standards.

Future innovations:

- Joint certification pediatrics/occupational medicine with community medicine
- Proposed development of a DLSPH MPH focused specifically on CM residents (general and global health in addition to Epidemiology): A number of residents pursue graduate training elsewhere due to interest in global health or desire for a more general MPH than the MPH offered at DLSPH. This MD MPH could be developed in collaboration with UME.

Comparable programs in Canada: 12 other CMRP in Canada: None in Atlantic Canada, 4 in Quebec (McGill, UoM, Sherbrooke, Laval), 4 other Ontario (McMaster, Queen's, Ottawa, NOSM) 1 Manitoba, 2 Alberta (Calgary and UoA, 1 UBC).

Outcomes/ Graduate's Employment/Career Paths: The CMRP housed in the School has produced most of the specialists practicing in Canada today including the current Chief Public Health Officer for Canada, the CEO of the OAHPP, the previous Chief Medical Officers of Health for Ontario and the current Medical Officer of Health for Toronto. Other graduates are in positions of Medical Officers of Health in local public health units, Associate Chief MOH (Ontario), Academic Consultants (OAHPP), and senior administrators in other provincial health agencies (e.g., CCO).

OCCUPATIONAL MEDICINE RESIDENCY PROGRAM

The Occupational Medicine residency program at the University started to admit residents in 1994. Initially Occupational Medicine was a five year specialty program but, in 2006 it became a two year subspecialty program. This is a small postgraduate program with only one position per year.

Currently entry into the program occurs after successfully completing three years of core internal medicine training. However the Royal College Committee on Specialties has recently supported a proposal for a second route of entry through Community Medicine. Final approval of this route of entry is pending and is anticipated in 2011. This will allow residents trained in Community Medicine to be eligible to do subsequent training in the subspecialty of Occupational Medicine.

The Occupational Medicine residency program was last reviewed externally (by the Royal College) in 2007 and it was granted full approval with no significant weaknesses being identified. At that time, there were six residents in the specialty program. The next external review is scheduled for 2013. As well, an internal review (by the University of Toronto) was carried out in June, 2010 to facilitate preparation for the 2013 review.

Objectives / Learning Outcomes / Competencies: The Objectives of Training and Specialty Training Requirements in Occupational Medicine of the Royal College of Physicians and Surgeons of Canada provide a detailed description of the objectives of training in CanMEDS format. The objectives for each CanMEDS is included in the Appendix 10.

Admission Requirements: At present admission occurs in the Canadian Residency Match Year 4 match after successful completion of three years of core internal medicine training. The admissions process includes a review of the candidate's performance to date in residency training, a personal letter, three letters of references and an interview. There is a selection subcommittee of the Occupational Medicine Residency Committee comprised of academic faculty and a resident already in the Occupational Medicine program. In the future, after the anticipated approval of a new route of entry through Community Medicine, applicants who have successfully completed residency training in Community Medicine will also be considered for training spots in the subspecialty of Occupational Medicine with the selection involving a similar process. It is anticipated that previous training in Community Medicine may co-count for up to one year of training in Occupational Medicine.

The Royal College of Physicians and Surgeons of Canada defines Occupational Medicine as a medical discipline that deals both clinically and administratively with the health needs of individuals and groups with respect to their working environment and includes the recognition, evaluation, control, management and prevention of occupationally-related diseases and injuries.

Program Description: There is currently one resident enrolled in the program and he is the first to enter the new two year subspecialty stream. Previously all of the 12 residents who completed the five year specialty program successfully passed the Royal College examination to become Fellows of the Royal College of Physicians and Surgeons of Canada (FRCPC) in Occupational Medicine. In the new two year subspecialty program, the first year of the program is primarily a didactic year with residents spending one academic year at the DLSPH, completing a Diploma in Industrial Health (DIH) or Master's Degree (MScCH) in the Occupational Health Care field. This provides core training in areas relevant to the practice of Occupational Medicine such as toxicology, epidemiology, occupational hygiene and

organization and management of occupational health services. The remaining time is spent doing a combination of training in clinical areas relevant to Occupational Medicine such as clinical toxicology, dermatology, respirology and musculoskeletal problems as well as placements in industry and government (Ministry of Labour and the Workplace Safety and Insurance Board).

Program Innovation or Creativity: This is one of only two Royal College Occupational Medicine residency programs currently accredited in Canada. The program provides a combination of clinical rotations, didactic course work and industry and government placements coupled with an academic half day back curriculum, Occupational Medicine didactic rounds, and book club to allow comprehensive training in all facets of Occupational Medicine. The Program Director, Ron House is the past president and a current member of the national Occupational Medicine Specialty Committee which has been working with the Royal College to develop a new route of entry from Community Medicine for subspecialist training in Occupational Medicine. This program innovation will allow a reintegration of Community Medicine and Occupational Medicine and should stimulate interest in Occupational Medicine training.

Comparable Programs in Canada: The only other Occupational Medicine residency program in Canada is at the University of Alberta. L'Université de Montréal has also applied to the Royal College for accreditation of a training program in the subspecialty of Occupational Medicine and the accreditation process (which has been going on for more than a year) is nearing completion. It is anticipated that there will be three accredited training program in Occupational Medicine across the country in 2011.

Outcomes/ Graduates' Employment / Career Paths: Most graduates (12 physicians having completed the 5-year specialty program) engage in a mixture of practice activities such as consulting work at several companies as well as the Workplace Safety and Insurance Board and other sites. Some also do consulting work for the insurance sector, in particular in relation to assessment of long-term disability and return to work. We encourage graduates of the residency program to take part in academic activities in the residency program (such as participation in the half day back didactic sessions and industry placements) and to incorporate these into their practice mix. Six of our former trainees are currently participating in some aspect of the residency program.

Our graduates are also starting to assume leadership positions in Occupational Medicine. One of our graduates, Dr. Roohi Qureshi, is the Assistant Program Director for the Residency program and the current and past presidents of our national specialty society, The Occupational Medicine Specialists of Canada, are former trainees in our residency program. Our program has only been producing graduates since the late 1990's and our eldest graduates are only in their early 40's. It is anticipated that leadership positions in Occupational Medicine in Canada will increasingly be held by graduates of our program.

UNDERGRADUATE MEDICAL EDUCATION – COURSES IN PUBLIC HEALTH

Public health competencies are core components of the undergraduate medical curriculum as described in the undergraduate medical education (UME) program at UofT objectives, Faculty of Medicine Vision, Accreditation standards and Medical Council licensing requirements.

Objectives, Learning Outcomes, Competencies: UME depends on the DLSPH for a number of core and elective public health components. Determinants of Community Health (DOCH) is the overall public health course with four (4) aspects currently:

- DOCH1 is half a day per week over the full first year and covers basic sciences of community health along with tutorials and experiential field visits to schools, home care and community based health promotion agencies. There are 250 students in this course.
- DOCH2 is half a day per week over the full second year and introduces the basic principles of community based research with each student completing an independent research project with a community health agency. There are approximately 230 students in this course.
- DOCH3 - Transition to Clerkship (TTC) is currently a 3 week block course at the beginning of the clerkship year with focus on the manager role as well as key concepts in Evidence-Based Medicine, Complementary and Alternative Medicine, public health and death certification. There are approximately 224 students in this course.
- DOCH4 is a one week block course held five times over the final year. It reviews and integrates health system, EBM, patient safety, CAM, aboriginal health, occupational health and complex care in the community. DOCH 4 will be fully integrated into the new UME course Transition to Residency which will start in 2012. There are approximately 224 students in this course (one fifth of the class in each block).

In addition to DOCH, the DLSPH provides support for medical student electives in public health from U of T and other Canadian as well as international medical schools and provides faculty back up for the student run Public Health Interest Group. The DLSPH provides the UME faculty lead for the Canadian Public Health Education Network. Finally there has been initial discussion about the development of an MD-MPH stream. [For more information refer to the Faculty of Medicine self study posted on the Dean's web site

<http://www.facmed.utoronto.ca/Assets/FacMed+Digital+Assets/Leadership/FacReview/Self+Study.pdf?method=1>.

The DOCH course is renowned in Canada and beyond for its extensive coverage of public health curriculum. U of T has more hours of curriculum in public health than any other Canadian medical school. The experiential learning in first year as well as the independent research project completed in the second year are of special note in terms of innovation. The new course Transition to Residency will be an additional opportunity to integrate DOCH curriculum into final year student learning and preparation for their career choice. The expansion of the undergraduate medical program to the University of Toronto at Mississauga (UTM) campus will provide opportunities to enhance links with Peel Public Health and the local community based agencies and care providers for DOCH experiences.

STRENGTHS & CHALLENGES:

- The UME student enrolment has grown over the past five years to meet societal need. In addition the UTM expansion requires additional resources for the special needs of the expansion (distance, travel etc). The Association of Faculties of Medicine in Canada (AFMC) Future of Medical Education Report in Canada (2010) confirms the importance of core curriculum in "Prevention and Public Health" (recommendation IV), as well as community based and inter-professional learning.
- The DLSPH is well situated to provide leadership in these areas to support UME excellence in future medical education. However, the DLSPH needs to urgently address the essential issues of faculty recruitment, retention, career development, sustainability and succession planning to ensure the UME public health curriculum needs are met for the long term.

DIPLOMA IN INDUSTRIAL HEALTH

The Faculty of Medicine Diploma in Industrial Health (DIH) provides postgraduate training in occupational health and safety. The program is designed for physicians/clinicians desiring didactic training in occupational health. It is of particular interest to foreign trained students who may not meet the eligibility requirements of the School of Graduate Studies or physicians desiring a shorter program than the Master's programs. It can be completed full-time (9 months) or part-time (within 5 years of first registration). Required courses include Statistics and Epidemiology (e.g. Community Health Appraisal Methods), Perspectives in Occupational Health and Safety, Advanced Clinical Studies, Occupational Hygiene and Environmental Health and electives to make up 5 full course credits.

UNDERGRADUATE ARTS & SCIENCE PROGRAMS

The educational offerings at the DLSPH have been predominantly at the graduate level, although some faculty have been involved in undergraduate teaching in courses offered in the Faculty of Arts and Sciences (FAS). Specifically, K. Domnick (retired 2008) taught in the Health Studies Program at University College, B. Harvey teaches in the Human Biology Program and G. Einstein teaches a Health Psychology course in the Department of Psychology. In the Human Biology program, 2 courses have been developed and are being taught:

- "Epidemiology in Health and Disease"
Fall 2008: 21 students in HMB442
Winter 2010: 33 students in HMB342
Winter 2011: 125 students currently registered for HMB342
- "Statistics Applied to Human Biology"
Fall 2009: 55 students in HMB325
Fall 2010: 84 students in HMB325

There is a growing understanding of the benefits that would accrue from the design and teaching of courses to undergraduates in the FAS in several important ways:

- Engaged and well prepared undergraduates will create an energy adding to the environment at DLSPH;
- Interested undergraduates will seek out faculty who need research assistants and provide hands-on help on projects either as work-study students or as volunteers;
- There will be opportunities for teaching and grading among DLSH graduate students.
- Exposure to public health will attract graduate students to the DLSPH.
- Undergraduate teaching will bring a new revenue stream to the DLSPH.

A Committee has been established, chaired by Professor Paul Corey, to design and develop some possible courses and to work with FAS towards establishing these courses. The committee has proposed 3 courses (0.5 FCE, each)

- PHS200 Introduction to Public Health
- PHS201 Introduction to Public Health Methods
- PHS300 Social and Behavioural Issues in HIV Prevention

The FAS has now approved these courses and it will now be up to the DLSPH to develop a business model and ensure that moving forward on this initiative will be in the best interests (academically and financially) of the School.

D. INNOVATIONS & INITIATIVES IN EDUCATION

This section provides an overview of additional innovations and initiatives in education that are part of the DLSPH program offerings. These programs include:

- i. Collaborative programs
- ii. Strategic Training in Health Research (STIHR) grant programs
- iii. Centre for Critical Qualitative Research

COLLABORATIVE GRADUATE PROGRAMS (NON-DEGREE GRANTING PROGRAMS)

In addition to the research and professional degree programs, the DLSPH participate in unique, non-degree granting, collaborative graduate programs. These innovative programs emerge from cooperation between two or more graduate units, often from across multiple Faculties, providing students with a broader base from which to explore a novel interdisciplinary area or a special development in a particular discipline, to complement their degree studies. A student must be admitted to and enrolled in one of the collaborating graduate units and must fulfill all the requirements for the degree in that home unit, in order to participate in a collaborative program. On successful completion of requirements for the collaborative program, a notation is added to the student's transcript and the student receives a parchment signifying his/her completion.

Currently, the DLSPH participates in 12 Collaborative Programs, across the University. These programs are:

- Aboriginal Health
- Addiction Studies
- Aging, Palliative & Supportive Care across the Life Course
- Bioethics
- Cardiovascular Sciences
- Community Development
- Environment and Health
- Global Health
- Health Care, Technology & Place
- Health Services & Policy Research
- Women & Gender Studies
- Women's Health

A brief description of a selection of these collaborative programs is presented in Appendix 11. A brief description of the Doctoral Collaborative Program in Global Health is presented below.

COLLABORATIVE DOCTORAL PROGRAM IN GLOBAL HEALTH (CPGH)

FACTS & FIGURES: Current Student Numbers by Department/Faculty

- Dalla Lana School of Public Health: 9
- Department of Anthropology, Faculty of Arts & Science: 1
- Department of Health Policy, Management and Evaluation, Faculty of Medicine: 2
- Graduate Department of Rehabilitation Science, Faculty of Medicine: 2
- Lawrence S. Bloomberg Faculty of Nursing: 1

The Collaborative Doctoral Program in Global Health (CPGH) is sponsored by the DLSPH in the Faculty of Medicine. The Program is a special designation within existing doctoral programs. The Collaborative Program views ‘global health’ in an integrative manner, and focuses on the relationships among local, regional, national, and international forces and factors that influence health and on the development of effective interventions and policies that will address or shape these. The objectives of the program are:

- To enable students to develop an understanding of global health in terms of the interaction of global, national, regional, and local forces, processes, and conditions;
- To ground training in disciplinary perspectives and engage in transdisciplinary efforts through concrete collaborative global health research projects;
- To offer mentorship opportunities by committed and experienced faculty with a diversity of theoretical, operational and methodological perspectives on global health; and,
- To grapple with complex health-related policymaking by the range of international, national, and local actors in a wide range of sectors that shape policies and carry out activities that affect health.

The program is available to PhD students in the following departments and faculties:

- Programs across the Dalla Lana School of Public Health
- Faculty of Medicine (Health Policy Management and Evaluation and Graduate Department of Rehabilitation Science)
- Lawrence S. Bloomberg Faculty of Medicine
- Leslie Dan Faculty of Pharmacy
- Faculty of Law
- Faculty of Arts and Science (Departments of Anthropology and Political Science).

Five centres (Centre for International Health, Centre for Global Health Research, Joint Centre for Bioethics, Munk School of Global Affairs and Centre for Health Services Sciences) are supporting units of the collaborative program.

The Program integrates methods and insights from the scholarly arenas of the participating partners. It provides a vibrant intellectual community for doctoral students and research faculty to interact and learn from one another. Students are encouraged to think critically about dominant paradigms and to integrate academic research skills in an applied community or policy setting. Graduates of the program will have the skills to work effectively with trans-disciplinary, international teams. The

Collaborative Program views 'global health' in an integrative manner. It focuses on the relationships among local, regional, national, and international forces and factors that influence health and on the development of effective interventions and policies that will address or shape these.

Program Requirements

Formal requirements include:

- Completion of core course: *NUR1083H-Comparative Politics of Health and Health Policy in a Globalizing World*
- One additional course relevant to global health offered by a department other than the home department. There are currently more than 40 approved courses at participating departments, faculties and centres.
- Participation in CHL5701H (a half-credit global health research seminar series) for 3 terms (the equivalent of 1.5 academic years)
- Writing and defending a thesis on an issue related to global health, to be approved by both the home unit and the Collaborative PhD Program committee. Either the supervisor or a committee member must be a member of the collaborative program.

Students participating in CPGH will still be required to complete all requirements of their home department to complete their doctoral studies.

STRATEGIC TRAINING IN HEALTH RESEARCH (STIHR) GRANTS

The Strategic Training Initiative in Health Research (STIHR) was implemented by the Canadian Institutes of Health Research (CIHR) as a way for Canada to increase its competitiveness internationally in attracting new, bright, creative research talent and to ensure innovation and excellence in the next generation of Canadian health research training programs. Through the STIHR, individual training programs receive funding primarily targeted towards supporting research trainees through stipends. Funding for these training programs is provided by CIHR and its partners in the government, voluntary and private sectors. The DLSPH has two STIHR grants:

- Public Health Policy
- Genetic Epidemiology

PUBLIC HEALTH POLICY

Public health is the science and art of preventing disease, prolonging life and promoting health through organized efforts of society. **Public health policy**, the backbone of public health, is policy related to public health issues. Public health policy includes a wide array of legislative and regulatory interventions, administrative practices, financing and funding decisions, and various forms of soft law (e.g., guidelines and informal processes) operating at the international, federal, provincial and municipal levels and in settings that are cross-cutting (e.g., worksites) in ways that are both cross-jurisdictional and cross-sectoral.

The goal of the CIHR Strategic Training Program in Public Health Policy is to provide an internationally competitive and exemplary training program in public health policy that fosters synergies and cross-disciplinary learning, has the capacity to engage in current events and contributes to the development, refinement, and evaluation of policies to address society's pressing and emerging public health priorities related, for example, to the prevention of chronic diseases and containment of infectious diseases. It will also create infrastructure that is sustainable in the long-term. The Program is cross-disciplinary, bringing together a broad range of disciplines, substantive foci, and theoretical and

methodological underpinnings (both quantitative and qualitative), that synergistically build an engaged community of practice of students and faculty focused on public health policy. The Program aims to contribute to the creation of the next generation of public health policy research leaders and creative agents for change, able to address the major health issues and challenges facing humanity locally, nationally and internationally (e.g., should quarantine be used to control a communicable disease outbreak, should taxes be raised to reduce the consumption of alcohol, should legislation be introduced banning the use of cell phones while driving?).

This is a 6-year, \$1.8M Canadian Institutes of Health Research (CIHR) Strategic Training Initiative in Health Research (STIHR) applied for and received in 2009 by a cross-disciplinary group of 27 University of Toronto faculty members. The first group of trainees in this STIHR will completed their first year in the program in August 2010. The second group of trainees includes 27 fellows studying at the master's, PhD and post-doctoral levels.

Applicants must meet entry requirements of the home graduate unit. In addition, decisions about admissions are based upon the deliberations of a review committee that assesses candidates' letter of admission, academic achievements, relevant professional activities, and proposed statement of interest.

All participants are required to:

- satisfy requirements of the home department
- complete a thesis or practicum in the area of public health policy
- complete CHL5300H (Public Health Policy) and CHL5308H (Tools and Approaches for Public Health Policy Analysis and Evaluation) or one or more alternative courses deemed to equivalent
- actively participate in the Public Health Policy Rounds Series until all program requirements completed
- actively participate in the program's "lunch and learn" sessions (for at least one year)
- actively participate in the program's annual summer institute (for at least one year)

Each student is assigned a public health policy mentor with a sustained track record and prior supervisory experience. The mentor plays a key role in ensuring the quality of the student's experience and training.

The Co-Program Directors are Professors Joanna Cohen and Robert Schwartz. The Program Directors are supported by an Executive Committee and Program Advisory Committee. A Program Manager assists in planning and implementation.

GENETIC EPIDEMIOLOGY

CIHR Strategic Training for Advanced Genetic Epidemiology - CIHR STAGE (Strategic Training for Advanced Genetic Epidemiology) is Canada's first and only formal training program in Genetic Epidemiology, and one of few in the world. The program offers a new training and career development opportunity designed to cross-trains graduate students and post-doctoral trainees at the interface of genetics and population health science i.e., in genetic epidemiology and statistical genetics. The overall goal is to increase research capacity in a discipline facing a massive shortage of qualified individuals to ultimately improve prevention and management of common diseases through genetic epidemiologic research. CIHR STAGE, hosted at the Dalla Lana School of Public Health, offers a uniquely rich training environment that builds on established graduate programs of the Divisions of Epidemiology and Biostatistics, the Department of Statistics, and the resources from established

partnering institutions. Together, trainees will integrate these population health science disciplines and gain additional knowledge in genetics and related biological sciences. To achieve true integration, the program features an innovative training model that provides a myriad of formal, informal and interactive learning opportunities. For example, co-mentorship by faculty from the three contributing and complementary disciplines of genetic epidemiology (i.e. epidemiology, biostatistics/statistics and biomedical sciences); a curriculum incorporating core, integrative and cross-disciplinary courses, and leadership training; cross-disciplinary practica in industry, government or institutional research labs; internships, exchanges and networking at the local, national and international levels; and participation at several cross-training seminar series and National research videoconferences.

The program welcomes Master's or Doctoral students in Biostatistics, Epidemiology or Statistics at the University of Toronto; Postdoctoral fellows from relevant disciplines; and faculty transitioning into the field of genetic epidemiology. Program graduates will be thoroughly prepared to lead and contribute to creative science in common disease research, and pursue positions in academic or research institutions, and in the public or private sectors worldwide.

CENTRE FOR CRITICAL QUALITATIVE RESEARCH (CQ)

The Dalla Lana School of Public Health is founding co- host (with the Lawrence Bloomberg Faculty of Nursing) of the Centre for Critical Qualitative Research (known as CQ). Built on an initiative started in the early 1990's by Dr. Joan Eakin of the Social and Behavioural Health Sciences Division, CQ is a teaching and research hub focused on the teaching and practice of qualitative research methodology. The Centre is an intellectual 'home' and resource for qualitative researchers in the health research community at the U of T, its affiliated research institutes, and in other research settings in Canada and internationally.

The goals of CQ are:

- To build local, national and international capacity in critical, theoretically-informed qualitative health research, scholarship and teaching
- To provide superior graduate education in qualitative research methodology
- To promote innovation, knowledge development, and critical reflection at the leading edge of the field of qualitative methodology
- To be a 'go-to' site of expertise in the particular challenges of practicing and teaching qualitative research in the health field
- To anchor, connect, challenge and inspire qualitative researchers across health-related disciplines and institutional units

The Centre specializes in the teaching and practice of qualitative methodology specifically in the health sciences and health research field, where there are particular challenges and opportunities for these forms of research.

CQ engages in a number of education-related activities including:

- Development and co-ordination of a methodology course series called the *Essentials of Qualitative Research*, an educational initiative that is internationally unique, certainly in the health sciences. The series consists of coordinated, sequential and comprehensive set of courses, ranging from introductory through advanced analysis. Accommodating both research oriented Master's students and doctoral level students, the series is taken by students across

the health sciences and other university units. The courses are also taken by post-doctoral fellows and visiting scholars seeking to develop their methodological skills in this area. CQ offers a 'Certificate' of advanced training in qualitative methodology to those who take three or more of the core courses.

- A Seminar series held monthly, attended by faculty and students (averaging 30-and 40 persons per seminar) and posts podcasts of the seminars on the Centre's freely accessed website www.ccqhr.utoronto.ca
- Visiting Scholars and post-doctoral training opportunities for those seeking to learn how to teach qualitative research, and those seeking methodological advancement.
- Development of a series of teaching videos on key topics in qualitative research for use in CQ sponsored courses and to be made available to the public for free through the website.
- Introductory and practice-oriented short workshops for researchers and their research staff in the broader health research community.

GLOBAL HEALTH EDUCATION INSTITUTE

The Global Health Education Institute (GHEI) is an exciting new initiative which fills a long-recognized gap in the training of health professionals who are interested in making an impact in the global health scene. It adds to informal mentoring by providing a structured, evidence-based, and carefully designed curriculum in a small group format - an approach to global health education unique to this program and to UofT. The University of Toronto is home to one of the largest concentrations of Global Health leaders in the world.

The GHEI Certificate Program is a continuing education initiative which provides interested post-graduate medical trainees (residents) with knowledge and skills relevant to the practice of global health. The program objectives are aligned with CanMEDS objectives, emphasizing an understanding of global determinants of health, technical skills, advocacy, management and leadership, interdisciplinary collaboration and public health medical expertise. The program is taught by leading University of Toronto global health faculty and practitioners who also have established international global health partners. Graduates of the program join a growing community of professionals dedicated to using more innovative and effective methods to address the needs of marginalized populations at home, and under-served populations abroad

Curriculum

Core Modules

- The Context of Global Health
- Global Health Governance and Infrastructure
- Ethics, Rights and law
- Fundamentals of Public Health Practice
- Primary Care
- Preparing yourself for Global Health fieldwork
- Post-travel debriefing
- Cross Cultural Communication
- Infectious Diseases in the Developing World
- Innovative Health Service Delivery Models in Global Health
- Innovation and Technology in Global Health

Elective Modules

- The Environment and Health
- Program Planning and Capacity Building
- Research in the Developing World
- Complex Humanitarian Emergencies
- Health and Human Rights
- Global Reproductive Health
- Teaching in International Settings
- Nutrition and Food Security
- Special Populations
- Global Mental Health
- Surgical Skills and Anaesthesia for Global Health
- Focus on Child Health
- Health Economics
- Leadership in Global Health

The program welcomed its inaugural class in September 2009.

E. STUDENT EXPERIENCE AND FEEDBACK

CANADIAN GRADUATE AND PROFESSIONAL STUDENT SURVEY

One source of quantitative data on the student experience is the Canadian Graduate and Professional Student Survey (CGPSS) which measures student academic satisfaction. Below are condensed 2007 results for the DLSPH. The results are presented separately for doctoral programs (MSc/PhD) and the professional master's program (MHSc/MPH). This survey was completed by 60% of PhD students (n=59), 53% of MSc students (n=10) and 52% of the MPH students (n=80) from the DLSPH. The data from the next survey (2010) is not yet available.

DOCTORAL AND RESEARCH MASTER'S STUDENTS

It is a point of concern that the research stream results are lower than the U of T research stream averages on questions related to the intellectual quality of faculty and fellow students. The relationship between faculty and graduate students and the overall quality of graduate level teaching by faculty were also less well rated by DLSPH doctoral students than other U of T students.

Question	Student Category	Excellent %		Very Good %		Good %		Fair/Poor %	
		DLSPH	UofT	DLSPH	UofT	DLSPH	UofT	DLSPH	UofT
The intellectual quality of faculty	MSc/PhD	28	54	45	36	16	8	12	2
The intellectual quality of my fellow students	MSc/PhD	25	31	38	46	25	18	12	5
The relationship between faculty and graduate students	MSc/PhD	10	19	22	39	39	27	29	16
Overall quality of graduate level teaching by faculty	MSc/PhD	7	18	29	42	38	27	26	14

Possible factors impacting on these concerns may be partially attributed to the highly distributed nature of the doctoral program with many of students off-campus.

Interestingly, the research experience results for the doctoral stream students presents a more positive impression of this group's academic experience since the results reflect a dynamic and diverse research experience. DLSPH doctoral students rated their research experience considerably higher than the U of T average.

Research Experience							
How would you rate the quality of support and opportunities you received in these areas?	Student Category	Yes %		No %		NA	
		DLSPH	UofT	DLSPH	UofT	DLSPH	UofT
Conducting independent research since starting your graduate program	MSc/PhD	88	95	4	3	9	3
Training in research methods before beginning your own research	MSc/PhD	97	92	0	4	3	4
Faculty guidance in formulating a research topic	MSc/PhD	97	97	0	1	3	2
Research collaboration with one or more faculty members	MSc/PhD	86	83	5	8	7	9
Collaboration with faculty in writing grant proposals	MSc/PhD	68	57	18	24	16	19
Attended national scholarly meetings	MSc/PhD	83	71	17	29		
Delivered papers or presented a poster at national scholarly meetings	MSc/PhD	80	70	20	30		
Co-authored in refereed journals with your program faculty	MSc/PhD	81	60	19	43		
Published as sole or first author in a refereed journal	MSc/PhD	67	56	22	45		

PROFESSIONAL MASTER'S

Since this survey was conducted in 2007, the professional master's program at that time was the MSc. Satisfaction levels regarding the professional master's program consistently reflect high measures, very similar or exceeding the University-wide results.

Figure : CGPSS, Professional Master's Satisfaction with Program, Quality of Interaction, and Coursework									
Question	Student Category	Excellent %		Very Good %		Good %		Fair/Poor %	
		DLSPH	UofT	DLSPH	UofT	DLSPH	UofT	DLSPH	UofT
The intellectual quality of faculty	Prof Mast	54	43	33	41	11	13	3	3
The intellectual quality of my fellow students	Prof Mast	35	25	41	46	23	23	1	7
The relationship between faculty and graduate students	Prof Mast	29	19	30	40	25	29	16	12
Overall quality of graduate level teaching by faculty	Prof Mast	20	18	33	45	32	26	15	11

As seen in the table below, DLSPH professional master's students are also highly engaged in research activities throughout their program.

Professional Master's – Research Experience							
How would you rate the quality of support and opportunities you received in these areas?	Student Category	Yes %		No %		NA	
		DLSPH	UofT	DLSPH	UofT	DLSPH	UofT
Conducting independent research since starting your graduate program	Prof Mast	80	71	0	8	10	21
Training in research methods before beginning your own research	Prof Mast	90	78	0	5	10	17
Faculty guidance in formulating a research topic	Prof Mast	90	78	0	4	10	18
Research collaboration with one or more faculty members	Prof Mast	90	64	0	10	10	26
Collaboration with faculty in writing grant proposals	Prof Mast	50	33	20	18	30	49

These data are in line with student views, as expressed in the student report, below.

STUDENT REPORT

The Public Health Students' Association, which represents the student body, was asked to prepare a report for this Self Study document. The report is included below, verbatim.

DALLA LANA SCHOOL OF PUBLIC HEALTH
STUDENT REPORT 2010

Tuesday November 9th, 2010.

Prepared by:

Laura White, PHSA Vice-President
on behalf of the

Dalla Lana School of Public Health Students' Association (PHSA)

Submitted to: Dr. Lemieux-Charles and Dr. Sass-Kortsak

SECTION A: Introduction

The following report outlines the activities, feedback and concerns of students within the Dalla Lana School of Public Health (DLSPH). The intention of this report is to highlight the activities of students within the DLSPH, as well as issues that have been raised and suggested areas for action to address these issues. This report has been prepared by students within the executive and general council of the Public Health Students' Association (PHSA), based on student surveys, feedback and discussions within PHSA meetings, and Town Hall Meetings with students and the DLSPH Director. The comments within this report may not reflect all students, however, the authors of this report have attempted to highlight concerns and feedback from a variety of different sources in an effort to represent the majority of students.

Students have initiated and organized a number of activities and events within the school, positively contributing to the sense of community and quality of the DLSPH. These initiatives are outlined in Section C and indicate the commitment of the DLSPH student population. In Section D, strengths and critical issues within the DLSPH, as identified by students, are outlined, with action areas suggested. Students have indicated that strengths of the DLSPH include the faculty, supportive staff, and the practicum opportunities. However, students have also expressed discontent around: availability of courses, particularly elective courses; class sizes; funding and work opportunities; and communication. The aim of this report is to highlight these concerns and to create a dialogue between students, administration, and faculty about how change can be implemented and supported.

SECTION B: The Public Health Students' Association

The DLSPH consists of Master and PhD Students, entering the program from a variety of different backgrounds. Students fall within one of the following divisions: Biostatistics; Epidemiology; Interdisciplinary, including a variety of programs like Community Nutrition and Family and Community Medicine; Occupational and Environmental Health; and Social and Behavioural Sciences, including the Master program in Health Promotion and the Doctoral programs in Health and Behavioural Science and Social Science and Health.

The Public Health Students' Association (PHSA) represents all full- and part-time graduate students registered within the DLSPH, with all students automatically PHSA members upon registration. The PHSA undertakes actions that are of common interest to its members, including advocating on behalf of students to the administration and faculty surrounding student concerns and issues, planning social and professional development events, and

supporting student initiatives (through assistance with funding, communication, etc). The PHSA Objectives are as follows¹:

- To represent the members of PHSA on all matters in which representation may be in the interests of the students.
- To promote and maintain communication between the members of PHSA, the personnel of the Dalla Lana School of Public Health, and The University of Toronto.
- To initiate, sponsor, coordinate, and promote social, academic, cultural, and athletic events in which the members of PHSA may be interested, and in general to promote the welfare and interests of the individuals registered in the Dalla Lana School of Public Health at The University of Toronto.

The PHSA is governed by an elected executive council and a general council. The executive council consists of a President, Vice-President, Chairperson, Treasurer, Secretary and Past President. The executive council also includes three representatives that attend U of T Graduate Students Union Meetings, representing the PHSA and acting as a liaison between the PHSA and the GSU. The General Council is made up of representatives of programs and committees. There are a variety of committees within the General Council that address certain issues (e.g.: a social justice committee, a student social events committee, etc).

The PHSA collects feedback from DLSPH students through a variety of different avenues. Program representatives report issues within their program during PHSA meetings that take place at least once per month. Students discuss issues and concerns at the annual Town Hall Meeting with the Director of the DLSPH. Finally, at the end of each year, an on-line survey is sent to students with questions concerning their program(s), the school, satisfaction and concerns, and other issues affecting students.

SECTION C: Student Initiatives

DLSPH Students have initiated and directed a number of initiatives within the school, and at U of T. These initiatives highlight the tremendous leadership, motivation and engagement within the student body, which is a major strength of the DLSPH. The following list outlines the student-initiated events that have taken place from 2008 - 2010. New events are starting each year, while some events have become traditions within the school, with different students taking on the leadership each year.

I. Epidemiology and Health Promotion Retreat

This fall, students within the Health Promotion and Epidemiology programs at the DLSPH came together for the second year in a row to organize and orchestrate the programs' Orientation Retreat at Hart House Farm in Caledon Hills. As was the case last year, this collaborative event brought students and Faculty together for a weekend of team building, knowledge sharing and capacity development at the outset of the academic year. The Retreat succeeded in providing a relaxed environment for incoming MPH students to meet each other as well as second year students from both the Health Promotion and Epidemiology programs. In addition, Faculty from both programs were able to join students at the Farm to provide helpful advice and experienced perspectives to new students as they embark on their educational experience at DLSPH.

Feedback from incoming students within both programs indicates that these sessions were enlightening, supportive, and vital in their transition to the Health Promotion and Epidemiology MPH programs. In addition, second year students found the retreat provided a perfect setting to re-connect with their peers after summer

¹ Objectives found within the PHSA Constitution posted on <http://www.phs.utoronto.ca/phssa/documents.html>, last modified Nov 21, 2008.

practicum placements and an important opportunity to share their experiences with new students. Plans are already underway for next year's retreat.

II. DLSPH Student Research and Practicum Day

Students, with the support of DLSPH administration, have organized the annual DLSPH Student Research and Practicum Day for the past two years, where both Master and PhD students have the opportunity to showcase their work. Students are able to present research projects that are in-progress or completed, as well as present on their practicum experiences. The event provides an opportunity for students to practice presenting their work, via both visual displays (e.g.: poster presentation) and oral presentations, as well as creates a forum for students to interact with other students and faculty, to learn about projects taking place at the school, and to gain feedback on their own work.

III. Annual Student-Led Conferences on Emerging Issues in Public Health

For the past three years, students within the DLSPH have initiated, organized and led a conference on a selected emerging issue within public health. The topic of the conference has changed each year, with each planning committee selecting the topic, fundraising, finding speakers and organizing a day-long event around the topic. Over the past three years, the planning committee has consisted of students from both Master and PhD levels, and from different programs. All three conferences have brought together students, academics, practitioners, and community members from a variety of different backgrounds, providing a setting for attendees to learn from one another, network and critically engage with the topic. All planning committees have focused on providing a highly accessible conference by offering free admission to all attendees.

In 2008, the first DLSPH Student-Led Conference, entitled "Poverty and Health: Partnership in Action", was designed to stimulate discussion and unpack the relationships between poverty and health, showcasing strong Toronto-based community-campus partnerships. The success of this initial conference was followed by "Research with Pride" in October 2009, which offered the opportunity for students, community members, academics, and allies of the lesbian, gay, bisexual, transgendered, transsexual, two-spirited and queer (LGBT2Q) communities to come together to discuss health research, with a specific focus on the possibilities of community-based research (CBR). On October 1st, 2010, the Third Annual DLSPH Student-Led Conference took place, with over 170 students, academics, practitioners, artists and community members attending. Entitled "The Art of Public Health", the conference focused on arts-based approaches to public health areas, including research, knowledge translation, evaluation, and community development. The conference included: an opening and closing keynote address; ten workshops; five small-group break-out sessions covering critical issues that emerged throughout the day; and a project gallery, with over 20 art pieces, posters, videos and other media, highlighting initiatives in the field.

First year Master's students have already expressed an interest in organizing the Fourth Annual Student-Led Conference and are discussing conference topics.

IV. World AIDS Day 2009 at the DLSPH

Last December 2009, the Center for International Health facilitated campus-wide World AIDS Day events across the University of Toronto and also held panels during the day at Hart House Farm, which some public health students attended. Within the school of public health, World AIDS Day 2009 was celebrated by handing out free condoms and ribbons in the front lobby of the Health Science Building, and fundraising for HIV research in Canada. In addition to the free condoms and ribbons, there was also an art project sponsored by the Red Cross. Two MPH students, Beth Lowcock (Epidemiology) and Jill Morse (Health Promotion), led the initiative; however, many other

Health Promotion, Epidemiology, and Occupational & Environmental Health Master students volunteered on the day of.

As a result of the interest in HIV/AIDS research expressed during the day, a new initiative called 'Let's Talk AIDS & HIV' (LTAH) was started, in which students organized discussions on HIV/AIDS Research, providing an opportunity for interested faculty and students to come together. For the upcoming World AIDS Day, the new Canadian Institutes of Health Research (CIHR)-sponsored Social Research Center for HIV Prevention at the University of Toronto has started to work with DLSPH students to support more World AIDS Day initiatives. The new partnership with the Center has provided more administrative and institutional support.

V. "Out in the Cold" Event

Last November 20th, 2009, a first year MPH Student in the Health Promotion program organized, with a group of MPH students and undergraduate students, an event called "Out in the Cold", on the U of T Campus. With the support of the PHSA and the Social Justice Committee of the U of T GSU, the purpose of the event was to raise money for three different organizations that addressed different aspects of homelessness in the greater Toronto area, as well as to raise awareness about homelessness in Toronto. Students were sponsored by friends and family to spend the night sleeping outside on the U of T campus. A lecture on housing issues opened the event, and discussions on housing and homelessness took place throughout the night, providing an opportunity for attendees to engage and discuss critical issues in the field. Throughout the course of the evening, about 50 people attended and approximately \$2500 was raised. Initiated at the University of Waterloo, this event was the first of its kind at University of Toronto.

VI. Master's Global Health Concentration Survey

At the end of the 2009-2010 academic year, two MPH students within the Global Health Concentration (one in Epidemiology and one in Health Promotion) created a survey to elicit feedback from all students within the concentration. The first for the Master's Global Health Concentration Program, the survey highlighted a number of student concerns about the organization and content of the program, and questioned whether the program is meeting students' expectations. The following key issues were raised:

- Limited funding to support students to pursue overseas practicum placements;
- Despite the presence of excellent faculty and researchers at the DLSPH and U of T, there is a lack of opportunities for students to access them through the program; and
- The program curriculum inadequately equips students with applied research or public health practice skills in global health

These student concerns and survey results were brought to the Global Health Education Advisory Committee, which involves key faculty members in the Global Health division and student representatives from the Masters and Doctoral levels. The faculty members were receptive to the critique, though reflected that inadequate funding and administrative support for the program are a major constraint. Several changes have been implemented, including the establishment of the Global Health Roundtable Series, based on this review process and a stronger relationship with the Centre for International Health.

SECTION D: Student Issues

Feedback from students has been generated through annual student surveys, Town Hall meetings, email requests and PHSA meetings. Through these various avenues of soliciting feedback, a number of issues have been identified among students. The most recently analyzed summary of student feedback is taken from the 2008-2009 PHSA Survey Report, in which a total of 171 out of 320 (53%) students of the Dalla Lana School of Public Health completed the survey. Of the 171 respondents, 164 (90.1%) were full-time students and 17 (9.9%) were part-time students. Of the survey respondents, 4 (2.4%) were in a Thesis-based Masters program, 99 (68.8%) were in a Professional Masters program, and 65 (38.7%) were Doctoral students. In terms of program enrolment, 48% (103/213) of all Masters students, and 61% (65/107) of all Doctoral students are represented in this survey.

The executive summary from this 2008-2009 report is outlined below, with areas for improvement and suggested areas for action following. The list of suggestions is not exhaustive and further discussion between students and administration around areas of action is required.

I. Course Work & Teaching

Overall, students were satisfied with course offerings, the quality of instruction, and the scope and breadth of ideas and materials presented within the School. However, students also indicated areas for improvement, such as the availability of elective courses, scheduling issues (e.g. lack of accessible courses for part-time students, lack of summer/ evening/ web courses, conflicts between classes of interest, challenges with regard to enrolling in classes in other divisions/programs, even when that represents a course requirement for a DLSPH program, etc.), and the need for more methods (statistics in particular) and theory-based courses.

II. Supervision and Mentorship

Most students were satisfied with their supervisor's and committee members' availability to meet. Survey respondents also indicated satisfaction with supervisory enthusiasm and encouragement, expertise in their area of research, and familiarity with program requirements. Some students reported difficulties arranging meetings with their supervisors and committee members, and some also described a lack of program guidelines with respect to comprehensive exams and dissertations. Some Masters students indicated that guidance or mentorship from a faculty member other than their program director would be very helpful, and felt that it would help to take some of the workload off of directors in order to facilitate this form of student support.

III. Funding & Work Opportunities

Students indicated that they face a number of challenges in accessing and securing Teaching Assistant (TA) and Research Assistant (RA) positions, both within and outside the School. Among Doctoral students, there was a sense that a lack of experience as a TA or RA may make them less competitive for faculty positions upon graduation. Many students felt that the School does not communicate position vacancies effectively, and that there is a lack of availability of relevant positions.

Professional Masters, and part-time and international students felt that there should be more opportunities to apply for funding. Some professional students with practicum placements indicated that their stipends were quite low or that they did not receive one at all. Students also felt misled by information provided by the School at the time of application with regard to the availability of stipends for practicum positions.

Some students suggested that there could be improved communication from the School regarding the availability of funding and scholarship opportunities in the form of an online, routinely-updated database; others indicated that support with government scholarships was appreciated and should extend to other scholarships as well.

A few students also mentioned special circumstances, which made it especially difficult to fund their schooling: these include family commitments and their status as part-time students (resulting in ineligibility to apply for funding). These students felt that not enough funding was available to support their education, requiring them to take on many part-time jobs to make ends meet.

Students also felt that there should be more funding available for conferences and other research-related travel to enhance professional development alongside their academic development.

In response to possible changes in TA requirements and funding packages, students recognized the importance of a TA experience. However, students also indicated that securing a TA-ship without increasing graduate funding is not an acceptable resolution to the issue either.

IV. Student Life

Many students were satisfied with the study and meeting space in the School, but felt that access to computer equipment, restricted software (in particular statistical software), printing and photocopying could be improved.

Overall, students were happy with communication regarding School and university-wide policies and events, as well as with non course-related learning opportunities within the School. However, students indicated that there was room for improvement with regards to opportunities for interaction with students and faculty from other programs, inclusion of students in decision-making processes, and overall communication strategies between the administration and students.

Students were generally satisfied with the School's student government (PHSA) and Graduate Student Union, but felt that opportunities for social activism, community service, and social activities could be improved.

V. Website

Although many students considered the new Dalla Lana School of Public Health website an improvement, they suggested several additional changes:

- 1) Adding an events calendar;
- 2) Providing listings for funding and TA/RA opportunities;
- 3) Improving its aesthetic appeal;
- 4) Including better contact information for administration and faculty.

Students indicated that the most useful parts of the existing website were course listings and information, the faculty database with its multiple search functions, and the quick links bar.

VI. Strengths within the DLSPH, as Identified by Students

- Core courses
 - This sentiment may be changing as preliminary analysis of the 2009-2010 Student Survey indicates that not all students are content with core courses. Approximately 24.7% of Professional Master Students and 30.9% of PhD students rated the relevance of core courses as 'poor' or 'fair'. In terms of overall satisfaction with core courses, approximately 27.2% of Professional Master Students and 28.6% of PhD students indicated 'poor' or 'fair'.
- Instructors – knowledge in the field and research activities
- Connection to practical experiences in class and through practicum
- Faculty mentorship – commitment to students
- Full funding for PhD students

➤ Support Staff

VII. Key Improvements from 2008, as Identified by Students

- Students were satisfied with the support given to students for scholarship applications
- With greater availability of small kitchen appliances and cleaning supplies, satisfaction with kitchen space increased from 50% last year to 70%.
- Greater satisfaction with computer equipment (~50% rating of good and above compared to ~10% last year).
- Students appreciated the updates to the School website

VIII. Areas of Improvement, as Identified by Students

➤ Courses

- Elective courses
 - 52% rated availability 'poor' or 'fair', 36% rated relevant to area of study 'poor' or 'fair'
- Course availability
 - 29% of students rated availability 'poor' or 'fair' for core courses and 52% rated availability 'poor' or 'fair' for electives
- Scheduling of elective and core courses
- Need for more courses on methods and theory

Strategies for Action:

- Step 1: Consultation with students about particular courses they need and/or would like to take, and scheduling problems. Determine gaps from students' perspectives (e.g. additional courses in statistics, qualitative and quantitative, and health behavioural and social science courses).
- Step 2: Identify opportunities to turn Independent Reading Courses into Courses, and to establish new Independent Reading Courses.
- Step 3: Discuss student-identified gaps with faculty and establish new courses with faculty within the DLSPH.
- Step 4: Create agreement with other faculties at U of T to allow DLSPH students to attend courses within their faculties, to address academic/programmatic gaps and to fulfill explicit DLSPH program requirements to take courses in another faculty or division (e.g.: the Global Health concentration).

➤ Class sizes

- Class sizes have been highlighted as a major source of concern among students, within the 2008-2009 survey, 2009-2010 survey and at the 2010 Town Hall Meeting with the previous Director of the DLSPH.
- In the 2009-2010 survey, 42.0% of Professional Master students rated class sizes as 'poor' or 'fair'.
- In a survey completed by first year Health Promotion and Epidemiology students in Fall 2009, with a 77.97% response rate, 86.8% of respondents expressed that they were dissatisfied with current class sizes; with the majority of students agreeing that ideal class sizes should range from 15-30 persons depending on the course content.
- Despite students expressing considerable concern about the increasing class sizes, the Professional Master programs have increased each year.
 - Concern exists over availability of practicum placements and jobs upon graduation with the increasing class sizes.

Strategies for Action:

- Step 1: Survey recent DLSPH graduates to determine job market upon graduation:
 - Where they go/what jobs they are getting
 - If graduates are obtaining the jobs and salaries that they want, that they expected to receive upon graduation from the DLSPH
 - If the program they were in at the DLSPH prepared them for the job market
- Step 2: Discuss current students' concerns about availability of practicum placements, consult with DLSPH Practicum Coordinator
- Step 3: Consider options to reduce class sizes:

- Increase number of tutorials
- Increase number of sections for core courses
- Increase number of teaching assistants
- Offer more courses, particularly elective courses

➤ Addressing the needs of part-time students

Strategies for Action:

- Step 1: Consult with part-time students regarding issues
- Step 2: Consider online courses and increasing summer courses (particularly reading courses)
- Step 3: Consider financial support systems for part-time students

➤ Guidelines on theses and comprehensive exams for Doctoral students and Committee Members

Strategies for Action:

- Step 1: Meet with PhD students to determine issues
- Step 2: Prepare document with guidelines for theses and comprehensive exams
 - Share guidelines with supervisors, committee members and students
- Step 3: Hold meeting with students, supervisors, and committee members to review procedures and guidelines

➤ Funding and Work Opportunities

- TA and RA opportunities
 - 15% of students have had at least one TA position, 84% described availability of positions within the school as 'poor' or 'fair'
- More funding options for Master Students
- Providing Conference Funding

Strategies for Action:

- Step 1: Create more transparency in how awards are decided and disseminated (e.g. post on website, email details to all students)
- Step 2: Create connections with other departments and faculties at U of T to establish TA opportunities
- Step 3: Actively seek out TA opportunities that are relevant to students' backgrounds
- Step 4: Actively communicate TA opportunities to students

➤ Quality and availability of student workspace

- 44% of student respondents described as 'poor' or 'fair'

Strategies for Action:

- Step 1: Identify additional student spaces, e.g. breakout rooms, individual study rooms, shared student offices. Allow students to book rooms for study and group collaboration, etc., and set up a protocol for booking these spaces
- Step 2: Provide additional tables and chairs

➤ Access to software, copiers and fax machines

- Majority of students rated 'poor' or 'fair'

Strategies for Action:

- Step 1: Repair the printer in the student computer room
- Step 2: Consider placing photocopier and fax machine in the student computer room
- Step 3: Provide information on student reduced fee software
- Step 4: Consider other places where students can access software for free (e.g.: make arrangements with other Computer labs on campus for DLSPH students to use)

➤ Access to food and beverages

- 83% rated access as 'poor' or 'fair'

Strategies for Action:

- Step 1: Provide information to students on locations for food/beverages, e.g. U of T cafeterias in nearby buildings
- Step 2: Consider possibilities for provision of healthy food and/or beverages within the Health Sciences Building (e.g.: vending machines in Student Lunch Room)

➤ More effective communication strategies

Strategies for Action:

- Step 1: Create space on website for communication
- Step 2: Identify departmental faculty to take on guidance and support of student leadership and of student initiatives, resulting in integration within and between streams (e.g.: events with both Master and PhD students, PhD SSH and HBS, etc.)

➤ Professional Development

Strategies for Action:

- Step 1: Beginner, intermediate and advanced level short-term courses in statistics
- Step 2: Meet and greet events with students and faculty
- Step 3: Seminar series for specific streams or programs, e.g. Master and PhD, health promotion, social science, health behavioural, practicum, qualifying exam, etc.
- Step 4: DLSPH seminar series matching student interests

➤ Social activities for DLSPH

Strategies for Action:

Step 1: Plan “Meet and Greet” Events with Students from different streams and programs, and Faculty

- Step 2: Foster opportunities for networking and professional development between MA and PhD students
- Step 3: Consult with Doctoral students to address issues surrounding a generally perceived lack of community and alliance at the PhD level

SECTION E: Conclusion

This report outlines the status of students at the DLSPH. The student activities highlight the incredible student engagement and motivation within the school, with students initiating their own activities and events within the school and on U of T Campus. While students are interested and engaged, there are a number of issues that have been repeatedly raised by students over the past two years.

Concerns were listed above with suggested areas for action. While the strategies are specific to the selected issue, some common issues emerged that are relevant to all areas of improvement:

1. Improve consultation with students to gain a greater understanding of concerns, as well as strategies to address those concerns;
 - a. Establish avenues for students to effectively express issues to faculty and administration;
2. Create transparency in the process of issue identification to issue resolution (and share that process with students);
3. Better understanding of the processes for administrative accountability to student concerns.
4. Increased student involvement in DLSPH decisions (hiring process, curriculum decisions, strategic planning, etc),

Students continue to raise the same issues of courses, class sizes, funding opportunities, and communication, and continued discontent may affect student engagement and enrollment. Students have provided ample feedback and expressed areas of desired change. Acknowledging the student voice while involving students in the process of change would represent significantly positive impacts upon the direction of the DLSPH going forward.

SECTION 4: RESEARCH & SCHOLARSHIP

A. FACTS & FIGURES

TOTAL RESEARCH FUNDING (2008/09)		ACADEMIC STAFF (2008/09)	
\$30,024,969			
TOTAL NO. OF AWARDS	328	<u>ACADEMIC STAFF:</u>	
<u>Sources:</u>		Primary appointments	192
CIHR	\$9,423,442	- On campus	39
NSERC	\$179,500	- Off campus	153
NCIC	\$0	Cross appointments	116
HEALTH CANADA	\$902,835	Tenured	18
MOHLTC	\$3,232,015	Tenure-stream	4
HSFO/C	\$194,405	Career awards	14
SSHRC	\$391,527	With Research Funds	
INDUSTRY	\$813,733	Primary appointments	77
OTHER SOURCES (1)	\$14,887,511	Cross appointments	Unknown
		<u>STUDENTSHIP AWARDS:</u>	
		Supervised by Primary Appt	128
		<u>FELLOWS:</u>	
		Post Doc. And Clin.	5

1 Includes global research budget of the Institute for Clinical Evaluative Sciences, Structural Genomics Consortium, SARS Laboratory, UofT Equipment maintenance grants, clinical trial grants at the Sunnybrook Hospital/University of Toronto Clinic, ORDCF grants, Ontario Genomics Institute grants, undergraduate summer studentship awards, graduate studentship awards for independent study and Health Communication Research Laboratory in the Faculty of Medicine and Federal Indirect Cost Programme.

B. OVERALL RESEARCH OBJECTIVE & GUIDING PRINCIPLES

The objective driving much of the research agenda is the desire to be at the forefront of public health, population health and health promotion research internationally. This is accomplished by

understanding the determinants of population health, measurement of health status, interventions to enhance health of populations and integration of theoretical, methodological and empirical approaches. Following are the principles that guide the School's research mission:

- The form, content, mode of operation, and leadership of the School's research component will be maintained through broad consultation and participation.
- The research agenda will remain interdisciplinary and collaborative across the university and the community.
- The core disciplines of academic public health research (social and behavioural science, biostatistics, environmental health, epidemiology) will be maintained and strengthened.
- Core Research Themes give depth, focus, integration, identity and collaborative mass and energy to the School's research program.
- The focus of these themes include key public health problems, determinants of health, locus/forms of intervention and change, research methodologies, or other creative and synergistic conceptual categories of public health.
- The criteria for designation of these themes include considerations of capacity for productive combination and ignition of existing expertise and resources, promise of institutional collaboration, relevance to key or emergent matters of public health practice and policy, potential for integrated interdisciplinary innovation, breadth of reach across fields/levels of study.
- Mechanisms, including leadership, management infrastructure, and organizational design help align and link the School's research, education and disciplinary foundations and goals. Included in the infrastructure is the Research Services Unit (RSU) whose mandate is to provide high quality research support to professionals within the Dalla Lana School of Public Health, the Faculty of Medicine, the university at large, and the teaching hospitals. The RSU, situated within the DLSPH, is funded by cost-recovery from the funding of the researchers who utilize it. Currently it is staffed by a director, supported by the former director part time, with additional staff recruited as required for specific projects.

C. CURRENT RESEARCH THEMES

The areas of research for faculty who have their primary appointment in the DLSPH are summarized in this section. Twelve research themes were identified [see Table 19] by 85 of the 192 faculty (44%) who responded to a survey. In the last 5 years 411 projects have been initiated or completed with total funding of \$132,510,012. A number of faculty have projects in more than one area. [Surveys conducted by Associate Director Research, September-October, 2010. See Appendix 12].

TABLE 19: DLSPH - Major Research Themes Identified by Faculty

RESEARCH THEME	# PROJECTS APPROVED (off campus)	TOTAL FUNDING IN LAST 5 YEARS (off campus)
i. ADDICTIONS (SMOKING, ALCOHOL, GAMBLING & ILLICIT DRUGS)	62 projects (30)	\$21,425,693 (\$11M)
ii. CHILD AND ADOLESCENT HEALTH	8 projects (7)	\$1,756,065 (\$1.6M)
iii. CHRONIC DISEASE EPIDEMIOLOGY, PREVENTION & SCREENING	65 projects (45)	\$43,340,426(\$37M)
iv. GENETIC EPIDEMIOLOGY & STATISTICAL GENETICS	37 projects (19)	\$14,372,822 (\$9M)
v. GLOBAL HEALTH	12 projects (6)	\$4,758,452 (\$1.3M)
vi. HEALTH PROMOTION, SOCIAL DETERMINANTS OF HEALTH AND SOCIAL EPIDEMIOLOGY	27 projects (22)	\$5,600,999 (\$1.2M)
vii. INFECTIOUS DISEASE EPIDEMIOLOGY AND MODELING	38 projects (13)	\$15,555,745(\$3.3M)
viii. KNOWLEDGE TRANSLATION AND PRACTICE BASED IMPLEMENTATION SCIENCE	3 projects (3)	\$613,498 (\$0.613M)
ix. METHODOLOGICAL RESEARCH IN BIOSTATISTICS, DEMOGRAPHY AND EPIDEMIOLOGY	14 projects (none)	\$551,618 (none)
x. OCCUPATIONAL AND ENVIRONMENTAL HEALTH	71 projects (49)	\$16,052,088 (\$11M)
XI. PUBLIC HEALTH POLICY	19 projects (none)	\$4,001,400 (none)
XII. WOMEN'S HEALTH	13 projects	\$1,789,030 (\$1.4M)
Note: () indicates projects and funding administered off campus		

D. RESEARCH UNITS

A number of research units are integral to or affiliated with the School. These enrich the School's research program, while providing an environment where faculty with similar research interests but often different basic training can work collaboratively together, in addition to providing training and employment opportunities for students. Brief summaries of the units are provided here.

- [Arthritis Community Research & Evaluation Unit \(ACREU\), Toronto Western Research Institute, at the University Health Network:](#) ACREU's mission is to ameliorate the adverse impact of arthritis on individuals, their families and in the population, through a comprehensive program of applied health services research concerned with the delivery of care to people with chronic disabling disorders using arthritis as a model. ACREU is a primary source for reliable data on arthritis in Canada. Research includes arthritis and employment, primary care management, access to specialists, joint replacement surgery and rehabilitation service delivery. ACREU has a multi-disciplinary core team of ten research investigators, including the Director, a tenured faculty member of the School.
- [Centre for Global Health Research, St Michael's:](#) The mission of the Centre for Global Health Research (CGHR) is to conduct high-quality research that advances global health. Specific emphasis is on avoidance of two large and growing causes of death worldwide: HIV-1 and tobacco. The CGHR was established in 2003 to conduct large-scale epidemiological studies in developing countries. The CGHR is co-sponsored by St. Michael's and the University of Toronto. It has offices in Toronto, New Delhi, Bangalore and Chandigarh. CGHR is also affiliated with the McLaughlin Centre for Molecular Medicine and other partners at the University of Toronto. CGHR has three faculty (including the Director) and 7 research associates in Toronto.
- [Centre for Research Expertise in Occupational Disease \(CREOD\):](#) The centre is a joint research program of the DLSPH and St Michael's. It was launched with the active support of the Research Advisory Council and with funding from the Workplace Safety and Insurance Board. It has four research programs and four cross cutting themes. The four programs are occupational lung disease, occupational skin disease, hand-arm vibration syndrome (HAVS) and biological hazards. The four themes are prevention, early recognition, outcomes and the health care sector. Another component of the CREOD is strong networks within the occupational health and safety research and stakeholder communities. Knowledge translation initiatives are an important component of the Centre's work. Including the Director, 10 faculty members are associated with the centre's research program.
- [HIV Social, Behavioural and Epidemiological Studies Unit, DLSPH:](#) The HIV Studies Unit was established in 1994 as an extra-departmental unit in the Faculty of Medicine and was sponsored by the Department of Public Health Sciences (Dalla Lana School of Public Health 2008 -) and the Department of Health Policy, Management, and Evaluation. Within the University and in Canada, the Unit provides a unique focus on community and public health issues, bringing together social and behavioural scientists and epidemiologists. The Unit was the first in Canada to utilize a multidisciplinary approach to address social and behavioural aspects of HIV/AIDS transmission and its determinants, the impacts of the disease, and issues of service delivery. It remains the only known campus-based unit in Canada with a specific focus on HIV/AIDS. The HIV Social Behavioural and Epidemiological Studies Unit provides a rich environment for graduate students to undertake masters and doctoral level education. Many of the graduates associated with the unit have gone on to become educators, researchers and advocates in the

field of HIV/AIDS. The large number of research projects of the Unit offers students and community members opportunities for employment and applied learning. The mission of this Unit is to improve the effectiveness of HIV prevention, interventions, services and policies, and to promote health among infected and affected individuals and communities in Ontario, Canada and internationally. It is sited within the Health Sciences Building, the home of the School. There are eight core faculty members and scientists (including the director and deputy director) and 5 affiliated members in other universities.

- [Ontario Tobacco Research Unit \(OTRU\), DLSPH and Centre for Addiction and Mental Health:](#) OTRU is located in the DLSPH and represents the research component of the Ontario Tobacco Strategy, and is a focal point for an active tobacco control research network in Ontario. OTRU's mandate is to: exercise leadership in the design and conduct of research projects; increase Ontario's capacity to conduct research, monitoring and evaluation; monitor programs and activities conducted under the auspices of the Ontario Tobacco Strategy; provide advice and technical expertise on program evaluation and best practices; analyze and disseminate science-based information for the research and public health communities and strengthen and broaden our provincial, national and international network of researchers, programmers and policymakers. There are 4 faculty members (including the director) and 4 research associates.
- [Critical Qualitative Health Research Centre:](#) The Social and Behavioural Sciences Division was the birthplace in the early 1990's of what has subsequently grown into the Center for Critical Qualitative Health Research [www.ccqhr.utoronto.ca]. This Centre is devoted to the advancement of qualitative research methodology, teaching and research practice in the health field. It has funding from several health science departments, and is the intellectual research home for researchers in the major medical sites in the GTA, across Ontario, (and internationally).
- [The Research Services Unit:](#) The mission of the Research Services Unit (RSU) is to provide high quality research support to professionals within the Dalla Lana School of Public Health, the Faculty of Medicine, the university at large, and the teaching hospitals. The RSU, situated within the DLSPH, is funded by cost-recovery from the funding of the researchers who utilize it. Currently it is staffed by a director, supported by the former director part time, with additional staff recruited as required for specific projects.

E. LINKAGES WITH DEPARTMENTS WITHIN THE FACULTY OF MEDICINE, OTHER DEPARTMENTS IN THE UNIVERSITY OF TORONTO, ONTARIO GOVERNMENT AGENCIES AND PUBLIC HEALTH UNITS

Just over half of the research of the School occurs off site, in other departments and agencies. The predominant agencies are the Ontario Agency for Health Promotion and Protection, Cancer Care Ontario, the Centre for Addiction and Mental Health and the Institute for Work and Health. Predominant among the linkages to teaching hospitals of the Faculty of Medicine are St Michael's, the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, the Toronto Western Research Institute, and Women's College Hospital. Faculty who are based in these agencies, institutes or departments are identified with their affiliation after their title in the summaries of research of faculty in the Research. In each instance, however (with only one exception specifically identified), these faculty have their primary academic appointment in the School. Summaries of the non-hospital agencies follow:

- The [Ontario Agency for Health Protection and Promotion \(OAHPP\)](#) is an arm's-length provincial

government agency dedicated to protecting and promoting the health of all Ontarians and reducing inequities in health. OAHPP links public health practitioners, front-line health workers and researchers to the best scientific intelligence and knowledge from around the world. OAHPP provides scientific and technical support relating to infection prevention and control; surveillance and epidemiology; health promotion, chronic disease and injury prevention; environmental and occupational health; health emergency preparedness; and public health laboratory services to support health providers, the public health system and partner ministries in making informed decisions and taking informed action to improve the health and security of Ontarians.

- Cancer Care Ontario (CCO) is the provincial agency responsible for cancer services, and the Ontario government's cancer advisor. It directs and oversees close funding to hospitals and other cancer care providers to deliver cancer services. It implements provincial cancer prevention and screening programs and works with cancer care professionals and organizations to develop and implement quality improvements and standards. It uses electronic information and technology to support health professionals and patient self-care and to improve the safety, quality, efficiency, accessibility and accountability of cancer services. It plans cancer services to meet current and future patient needs, and works with health care providers in every Local Health Integration Network to improve cancer care for the people they serve. CCO is the home of the Ontario Cancer Registry and the Division of Population Studies & Surveillance, and thus home to a number of our status only faculty. As noted in the Summary Table, 37 million dollars of the 43 million in research dollars for epidemiology, prevention and screening are administered off campus with the majority of faculty located in the Population Studies and Surveillance Unit.
- The Centre for Addiction and Mental Health (CAMH) is Canada's largest mental health and addiction teaching hospital, as well as one of the world's leading research centres in the area of addiction and mental health. CAMH is fully affiliated with the University of Toronto, and is a Pan American Health Organization/World Health Organization Collaborating Centre. CAMH combines clinical care, research, education, policy and health promotion to transform the lives of people affected by mental health and addiction issues. CAMH is the home of the Ontario Tobacco Research Unit, and the base of a number of our faculty, especially many working in Addictions and Public Health Policy.
- The Institute for Work & Health (IWH) is an independent, not-for-profit research organization that operates with support from the Ontario Workplace Safety & Insurance Board. The Institute is one of the top five occupational health and safety research centres in the world. The goal of IWH is to protect and improve the health of working people by providing useful, relevant research driven by two broad goals. The first is to protect healthy workers by studying the prevention of work-related injury and illness including studies of workplace programs, prevention policies and the health of workers at a population level. The second is to improve the health and recovery of injured workers by conducting research on treatment, return to work, disability prevention and management, and compensation policies. Several scientists in the IWH (including its Director) have their primary academic appointment in the School.

F. STRENGTHS & CHALLENGES

Strengths

- **STRONG RESEARCH TRADITION:** Research in the School is based upon a strong research tradition, extending back to the foundation of the School of Hygiene, and its continuation within the Faculty of Medicine as part of the Division of Community Health.
- **TORONTO/GTA LOCATION:** The close association of the School with the largest concentration of health science researchers in Canada, and one of the largest in the world, immeasurably increases the opportunity for research.
- **BREADTH OF LINKAGES & INTER-DISCIPLINARY RESEARCH:** Faculty conducting research also benefit greatly by the formal linkages described above that exist with other departments and agencies and by their research programs and often accumulated data sets, and through the existing combinations of researchers within the Research Units incorporated within, or in association with the School. These linkages are about to be strengthened by the appointment of two new Dalla Lana Chairs, in Chronic Disease and Public Health Policy. There are examples of interdisciplinary research within the department as well as linkages with other departments that are helping to create and sustain broader connections.

Challenges

- **INSUFFICIENT INTERACTION BETWEEN OFF-SITE AND ON-SITE RESEARCH:** The conduct of much of the research of the School off site is however, a weakness. Although doctoral students performing their research supervised by faculty members off site benefit from the interaction with others in these agencies or institutes, the majority of faculty and their students do not, except to the extent they are exposed to the many status only faculty from such groupings attending courses they teach.
- **SOME FIELDS WITHOUT A PhD STREAM:** For fields with no PhD program, there are limited opportunities to link research with education.
- **SMALL NUMBERS OF TENURED/CORE FACULTY IN SOME FIELDS:** There are a small number of tenured/core faculty in some fields. Consequently, while the field may be presently productive, it will be put at risk if one or two people leave.

SECTION 5: LINKAGES & PARTNERSHIPS

A. INTERNAL RELATIONSHIPS

As discussed throughout the self-study, the establishment of critical partnership and linkages is of fundamental importance for the development and sustained excellence of the DLSPH. Within the Faculty of Medicine, there has been a long history of collaboration and partnership between Public Health and the Department of Health Policy, Management and Evaluation (HPME). Collaborations related to teaching include courses in international health and comparative systems, MScCH students enrolled in the Health Policy course and teaching in the Community Health course (DOCH) offered to undergraduate medical students. In relation to the latter one faculty member has assumed responsibility for teaching the “manager” competency within the UME program. Many HPME faculty collaborate with faculty in the DLSPH on research projects including the Public Health Policy CIHR training grant which had HPME’s formal support and the Centre for Critical Qualitative Health Research in which one faculty member teaches a qualitative research course. The Department of Family and Community Medicine as well as the Department of Nutritional Sciences are closely aligned with the School through their educational programs.

The Director of the DLSPH is a member of the Council of Health Sciences (CHS) which is a formal body at the University of Toronto (UofT) that represents the health science sector and facilitates collaboration and enhancement of health science research and education endeavours. All health professional disciplines and schools are represented on the Council. Through the CHS Chair, the CHS reports directly to the Provost. The goals of the CHS are to advance the national and international reputation of the UofT as the premier university for health science education and research in Canada; advise and report regularly to the Provost, and the Toronto Academic and Health Sciences Network various committees on all matters relevant to the health science sector and its education and research programs; work collectively on common academic issues and their implementation; identify opportunities for common policies / practices and common management support for education and research across the health science sector and; promote inter-professional education across all health professional programs and optimize the resources to do so and; ensure that the health science sector is adequately and appropriately represented at all levels of University governance. Through this body, The Director collaborates with other health science faculties on matters of mutual interest and importance.

B. EXTERNAL RELATIONSHIPS

AFFILIATED HOSPITALS & RESEARCH INSTITUTES

Predominant linkages to teaching hospitals of the Faculty of Medicine include St Michael’s, the Samuel Lunenfeld Research Institute of Mount Sinai Hospital, the Toronto Western Research Institute at the University Health Network and Women’s College Hospital. These relationships are described above.

Status faculty are vital to the educational activities since they teach courses, or parts thereof, supervise and mentor graduate students, providing much needed funding and research work space, and participate in graduate department administration. Within the context of a School of Public Health, it is important to formalize these partnerships, in order that they continue to provide a diversity and richness of academic opportunities and ideas, central to the mission and operation of the School.

PROVINCIAL EDUCATION, HEALTH SECTOR ORGANIZATIONS AND PROVINCIAL GOVERNMENT

Formal affiliations exist with teaching hospitals as well as the Ontario Agency for Public Health and Protection; however, there are no affiliation agreements which have been developed to formalize relationships with public health units where many of the practica now take place. This is an area which requires further development. In the past, there were public health teaching which received funding for teaching however, these were disbanded in the mid-90's by the government of the day. Provincially there is now a move among provincial public health leadership, local public health units and public health faculty to revisit funding for this activity which would be similar to the policy governing teaching hospitals.

In addition to the UofT agreement with Toronto Public Health/City of Toronto, the DLSPH has formal and informal affiliations with the Greater Toronto Area local public health units (Halton, Peel, Simcoe-Muskoka and Durham) as well as the MOHLTC Public Health Division for placements. These units look to graduates as key hires in the fields of epidemiology, health promotion, nutrition and public health physicians. The CMRP has agreements for resident placements at all of these units.

GLOBAL AND INTERNATIONAL AFFILIATIONS

Faculty are engaged in multiple educational and research endeavours in various parts of the world through partnerships with international organizations (such as World Health Organization, Dignitas, MSF), universities (in countries such as Kenya, Zambia, Colombia, Uruguay, Spain, India, China, Mexico and Brazil) with funding from international funders such as IDRC, CIDA, SSHRC and Fullbright). Such partnerships have enabled faculty to provide educational exchange experiences and build capacity of public health professionals in other parts of the world as well as students at the DLSPH. Because of leadership in education and research in Canada, faculty are invited to consult and advise of a range of topics at international fora. There are two WHO Collaborating Centres linked to the DLSPH - one in Bioethics and one in Health Promotion - in recognition of the leadership of the University of Toronto in both topics.

SECTION 6: CONCLUDING REMARKS & FUTURE DIRECTIONS

The University of Toronto had a strong foundation from which to launch the Dalla Lana School of Public Health. The former Department of Public Health Sciences was recognized as a leading academic public health resource in Canada and served as a dynamic base for the extensive public health scholarship found in many academic units across the University. We believe the School to be well positioned to become “a leader among the world’s best public teaching and research universities in the discovery, preservation, and sharing of knowledge” (Stepping Up). Its interdisciplinary and networked program as well as an infusion of new resources provides a strong base upon which to build the School.



UNIVERSITY OF TORONTO
DALLA LANA SCHOOL OF PUBLIC HEALTH

External Review of the Dalla Lana School of Public Health

APPENDICES

December 1, 2010

List of Appendices

- **APPENDIX 1:** LIST OF FACULTY
- **APPENDIX 2:** ENROLMENT DATA FOR ALL COURSE, 2005-06 THROUGH 2009-10
- **APPENDIX 3:** COURSE REQUIREMENTS FOR EACH PHD SPECIALIZATION
- **APPENDIX 4:** FUNDING POLICY FOR PHD STUDENTS IN DLSPH, 2010/11
- **APPENDIX 5:** DOCTORAL GRADUAL STUDENT-SUPERVISOR AGREEMENT
- **APPENDIX 6:** PHD GRADUATES AND THESIS TITLES, 2005-2010
- **APPENDIX 7:** MPH OBJECTIVES AND COMPETENCIES FOR EACH SPECIALIZATION
- **APPENDIX 8:** MPH PROGRAM REQUIREMENTS BY SPECIALIZATION
- **APPENDIX 9:** MSCCH PROGRAM DETAILS FOR EACH SPECIALIZATION
- **APPENDIX 10:** OCCUPATIONAL MEDICINE RESIDENCY PROGRAM
- **APPENDIX 11:** BRIEF DESCRIPTION OF SELECTION COLLABORATIVE PROGRAMS
- **APPENDIX 12:** FACULTY BY MAJOR AREAS OF RESEARCH

Faculty

Appendix 1: List of Faculty

**Appendix 2: History of Enrolment Data for all Courses 2005/6 to
2009/10**

Appendix 1: List of Faculty

Dalla Lana School of Public Health - Core* faculty by division, status and rank with graduate student supervision level

* core is defined as tenured, tenure stream, contractually-limited term appointment (CLTA) or part-time academic appointment. Those emeritus faculty that continue to teach and supervise students have also been included here.

Division of BIostatistics (7 faculty)			
Status	Rank	Name	SGS Status
Tenured Faculty (6)	Professor (4)	Corey, Paul	Full
		Escobar, Michael	Full
		Lou, Wendy	Full
		Stafford, Jamie	Full
	Associate Professor (2)	Kustra, Rafal	Associate
		Sun, Lei	Full
Senior Research Associate	Research Associate (1)	Thorpe, Kevin	Associate

Division of EPIDEMIOLOGY (19 faculty)			
Status	Rank	Name	SGS Status
Tenured Faculty (3)	Professor (2)	Badley, Elizabeth	Full
		Young, Kue	Full
	Associate Professor	Cole, Donald	Full
Tenure Stream (4)	Associate Professor	Fisman, David	Full
	Assistant Professor (3)	Bondy, Susan	Full
		Gagnon, France	Associate
		Gesink, Dionne	Associate
CLTA (9)	Professor (5)	Ferrence, Roberta	Full
		Mustard, Cameron	Full
		Narod, Steven	Full
		Rehm, Jurgen	Full
		Remis, Robert	Full
	Associate Professor (3)	Cohen, Joanna	Full
		Millson, Margaret	Full
		Scott, Fran	Associate
	Assistant Professor	Hall, Elizabeth	Associate
	Emeritus (3)	Emeritus (3)	Baines, Corneila
Chipman, Mary			Emeritus
Miller, Anthony			Emeritus

INTERDISCIPLINARY Division (1 faculty)			
Status	Rank	Name	SGS Status
Part-time Academic App	Associate Professor	Harvey, Bart	Full

Division of OCCUPATIONAL & ENVIRONMENTAL HEALTH (9 faculty)			
Status	Rank	Name	SGS Status
Tenured Faculty (1)	Associate Professor	Scott, James	Associate
CLTA (7)	Professor	Holness, Linn	Full
	Associate Professor (3)	Hosein, Roland	Associate
		Sass-Kortsak, Andrea	Full
		Silverman, Frances	Full
	Assistant Professor (2)	Bozek, Paul	Associate
		House, Ron	Associate
Adjunct	Ceolin, Lissa	Associate	
Emeritus (1)	Emeritus (1)	Purdham, James	Full

Division of SOCIAL & BEHAVIOURAL HEALTH SCIENCES (24 faculty)			
Status	Rank	Name	SGS Status
Tenured Faculty (7)	Professor (4)	Calzavara, Liviana	Full
		Eakin, Joan	Full
		Ferris, Lorraine	Full
		Robertson, Ann	Full
	Associate Professor (3)	Einstein, Gillian	Full
		McDonough, Peggy	Full
		Poland, Blake	Full
Tenure Stream (2)	Associate Professor	Strike, Carol	Full
	Assistant Professor	Siddiqi, Arjumand	Associate
CLTA (13)	Professor (4)	Benatar, Solomon	Full
		Daar, Abdullah	Full
		Goodstadt, Michael	Full
		Myers, Ted	Full
	Associate Professor (2)	Abuelaish, Izzeldin	Full
		Schwartz, Robert	Associate
	Assistant Professor (7)	Ahmad, Farah	Associate
		Forman, Lisa	Associate
		Jackson, Suzanne	Associate
		Kaufman, Pamela	None
		Keelan, Jennifer	Associate
		Norman, Cameron	Associate
		Thorsteinsdottir, Halla	Associate
Emeritus (2)	Emeritus (2)	Chalin Clark, Catherine	Full
		Coborn, David	Emeritus

Dalla Lana School of Public Health - status, cross, adjunct and emeritus faculty by division, status and rank with graduate student supervision level

Division of BIOSTATISTICS (43 faculty)			
Status	Rank	Name	SGS Status
Emeritus (2)	Emeritus (2)	Andrews, David	Emeritus
		Hseih, John	Emeritus
Status Appointment (32)	Professor (2)	Bull, Shelley	Full
		Willan, Andrew	Full
	Associate Professor (5)	Beyene, Joseph	Associate
		Greenwood, Celia	Full
		Paterson, Andrew	Associate
		Raboud, Janet	Full
		Tomlinson, George	Full
	Assistant Professor (22)	Abdoell, Mohamed	Associate
		Binns, Malcolm	Associate
		Boyle, Eleanor	Associate
		Briollais, Laurent	Associate
		Brown, Patrick	Associate
		Casanova, Amparo	Associate
		Dupuis, Annie	Associate
		Gardner, Sandra	Associate
		Hamid, Jemila	Associate
		Hogg-Johnson, Sheilah	Full
		Jiang, Depeng	Associate
		Lockwood, Gina	Associate
		Nisenbaum, Rosane	Associate
		Panzeralla, Tony	Associate
		Pintile, Melina	Associate
		Steenstra, Ivan	
		Stephens, Derek	Associate
		Sun, Ye	Associate
		Sutradhar, Rinku	Associate
		Taback, Nathan	Associate
	Tolusso, David		
	Xu, Wei	Associate	
	Lecturer (3)	Arenovich, Tamara	Associate
		Manno, Michael	None
		Wang, Lisa	Associate
Adjunct Appointment (2)	Adjunct (1)	Yi, Qilong	Associate
	Adjunct Lecturer (1)	Moore, Ian	Associate
Cross Appointed (7)	Professor (4)	Evans, Michael	Full
		Knight, Keith	Full
		Neal, Radford	Full

		Tritchler, David	Full
	Associate Professor (2)	Austin, Peter	Associate
		Minkin, Salomon	Full
	Assistant Professor (1)	Moineddin, Rahim	Associate

Division of EPIDEMIOLOGY (85 faculty)				
Status	Rank	Name	SGS Status	
Emeritus (5)	Emeritus (5)	Leake, James	Emeritus	
		Ashley, Mary Jane	Emeritus	
		Clarke, E. Aileen	Emeritus	
		Eyssen, Gail	Full	
		Shah, Chandrakant	Emeritus	
Status Appointment (52)	Professor (12)	Cassidy, David	Full	
		Corey, Mary	Full	
		Goel, Vivek	Full	
		Jha, Prabhat	Associate	
		Kreiger, Nancy	Full	
		Loisel, Patrick	Full	
		Marrett, Loraine	Full	
		McLaughlin, John	Full	
		O'Campo, Patricia	Full	
		Palmer, Lyle	Full	
		Shannon, Harry	Full	
		To, Teresa	Full	
	Associate Professor (11)	Associate Professor (11)	Chiarelli, Anna	Full
			Côté, Pierre	Full
			Cotterchio, Michelle	Full
			Harris, Shelley	Full
			Holowaty, Eric	Associate
			Jain, Meera	
			Johnson, Ian	Associate
			Knight, Julia	Full
			Mann, Robert	Full
			Pron, Gaylene	Associate
	Smylie, Janet	Full		
	Assistant Professor (25)	Assistant Professor (25)	Agha, Mohammad	Associate
			Bassani, Diego	Associate
			Bassil, Kate	Associate
			Bilotta, Rose	Associate
			Coleman, Brenda	
			De, Prithwish	Associate
			Deeks, Shelley	Associate
			Gournis, Effie	Associate
			Greer, Amy	

		Hung, Rayjean	Full	
		Hyman, Ilene	Associate	
		Kirsh, Victoria	Associate	
		Kristman, Vicki	Associate	
		Manuel, Douglas	Associate	
		Pole, Jason	Associate	
		Popova, Lana	Associate	
		Rea, Elizabeth	Associate	
		Reynolds, Donna	None	
		Rosella, Laura	Associate	
		Scott, Helen	Associate	
		Seary, Andrew		
		Shankardass, Ketan	Associate	
		Smith, Lesbia	Associate	
		Smith, Peter	Associate	
		Strug, Lisa	Associate	
		Lecturer (4)	Berstein, Joyce	None
			Ibrahim, Salahadin	Associate
Parthimos, Margie	Associate			
Pennick, Victoria	Associate			
Adjunct Appointment (4)	Adjunct (3)	D'Cunha, Colin	None	
		Koo, Malcolm	None	
		McGurran, John	None	
		Pasut, George	Associate	
	Adjunct Lecturer	Walker, Janice	Associate	
Cross Appointed (24)	Professor (6)	Beitchman, Joseph	Full	
		Grunfeld, Eva	Full	
		Karmali, Mohamed	Full	
		McGeer, Allison	Full	
		Olivieri, Nancy	Full	
		Rabeneck, Linda	Full	
	Associate Professor (11)	Cairney, John	Associate	
		Cheung, Angela	Full	
		Colantonio, Angela	Full	
		Crowcroft, Natasha	Associate	
		Glazier, Richard	Full	
		Hwang, Stephen	Associate	
		Jaglal, Susan	Associate	
		Krueger, Paul		
		Parekh, Rulan	Associate	
		Paszat, Lawrence	Associate	
	Upshur, Ross	Associate		
	Assistant Professor (6)	Dunn, James	Full	
		Hanley, Anthony	Associate	

		Jin, Yaping	None
		Kwong, Jeffrey	Associate
		Liu, Geoffrey	Associate
		Rhodes, Anne	Associate
	Lecturer	Boucher, Beatrice	Associate

INTERDISCIPLINARY Division (46 faculty)			
Status	Rank	Name	SGS Status
Emeritus (1)	Emeritus	Sakinofsky, Issac	Full
Status Appointment (9)	Professor (3)	Gliksman, Louis	Full
		Graham, Kathryn	Associate
		Sibbald, Gary	Associate
	Associate Professor	Willison, Donald	Associate
	Assistant Professor (5)	De Wit, David	
		Manson, Heather	
		Turner, Nigel	Associate
		Wells, Samantha	
		Zack, Martin	Associate
Adjunct Appointment (2)	Adjunct	Chaban, Michele	Associate
	Adjunct Lecturer	Orsted, Heather	Associate
Cross Appointed (32)	Professor (6)	Batty, Helen	Associate
		Davis, Dave	Associate
		Levinson, Wendy	Full
		Orbinski, James	Associate
		Rosser, Walter	Full
		Silver, Ivan	None
		Tarasuk, Valerie	Full
		Associate Professor (10)	Glover Takahashi, Susan
	Holzapfel, Stephen		Associate
	Lieff, Susan		Associate
	Oandasan, Ivy		Associate
	Rachlis, Michael		Associate
	Ratnapalan, Savithiri		Associate
	Rush, Brian		Full
	Talbot, Yves		Associate
	Watson, William		Associate
	Whittingham, Jacqueline		None
	Assistant Professor (16)	Ellison, Philip	Associate
		Frankford, Rachel	Associate
		Grill, Allan	
		Handford, Curtis	Associate
		Holmes, Candice	Associate
		Nathanson, Cynthia	Associate
Pellizzari, Rosana		None	
Pimlott, Nicholas		Associate	

		Richardson, Denyse	Associate
		Roberts, Michael	None
		Rouleau, Katherine	Associate
		Selby, Peter	Associate
		Warner, Jessica	Associate
		Windrim, Patricia	Associate
		Woo, Kevin	Associate
		Yu, Catherine	Associate
	Lecturer	Ghavam-Rassoul, Abbas	Associate
Other (2)	Lecturer	Fox, Ann	Associate
	Lecturer	Morris, Melanie	

Division of OCCUPATIONAL & ENVIRONMENTAL HEALTH (30 faculty)			
Status	Rank	Name	SGS Status
Status Appointment (19)	Associate Professor (2)	Bigelow, Philip	Associate
		Copes, Ray	Associate
	Assistant Professor (13)	Brook, Jeffrey	None
		Campbell, Monica	Associate
		Drummond, Ian	Associate
		Gorman, David	Associate
		Gower, Stephanie	Associate
		Li-Muller, Angela	Associate
		Liss, Gary	Associate
		McQuillan, Robert	Associate
		Muc, Anthony	None
		Shain, Martin	Associate
		Summerbell, Richard	Associate
		Vanderlinden, Loren	Associate
		Villeneuve, Paul	Associate
	Lecturer (4)	Fortin, Claire Marie	Associate
		Hendriks, Fred	Associate
		Kalabis, Grayzna	Associate
		Kudla, Irene	Associate
Adjunct Appointment (4)	Adjunct	Roy, Marie	None
	Adjunct Lecturer (3)	Behar, Alberto	
		Halton, David	Associate
	White, Paul	Associate	
Cross Appointed (7)	Professor (4)	Abel, Sharon	Full
		Diamond, Miriam	Associate
		Evans, Greg	Full
		Tarlo, Susan	Full
	Assistant Professor (3)	Abelsohn, Alan	Associate
		Finkelstein, Murray	None
		Scott, Jeremy	Associate

Division of SOCIAL & BEHAVIOURAL HEALTH SCIENCES (88 faculty)			
Status	Rank	Name	SGS Status
Emeritus (4)	Emeritus (4)	Badgley, Robin	Emeritus
		Kalnins, Ilze	Full
		Kelner, Merrijoy	Emeritus
		Marshall, Victor	Emeritus
Status Appointment (46)	Professor (3)	Frank, Arthur	Full
		Greaves, Lorraine	Associate
		Sacker, Amanda	Associate
	Associate Professor (8)	Adlaf, Edward	Associate
		Allison, Ken	Full
		Ashbury, Fred	Associate
		Church, Kathryn	Associate
		Friedman, Samuel	Full
		Garcia, John	Associate
		Giesbrecht, Norman	Associate
		Gignac, Monique	Full
	Assistant Professor (30)	Boutilier-Dean, Marie	Associate
		Braitstein, Paula	Associate
		Breslin, Curtis	Associate
		Callaghan, Russell	Associate
		Chatwood, Susan	Associate
		Gould, Judy	Associate
		Hart, Trevor	Associate
		Howlett, Roberta (Robbi)	Associate
		Irlbacher-Fox, Stephanie	Associate
		Kakuma, Ritsuko (Ritz)	
		Khenti, Akwatu	Associate
		Kontos, Pia	Associate
		Korn, David	None
		Kosny, Agnieszka	Associate
		Lavery, James	Full
		Leatherdale, Scott	Associate
		Lindsay, Sally	Associate
		Longo, Chirstopher	Associate
		MacEachen, Ellen	Associate
Mason, Robin		Associate	
Matheson, Flora			
McPherson, Amy	Associate		
McVey, Gail	Associate		
Murray, Stuart			
Polzer, Jessica	Associate		
Rudman, Deborah	Associate		
Scott-Marshall, Heather	Associate		
Shakya, Yogendra	Associate		

		Tompa, Emile	Associate	
		Travers, Robb	Associate	
	Lecturer (3)	Edwards, Richard	Associate	
		Hershfield, Larry	Associate	
		Campbell, Kent	Associate	
Adjunct Appointment (5)	Adjunct (4)	Draisey, Rebecca	None	
		Kang, Lai-Yi	None	
		Pakes, Barry	Associate	
		Singh, Jerome	Associate	
	Adjunct Lecturer	Husbands, Winston		
Cross Appointed (29)	Professor (8)	Birn, Anne-Emanuelle	Full	
		Cunningham, John	Full	
		Jadad, Alejandro	Full	
		McKeever, Patricia	Full	
		Muntaner, Carles	Full	
		Shaw, Brian	Full	
		Vachon, Mary	Full	
		Wheaton, Blair	Full	
		Associate Professor (12)	Angus, Janet	Associate
			Barrera, Maria	Associate
			Boydell, Katherine	Associate
			Friedman, Steven	Associate
			Gastaldo, Denise	Associate
			Jacobson, Nora	Associate
			Krym, Valerie	
			MacNeill, Margaret	Full
			McElhinny, Bonnie	Full
			Ross, Lori	Associate
			Sullivan, Terrence	Associate
			Yoshida, Karen	Full
		Assistant Professor (9)	Albert, Mathieu	Associate
			Barwick, Melanie	Associate
			Franché, Renee-Louise	Associate
			Ginsburg, Ophira	Associate
			Hamilton, Hayley	Associate
			Magee, William	Associate
			Nixon, Stephanie	Associate
			Quinonez, Carlos	Associate
			Thompson, Alison	Associate
	SGS-ONLY (4)	Professor	Polatajko-Howell, Helene	Full
Associate Professor (3)		Fox, Bonnie	Full	
		Peter, Elizabeth	Full	
		Rappolt, Susan	Full	

Faculty without a divisional assignment (56 faculty)			
Status	Rank	Name	SGS Status
Emeritus (5)	Emeritus (5)	Hewitt, David	Emeritus
		Le Riche, Harding	Emeritus
		Osborn, Richard	Emeritus
		Wigdor, Blossom	Emeritus
Status Appointment (15)	Professor	Lyons, Renee	Full
	Associate Professor (3)	DuMont, Janice	Associate
		Gibson, Brian	Associate
		Heller, James	None
	Assistant Professor (9)	Banerji, Anna	Associate
		Bercovitz, Kim	Associate
		Chiavetta, JoAnne	None
		Finkelstein, Michael	Associate
		Hyder, S. M.	Associate
		Kotsopoulos, Joanne	Associate
		Lee, Colin	None
		Mai, Verna	Associate
		Yuan, Lillian	Associate
	Lecturer (2)	Keifer, Lori	Associate
Schwartz, Roberta		Associate	
Adjunct Appointment (26)	Adjunct (25)	Armstrong, Irene	
		Bouchard, Francoise	
		De Villa, Eileen	None
		Dooling, Kathleen	
		Dubey, Vinita	None
		El-Nasser, Ziad Ali	None
		Gardner, Charles	None
		King, Arlene	None
		Kurji, Karimmohamed	
		Kyle, Robert	None
		McKeown, David	None
		Moloughney, Brent	None
		Mowat, David	
		Nosal, Robert	None
		Noseworthy, A	None
		Pollett, Graham	
		Rusen, I D	Associate
		Shahin, Rita	None
		Shapiro, Howard	None
		Timmings, Carol	
Ward, Megan	None		
Weir, Erica			

		Williams, David	
		Wong, Thomas	None
		Yaffe, Barbara	None
	Adjunct Lecturer	Chirs, Allison	
Cross Appointed (10)	Professor (5)	Ferguson, H Bruce	Full
		Naylor, David	Full
		Noyek, Arnold	Full
		Sellen, Daniel	Full
		Zlotkin, Stanley	Full
	Associate Professor (3)	Cusimano, Michael	Full
		Freeman, Risa	Associate
		Kahan, Meldon	
	Assistant Professor (2)	Meier, Rosemary	Associate
		O'Grady, Laura	

Appendix 2: History of Enrolment Data for all Courses 2005/6 to 2009/10

* denotes courses that we originally offered as a reading course

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 5004	PHS	0.5	Intro to Public Health	83	106	109	125	138
CHL 5101	SBHS	0.5	Social Theory and Health	9	8	12	11	11
CHL 5102	SBHS	0.5	Social and Political Forces in Health Care	10	10	8	7	9
CHL 5109	SBHS	0.5	Gender and Health	4	not offered	4	16	13
CHL 5110	SBHS	0.5	Theory and Practice of Program Evaluation	24	17	17	25	35
CHL 5111	SBHS	0.5	Advanced Qualitative Research Methods	not offered	not offered	not offered	24	not offered
CHL 5115	SBHS	0.5	Qualitative Analysis & Interpretation	15	10	11	7	9
CHL 5117	SBHS	0.5	A Global Perspective on the Health of Women and Children	22	12	17	12	18
CHL 5118	SBHS	0.5	International Health, Human Rights and Peace-Building	15	12	9	6	11
CHL 5120	SBHS	0.5	Population Health Perspectives on Mental Health and Addictions	6	not offered	not offered	12	12
CHL 5121	SBHS	0.5	Genomics, Bioethics and Public Policy	not offered	8	5	not offered	5
CHL 5122	SBHS	0.5	Qualitative Research Practice	6	6	8	not offered	10
CHL 5123	SBHS	0.5	Issues in Transdisciplinary Research and the Health of Marginalized Populations	3	4	2	5	not offered
CHL 5124	SBHS	0.5	Public Health Ethics (first offered as a course in 2008/09)	*	*	*	7	not offered
CHL 5201	BIOSTATS	0.5	Intro to Biostatistics I	26	37	35	34	38
CHL 5202	BIOSTATS	0.5	Biostatistics II	21	33	33	25	33
CHL 5203	BIOSTATS	0.5	Public Health Research Methods	33	38	45	43	52

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 5204	BIOSTATS	0.5	Survey Methods in the Health Sciences II	not offered	not offered	not offered	not offered	9
CHL 5207	BIOSTATS	1.0	Lab in Statistical Design and Analysis	5	13	8	11	10
CHL 5208	BIOSTATS	1.0	Lab in Statistical Design & Analysis	2	7	3	2	2
CHL 5209	BIOSTATS	0.5	Survival Analysis	3	10	24	32	26
CHL 5210	BIOSTATS	0.5	Categorical Data Analysis	17	24	24	32	26
CHL 5220	BIOSTATS	0.5	Community Health Appraisals Methods I (CHAM I)	38	39	33	42	45
CHL 5221	BIOSTATS	0.5	Community Health Appraisals Methods II (CHAM II)	25	29	21	14	49
CHL 5222	BIOSTATS	0.5	Longitudinal Data Analysis	not offered	not offered	16	not offered	not offered
CHL 5223	BIOSTATS	0.5	Applied Bayesian Methods	4	not offered	3	10	11
CHL 5224	BIOSTATS	0.5	Statistical Genetics	11	14	6	11	17
CHL 5225	BIOSTATS	0.5	Advanced Statistical Methods for Clinical Trials	11	7	4	not offered	9
CHL 5250	BIOSTATS	0.5	Biostatistics Seminar (first offered 2007/08)	n/a	n/a	7	10	15
CHL 5300	PHP	0.5	Public Health Policy (first offered 2007/08)	n/a	n/a	59	58	53
CHL 5308	PHP	0.5	Tools and Approaches for Public Health Policy Analysis and Evaluation (first offered in 2009/10)	n/a	n/a	n/a	n/a	18
CHL 5401	EPI	0.5	Intro to Epidemiology	26	36	42	33	37
CHL 5402	EPI	0.5	Epidemiological Methods II	17	29	29	23	31
CHL 5403	EPI	0.5	Epidemiology of Non-Communicable Diseases	8	7	17	13	10

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 5404	EPI	0.5	Research Methods in Epidemiology I	5	6	6	5	5
CHL 5405	EPI	0.5	Health Trends and Surveillance	21	27	30	27	29
CHL 5406	EPI	0.5	Quantitative Methods for Biomedical Research	6	3	9	9	4
CHL 5408	EPI	0.5	Research Methods II	5	4	7	4	5
CHL 5409	EPI	0.5	Cancer Epidemiology	7	not offered	8	not offered	10
CHL 5410	EPI	0.5	Occupational Epidemiology	8	10	10	11	10
CHL 5411	EPI	0.5	International Health	20	14	21	13	19
CHL 5412	EPI	0.5	Communicable Disease Epidemiology, Prevention and Control: Principles	23	16	14	21	13
CHL 5413	EPI	0.5	Public Health Sanitation	12	7	20	19	not offered
CHL 5414	EPI	0.5	Additional Topics in Epidemiology of Non-Communicable Diseases	not offered	3	not offered	not offered	not offered
CHL 5415	EPI	0.5	Communicable Disease Epidemiology, Prevention and Control: Practice	19	15	16	17	9
CHL 5416	EPI	0.5	Environmental Epidemiology	7	11	11	not offered	6
CHL 5417	EPI	0.5	Tobacco and Health: From Cells to Society	10	4	16	8	6
CHL 5418	EPI	0.5	Scientific Overviews in Epidemiology	20	23	28	26	32
CHL 5419	EPI	0.5	Empirical Perspectives on Social Organization and Health	8	3	2	2	not offered
CHL 5420	EPI	0.5	Global Research Methods	not offered	8	9	7	3
CHL 5421	EPI	0.5	Aboriginal Health	4	7	10	14	10

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 5423	EPI	0.5	Doctoral Seminar Series in Epidemiology	not offered	5	11	11	10
CHL 5424	EPI	0.5	Advanced Quantitative Methods in Epidemiology (first offered in 2008/09)	n/a	n/a	n/a	6	4
CHL 5430	EPI	0.5	Fundamentals of Genetic Epidemiology (first offered 2009/10)	n/a	n/a	n/a	*	3
CHL 5601	INTERDIS	0.5	Teaching Evidence Based Family Medicine in Clinical Setting	3	not offered	3	3	7
CHL 5602	INTERDIS	0.5	Working with Families in Family Medicine	3	6	2	4	4
CHL 5603	INTERDIS	1.0	Social, Political and Scientific Issues in Family Medicine	2	4	11	10	15
CHL 5604	INTERDIS	0.5	Human development in Family Medicine	4	5	4	4	2
CHL 5605	INTERDIS	0.5	Research Issues in Family Medicine/Primary Care	8	7	7	2	1
CHL 5607	INTERDIS	0.5	Teaching & Learning in the Health Professions – Principles and Theories	not offered	not offered	2	not offered	not offered
CHL 5608	INTERDIS	0.5	Teaching and Learning in Health Professions	not offered	not offered	2	not offered	not offered
CHL 5609	INTERDIS	0.5	Continuing Education for the Health Professionals I	not offered	not offered	6	17	10
CHL 5623	INTERDIS	0.5	Practical Management Concepts and Cases In Leading Small Health Organizations	not offered	not offered	not offered	4	not offered
CHL 5630	INTERDIS	1.0	Wound Prevention and Care	not offered	not offered	not offered	1	5
CHL 5700	GH	0.5	Global Public Health	not offered	11	12	18	23
CHL 5701	GH	0.5	Collaborative Program Global Health (first offered 2008/09)	n/a	n/a	n/a	6	11

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 5702	GH	0.5	History of International Health (initially a reading course, first offered as a graduate course in 2008/09)	n/a	n/a	n/a	7	not offered
CHL 5801	SBHS	0.5	Health Promotion	16	21	26	27	33
CHL 5803	SBHS	0.5	Health Promotion Strategies	20	21	23	not offered	32
CHL 5804	SBHS	0.5	Health Behaviour Change	12	13	21	20	22
CHL 5805	SBHS	0.5	Critical Issues in Health Promotion	15	12	14	22	21
CHL 5806	SBHS	0.5	Health Promotion Field Research	16	16	12	16	12
CHL 5902	OEH	0.5	Advanced Occupational Hygiene	9	11	10	9	10
CHL 5903	OEH	0.5	Environmental Health	11	13	21	18	12
CHL 5904	OEH	0.5	Occupational Health and Safety—Legal and Social Context	7	15	23	15	16
CHL 5907	OEH	0.5	Physical Agents II - Radiation	10	11	10	9	11
CHL 5910	OEH	0.5	Occupational and Environmental Hygiene I	14	12	16	9	14
CHL 5911	OEH	0.5	Occupational and Environmental Hygiene II	12	10	11	10	10
CHL 5912	OEH	0.5	Industrial Toxicology	11	9	10	11	9
CHL 5914	OEH	0.5	Physical Agents I - Industrial Noise and Vibration	14	11	10	12	10
CHL 5915	OEH	0.5	Control of Occupational Hazards	12	10	11	10	12
CHL 5917	OEH	0.5	Concepts in Safety Management	10	12	9	8	12
CHL 5918	OEH	0.5	Biological Hazards in the Workplace Community (first offered as a course in 2009/10)	*	n/a	*	10	10

List of Reading Courses Offered

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 7001	BIOSTATS	0.5	Mathematical Foundations of Biostatistics					x
CHL 7001	BIOSTATS	0.5	Models and Inference for Spatial and Longitudinal Data					x
CHL 7001	BIOSTATS	0.5	Simulation Methods	x	x	x	x	x
CHL 7001	BIOSTATS	0.5	Spatial Modeling		x			
CHL 7001	BIOSTATS	0.5	Special Topics in Applied Statistics			x		
CHL 7001	BIOSTATS	0.5	Statistical Analysis of Microarray Data	x				
CHL 7001	BIOSTATS	0.5	Statistical Methods for Geonomics and Genomics					
CHL 7001	BIOSTATS	0.5	Statistical Methods for Geonomics and Bioinformatics			x	x	x
CHL 7001	BIOSTATS	0.5	Statistical Methods in Data Mining in Health Sciences		x			x
CHL 7001	EPI	0.5	Advanced Quantitative Methods in Epidemiology			x		
CHL 7001	EPI	0.5	Fundamentals of Genetic Epidemiology				x	
CHL 7001	EPI	0.5	Spatial Epidemiology and infectious Diseases Modelling					x
CHL 7001	GH	0.5	Health as an Engine for the Journey to Peace					x
CHL 7001	GH	0.5	Women in Countries of Conflict					x
CHL 7001	OEH	0.5	Applied Ergonomics		x	x	x	x
CHL 7001	OEH	0.5	Biological Hazards	*		*		
CHL 7001	SBHS	0.5	Advanced Topics in Social Theory and Health: Bourdieu and the Logic of Practice		x	x		
CHL 7001	SBHS	0.5	Advanced Topics in Social Theory and Health: Feminist Perspectives on the Body					x

Course Code	Division	Course Weight	Course Title	Enrolment 2005/06	Enrolment 2006/07	Enrolment 2007/08	Enrolment 2008/09	Enrolment 2009/10
CHL 7001	SBHS	0.5	Building Community Resilience					x
CHL 7001	SBHS	0.5	Health Promotion Professional Practice Development			x		
CHL 7001	SBHS	0.5	History of International Health	x	x			
CHL 7001	SBHS	0.5	Research Design in Health Promotion					x
CHL 7001	SBHS	0.5	Systems Science Perspectives in Public Health					x

PhD Program

Appendix 3: Course Requirements for each Specialization

**Appendix 4: Full funding Policy for PhD students in DLSPH
(2010-11)**

**Appendix 5: DLSPH Graduate Department of Public Health
Sciences - Faculty of Medicine Doctoral Graduate
Student - Supervisor Agreement**

Appendix 6: PhD graduates and Thesis titles (2005-2010)

Appendix 3: Course Requirements for Each Specialization

BIostatISTICS - Course Requirements

Required Courses:

CHL5004H	Introduction to Public Health	(0.5)
CHL5208Y	Advanced Laboratory in Statistical Design and Analysis	(1.0)
CHL5210H	Categorical Data Analysis	(0.5)
CHL5250H	Biostatistics Seminar	(0.5)
	Plus one of the following:	
CHL5209H	Survival Analysis I	(0.5)
STA2209H	Lifetime Data Modeling	(0.5)

Elective Courses:

CHL5222H	Longitudinal Data Analysis	(0.5)
CHL5223H	Applied Bayesian Methods	(0.5)
CHL5224H	Statistical Genetics	(0.5)
CHL5225H	Advanced Statistical Methods for Clinical Trials	(0.5)
CHL5401H	Introduction to Epidemiology	(0.5)
CHL5402H	Epidemiologic Methods II	(0.5)
STA2004Y	Design of Experiments	(0.5)
STA2101Y	Methods of Applied Statistics I	(0.5)
STA2112H	Mathematical Statistics I	(0.5)
STA2212H	Mathematical Statistics II	(0.5)
STA3000Y	Advanced Theory of Statistics	(0.5)
CHL7001H	Statistical Methods for Genomics and Bioinformatics	(0.5)
CHL7001H	Statistical Methods in Data Mining	(0.5)
CHL7001H	Spatial Modeling	(0.5)
CHL7002H	Simulation Methods	(0.5)

Notes:

- The above requirements apply to all students in general. There will be exceptions. In some situations, the student, in discussion with the Division Head, will be allowed to substitute alternatives for some of the courses in the required list, or be given exemptions based on their previous academic experience.
- Students may also find it useful to take other courses from the Department of Statistics, or Department of Computer Science.
- As part of the course requirement for CHL5208, all students are required to participate in practical training, which includes four hours of supervised practical work per week. This is meant to provide the student with hands-on experience in design and analysis, as encountered by applied statisticians in the workforce.

EPIDEMIOLOGY - Course Requirements

Required Courses (3.0)

CHL5004H	Introduction to Public Health	(0.5)
CHL5404H	Research Methods in Epidemiology I	(0.5)
CHL5406H	Quantitative Methods in Biomedical Research	(0.5)
CHL5408H	Research Methods II	(0.5)
CHL5423H	Doctoral Seminar for Epidemiology	(0.5)
CHL5424H	Advanced Quantitative Methods in Epidemiology	(0.5)

Elective Courses (1.0)

Students are best served if their elective courses form part of a coherent package of experience. In this light, students are encouraged to choose elective courses that relate to the theme of their dissertation. For example, advanced methodological courses might be appropriate for a dissertation which involves highly complex statistical analysis; pathology courses for a dissertation which focuses more on disease process; bioethics courses for a dissertation on genetic epidemiology. Electives may also fill gaps in overall training and experience: A student with a largely social sciences background might benefit from health professional level pathology courses; a student with substantial bench-sciences training, who is interested in disease screening, might consider courses in behavioural sciences, health economics, or health policy.

Suggested courses include, but are not limited to:

CHL5250H	Special Topics in Biostatistics	(0.5)
CHL5403H	Epidemiology of Non-Communicable Diseases	(0.5)
CHL5407H	Categorical Data Analysis for Epidemiologic Studies	(0.5)
CHL5409H	Cancer Epidemiology	(0.5)
CHL5410H	Occupational Epidemiology	(0.5)
CHL5411H	International Health	(0.5)
CHL5415H	Practice of Communicable Disease Epidemiology, Prevention and Control	(0.5)
CHL5416H	Environmental Epidemiology	(0.5)
CHL5417H	Tobacco and Health: From Cells to Society	(0.5)
CHL5419H	Empirical Perspectives on Social Organization and Health	(0.5)
CHL5420H	Global Health Research Methods	(0.5)
CHL5421H	Aboriginal Health	(0.5)
CHL5450H	Special Topics in Epidemiology	(0.5)
HAD5302H	Measurement in Clinical Research	(0.5)
HAD5303H	Controlled Clinical Trials	(0.5)

SOCIAL & BEHAVIOURAL HEALTH SCIENCES - Course requirements

Required Courses for SSH: (3.5 FCE)

CHL5004H Introduction to Public Health Sciences	(0.5)
CHL5101H Social Theory and Health	(0.5)
CHL5102 Social and Political Forces in Health and Health Care	(0.5)
2 Methods courses	(1.0)
2 Electives	(1.0)

Required Courses for HBS: (3.0 FCE)

CHL5004H Introduction to Public Health Sciences	(0.5)
CHL5804H Health and Behaviour Change	(0.5)
2 Methods courses (one req'd quantitative)	(1.0)
1 CHL7000H (reading course) related to thesis topic	(0.5)
1 Elective	(0.5)

Possible Electives

CHL5109H - Gender and Health	(0.5)
CHL5421H - Aboriginal Health	(0.5)
HDP1201H - Child and adolescent Development	(0.5)
HDP3221H - Cross-Cultural Perspectives on Children's Problems	(0.5)
CHL5120H - Population Health Perspective on Mental Health & Addictions	(0.5)
CHL5124H - Public Health Ethics	(0.5)
HDP1219H - Ethical Issues in Applied Psychology	(0.5)
PHL2145H - Bioethics	(0.5)
PHL2146Y - Topics in Bioethics	(0.5)
UCS1000H - Community Development	(0.5)
SWK4422H - Social Housing and Homelessness	(0.5)
JNH5002H - Body, Health Care, Technology and Place	(0.5)
CHL5702H - History of International Health	(0.5)
NUR1083H - Comparative Politics of Health Policy in Globalizing World	(0.5)
HIS1269H - The Social History of Medicine in the 19th and 20 th Centuries	(0.5)
CHL5122H - Qualitative Research Practice	(0.5)
CHL 5115H - Qualitative Analysis and Interpretation	(0.5)
HDP3201H - Qualitative Research Methods	(0.5)
JRP1000H - Theory & Method for Qualitative Researchers: An Intro	(0.5)
CHL5308H - Tools and Approaches for PHP Analysis & Evaluation	(0.5)
CHL5420H - Global Health Research	(0.5)
NUR1028H - Introduction to Qualitative Research	(0.5)
NUR1024H - Qualitative Research: Foundations, Methods and Designs	(0.5)
NUR1025H- Doing Qualitative Research	(0.5)
SES1905H - Qualitative Approaches to Sociological Research in Education	(0.5)
TPS1834H - Qualitative Research in Higher Education	(0.5)
SOC6713H - Qualitative Method II	(0.5)
SWK6307H - Designing & Implementing Qual Social Work Research	(0.5)
CHL5424H - Advanced Quantitative Methods in Epidemiology	(0.5)
CHL5406H - Quantitative Methods for Biomedical Research	(0.5)
CHL5203H - Public Health Research Methods	(0.5)
CHL5202H - Intro Biostatistics for Students in the Biological Sciences 2	(0.5)
CHL5204H - Survey Methods in Health Sciences 2	(0.5)
CHL5403H - Epidemiology of Non-Communicable Diseases	(0.5)

CHL5408H - Research Methods in Epidemiology 2	(0.5)
CHL5418H - Scientific Overviews in Epidemiology	(0.5)
SOC6707H - Advanced Data Analysis 1	(0.5)
HAD5302H - Measurement in Clinical Research	(0.5)
HAD5737H - Tools for Implementation of Best Evidence	(0.5)
HAD5776H - Issues in Qualitative Health Services Research	(0.5)
HDP1288H - Intermediate Statistics and Research Design	(0.5)
HDP1289H - Multivariate Analysis with Applications	(0.5)
NUR1084H - Essentials in Applied Learning in Statistics	(0.5)
SWK4506H - Applied Quantitative Data Analysis for Social Workers	(0.5)

Appendix 4: Full funding Policy for PhD students in DLSPH (2010-11)

The minimum support for students in the *funded cohort* is \$15,000 plus tuition (i.e., \$22,750 for domestic students and \$32,200 for international students in 2010-11).

Basic Definitions

Funded Cohort: The funded cohort includes all full-time students, both domestic and international, in years 1-5 of a PhD program, in good academic standing.

Note: flex-time students, medical residents and faculty on sabbatical are automatically excluded from the funded cohort. However, they may be eligible for some awards from granting agencies.

Student Support: Student Support can come from *any one or a combination* of the following sources:

- Awards from external agencies such as SSHRC, NSERC, OGS, CIHR, etc.
- Internal awards such as UTO, OGSST, Connaught, some OSOTFs
- Government, International Agency and other awards for the express purpose of education.
- Stipends from supervisors and training grants to support the program (T4A income)
- Employer sponsorship

The following *are not considered sources of student support in the Faculty of Medicine:*

- Teaching Assistantships
- Research jobs not related to the student's educational program
- Casual jobs in the university
- Casual jobs outside of the university.

Conditions of Funding

1. In order to be eligible for funding students and their supervisors must complete an annual **Progress Review** and a separate annual **Student - Supervisor Agreement** every September and confirm "satisfactory academic progress".
2. Supervisors are strongly encouraged to provide support for eligible PhD students through training grants and stipends to support their academic program (T4A income). If the supervisor can only provide partial funding, the school will augment the supervisor's stipend, to the full amount of the required minimum of \$22,750, using available University of Toronto Open Fellowship funds.
3. All students are required to apply for awards from external granting agencies. Many students are successful in receiving an external award by their second or third year.
4. Students who receive funding (i.e. a competitive award such as OGS, or supervisor support) less than \$22,750 and no other support, will receive a "top-up", from the School's University of Toronto Open funds, to achieve a total of \$22,750.
5. All students who receive a competitive award equal to or greater than \$15,000 will also receive a "bonus" of up to \$2,000 to a maximum of \$25,000 for all sources of support. (Note: The School will not provide any additional funds if the sum of external awards and supervisor support is equal to or greater than \$25,000).
6. Students who do not hold external awards, or have supervisor support, will receive \$22,750 per academic year from the School's University of Toronto Open funds.

7. Students whose funding sources change throughout the year are required to provide the School with supporting documentation and revise their Student-Supervisor Agreement. In addition, students may be required to return or decline funds in order to comply with the policies of the funding sources and/or the School. The net result will be an equal or a greater amount of student support.
8. International students are strongly encouraged to apply for support from external agencies and/or their home government. Admitted international students who do not have external and/or supervisor support will receive \$32,200 per year from the School's University of Toronto Open funds.
9. Students must be registered as a full-time degree candidate for a minimum of fourteen weeks in any term during which they hold an award. Repayment of an award is required if a student is in full-time attendance fewer than 14 weeks in any term, transfers to another graduate unit, changes to part-time status or withdraws from the program.

Student Progress Review and Student-Supervisor Agreement

The School is required to monitor and keep accurate records of the student's academic progress and funding arrangements. Personalized reports are sent to each student during the summer. The student and supervisor are required to meet, to review, update and sign/submit all documents, including:

- Progress Review and Preliminary Funding Report (paper documents sent to students via mail)
- Student-Supervisor Agreement (GradSIS on-line document to which the student is invited via email)

Appendix 5: DLSPH Graduate Department of Public Health Sciences - Faculty of Medicine Doctoral Graduate Student - Supervisor Agreement

Completion of this agreement is required annually, commencing before initial enrolment, for all doctoral (MSc or PhD) students admitted to Graduate Departments in the Faculty of Medicine. Please read the terms and provisions carefully. Completion of this form indicates the intent of the student and supervisor to abide by these terms and provisions. This agreement is in effect until completion of, or withdrawal from the program of study, or change in supervision.

General Conditions of Supervision

This agreement is to be renewed annually. If there are any revisions to this agreement during the year, supervisor and student will submit a revised and signed General Conditions of Agreement to the Graduate Coordinator/Associate Director, Education, Dalla Lana School of Public Health.

Both student and supervisor will make every reasonable effort to obtain full funding for the student from appropriate sources outside the department.

<i>Supervisor's Responsibilities</i>	<i>Student's Responsibilities</i>
<ul style="list-style-type: none"> • The supervisor will direct the graduate program of the student facilitating timely completion of research, thesis writing and defense, in accordance with the Graduate Department's guidelines. • The supervisor is expected to provide mentorship and serve as an academic role model. • The supervisor and student together will recruit appropriate members for the supervisory committee • The first meeting of the supervisory committee should occur within the first 12 months of initial registration. Thereafter, formal full committee meetings should be held at least every six months. • The supervisor will provide the student with regular, constructive feedback on his/her performance and complete the annual progress review. • During any leave of absence from the University (e.g. sabbatical), the supervisor will ensure appropriate continuing supervision of the student. 	<ul style="list-style-type: none"> • The student is responsible for becoming familiar with and adhering to the rules, policies and procedures of the Graduate Department, http://www.sph.utoronto.ca/, the School of Graduate Studies http://www.sgs.utoronto.ca/, and the University http://www.governingcouncil.utoronto.ca/site3.aspx. • The student in consultation with the supervisor will prepare a research plan and timetable as a basis for the program of study, including any proposed fieldwork. • Although it is the duty of the supervisor to be available for consultation, the primary responsibility for keeping in touch rests with the student. • The student is required to apply for funding from all appropriate sources and to provide documentation to the department of all applications and successful awards. • The student must continue to make adequate progress toward degree completion documented by reports of the supervisory committee • In the Dalla Lana School of Public Health, the recommended maximum time to completion of the PhD is 5 years, including the time for thesis preparation and the final thesis defense. However, students are encouraged to complete earlier. • The student is expected to achieve the program milestones, as agreed with the supervisor. The timeframe may vary according to discipline, but will remain within the general SGS guidelines. Some of the usual milestones for the PhD are: <ul style="list-style-type: none"> ○ Completion of course work ○ Establishment of a formal supervisory

	<ul style="list-style-type: none"> committee <ul style="list-style-type: none"> ○ Completion of the comprehensive examination ○ Approval of a thesis topic ○ Defense of the dissertation • Failure to comply with any of the conditions listed above may result in the loss of good academic standing.
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Research Safety & Ethics

Research involving human subjects, experimental animals, radioisotopes and/or bio-hazardous agents must have a formal protocol approved by the research institution (University or affiliated teaching hospital). These protocols must be available to and adhered to by the student.

Research Involving Human Subjects/Animals/Radioisotopes/Bio-hazardous Agents

<http://www.sgs.utoronto.ca/Assets/governance/policies/Ethical+Conduct+in+Research+Involving+Human+Subjects.pdf>

The University of Toronto requires that all graduate student and faculty research involving human subjects be reviewed and approved by the relevant institutional Research Ethics Boards (REBs) before work can begin. Although research methodologies differ, the fundamental ethical issues and principles in research involving human subjects are common across all disciplines. The standards that must be met are set out in the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS) (<http://www.pre.ethics.gc.ca/eng/index/>). This “living” document outlines the guidelines for research involving human subjects in Canada and is the creation of the three major Canada research councils (CIHR, NSERC, SSHRC).

<http://www.research.utoronto.ca/for-researchers-administrators/ethics/>

<http://www.ehs.utoronto.ca/services/radiation.htm>

Research Safety: The supervisor is responsible for ensuring that relevant Occupational Health and Safety legislations and guidelines are communicated to the student and adhered to as proper laboratory and/or clinical practice. Students must attend appropriate training sessions (e.g., Laboratory Safety, Radioisotope Safety), as required by University or Research Institute policy. Supervisors are responsible for ensuring that such training is provided and undertaken by their students.

Sexual Harassment Guidelines and Policies

<http://www.facmed.utoronto.ca/programs/graduate/guide/harassment.htm>

The University of Toronto has specific guidelines and policies about sexual harassment covering students both on- and off-campus. The above document addresses the guidelines and policies that apply to Faculty of Medicine students whether they are located on campus or in the affiliated hospitals and research institutes.

Intellectual Property

The student, supervisor and members of the supervisory committee are expected to be familiar with and to adhere to the most current University of Toronto and affiliated hospital guidelines and policies relating to graduate research that include, but are not limited to, the following documents.

Intellectual Property Guidelines:

<http://www.sgs.utoronto.ca/governance/policies/intellectualprop.htm>

Guidelines for Faculty of Medicine Graduate Students and Supervisors in the Context of Commercialization of Inventions Based on Thesis-Related Research

<http://www.facmed.utoronto.ca/Assets/graduate/ind.pdf>

University of Toronto Policy on Inventions:

<http://www.governingcouncil.utoronto.ca/policies/invent.htm>

Standards of Professional Practice Behaviour for all Health Professional Students:

<http://www.governingcouncil.utoronto.ca/policies/ProBehaviourHealthProStu.htm>

Graduate Student Stipend

The University of Toronto policy is that doctoral graduate students must receive minimum stipends during the normal graduate degree program duration, as outlined in the Graduate Unit's Funding Policy.

Domestic Students	<ul style="list-style-type: none">• The minimum stipend in the Graduate Department of Public Health Sciences is \$15,000 plus tuition for full time domestic PhD students. (ie \$22,750 for 2010 - 2011). This policy does not apply to flex-time PhD students.• The minimum stipend must be provided in the first five years of full time registration in the PhD.• Students are expected to compete for relevant awards from external agencies such as CIHR, OGS, NSERC, SSHRC, charitable foundations, as well as awards internal to the University including OGSST and OSOTF awards. Students must indicate below the awards to which they have/will have applied for the current academic year.• It is expected that both the student and supervisor will make every reasonable effort to obtain full funding for the student. If such support cannot be derived from a combination of external and internal awards and/or a stipend from the supervisor, it is the responsibility of the Graduate Department of Public Health Sciences to provide the balance.• If the student receives an award/fellowship that is equal to or greater than \$25,000, neither the supervisor nor the Graduate Department will provide any additional funds.• Salary earned as a Teaching Assistant is not part of the Graduate Student stipend in the Faculty of Medicine.• Full time students are expected to devote themselves their program; hence, they should not work more than 10 hours per week on duties unrelated to the academic program.
Visa Students	<ul style="list-style-type: none">• In the case of a full time VISA student, the value of the minimum stipend is \$15,000 plus tuition. (ie \$32,200 for 2010 - 2011).• The minimum stipend must be provided in the first five years of full time registration in the PhD.• It is expected that both the student and supervisor will make every reasonable effort to obtain full funding for the student. If such support cannot be derived from a combination of external and internal awards and/or a stipend from the supervisor, it is the responsibility of

	the Graduate Department of Public Health Sciences to provide the balance.
Other	<ul style="list-style-type: none"> It is strongly recommended that a supervisor NOT employ his/her own students for duties related or unrelated to thesis research as conflict of interest between employee and employer falls outside the mandate of the student-supervisor relationship.

Note: The Graduate Department of Public Health Sciences has a guaranteed minimum funding policy, providing T4A studentships for our doctoral stream graduate students. This guaranteed studentship is exclusive of, and may be in addition to T4 taxable income that graduate students may earn from teaching or research assistantships. To ensure that you receive this minimum studentship funding and to ensure that the funds are administered in accordance with the terms of their sponsors, your Social Insurance Number (SIN) will be used in GradSIS only to collect information about your studentship stipends paid to you from various sources. Some sources from which information will be collected using your SIN include the University's Repository of Student Information (ROSI), the University's Human Resources Information System (HRIS), our affiliated hospitals, and granting agencies. The SIN information will remain secure and will not be stored in an identifiable format.

The University of Toronto respects your privacy. Personal information that you provide to the University is collected pursuant to section 2(14) of the University of Toronto Act, 1971. It is collected for the purpose of administering admissions, registration, academic programs, university-related student activities, activities of student societies, financial assistance and awards, graduation and university advancement, and for the purpose of statistical reporting to government agencies. At all times it will be protected in accordance with the Freedom of Information and Protection of Privacy Act. If you have questions, please refer to <http://www.utoronto.ca/privacy> or contact the University Freedom of Information and Protection of Privacy Coordinator at 416-946-7303, McMurrich Building, room 104, 12 Queen's Park Crescent West, Toronto, ON, M5S 1A8.

Appendix 6: PhD graduates and Thesis titles (2005-2010)

Year Graduated	Last Name	First Name	Thesis Title	Program	Primary Supervisor
2005	Biernacka	Joanna Monika	Statistical Methods for Studying Two Linked Disease Genes	BIOSTATS	Shelley Bull
2005	Fallah	Shafagh	Statistical Methods for Clustering Gene Expression Data	BIOSTATS	David Tritchler
2005	Flicker	Sarah	Critical Issues in Community-Based Participatory Research	SBHS	Harvey Skinner
2005	Magdenko	Luba	Societies in Transition: Alcohol Misuse and Control Policy in Ukraine	SBHS	Harvey Skinner
2005	Norman	Cameron Dale	The Web of Influence: Evaluating the Impact of Internet Interventions on Adolescent Smoking Cessation & eHealth Literacy	SBHS	Harvey Skinner
2005	Thompson	Alison	A Case Study of the Canadian Public Consultation on Xenotransplantation	SBHS	Ann Robertson
2006	Brooker	Ann-Sylvia	Dignity, Work and Health	SBHS	Joan Eakin
2006	Denny	Keith	Health As/And Social Capital: A Critical History of a Concept	SBHS	David Coburn
2006	Figueiredo	Jane Catherine	The Clinical Significance of Family History, Young Age at Diagnosis and Polymorphic Variation in Breast Cancer	EPI	Julia Knight and
2006	Hart	Corinne	The Construction of Emotion Work in Paid Home Health Care	SBHS	Joan Eakin
2006	He	Yaohua	Nonparametric Methods for Receiver Operating Characteristic (ROC) Curve Analysis in Genomic Studies and Diagnostic Medicine	BIOSTATS	Michael Escobar
2006	Hollenberg	Daniel	Integrative Health Care: A Critical Analysis of the Integration of Complementary / Alternative Medicine and Biomedicine in Clinical Settings	SBHS	Linda Muzzin
2006	Kosny	Agnieszka Arlette	The Hazards of Helping: Mission, Work and Risk in Nonprofit Social Service Organizations	SBHS	Joan Eakin
2006	Murphy	Louise	An Epidemiologic Study of the Role of Exogenous and Endogenous Estrogens in Rheumatoid Arthritis	EPI	John McLaughlin
2006	Nixon	Stephanie	Canada's International Response to HIV/AIDS: A Critical Public Health Ethics Inquiry	EPI	Ross Upshur

Year Graduated	Last Name	First Name	Thesis Title	Program	Primary Supervisor
2006	Polzer	Jessica	From Active Participant in Health to (Pro)Active Manager of Genetic Risk: (Re)Making the Ethical Subject of Risk in the Age of Genetics	SBHS	Ann Robertson
2006	Pullenayegum	Eleanor Maria	Semi-Parametric Models for Cost-Effectiveness Analysis: Improving the Efficiency of Estimation from Censored Data	BIOSTATS	Andy Willan
2006	Richardson	Julie	Predictors of Functional Transitions and Disability-Free Life Expectancy for Persons with Stroke and Coronary Heart Disease	BIOSTATS	Paul Corey
2006	Svoboda	Tomislav	Measuring the 'Reduction' in a Harm Reduction Program for Homeless Men Experiencing Harms Related to Alcohol Abuse and Problem Behaviours	EPI	Vivek Goel
2006	Xu	Wei	Recursive Partitioning Methods for Affected Relative Pair Linkage Analysis	BIOSTATS	Celia Greenwood
2007	Aguinaldo	Jeffrey Paul	Gay Men's Health: A Social Constructionist Analysis of Academic Literature and Men's Talk About the Health of Gay Men	SBHS	Ted Myers
2007	Binns	Malcolm Angus	Some Aspects of Segmented Regression Analysis Relevant to Temporal Localisation in Transient Neuroelectric Signals	BIOSTATS	Salomon Minkin
2007	Fang Lee	Sophia Shu	Random forest for multi-locus quantitative trait linkage analysis	BIOSTATS	Lei Sun &
2007	Gardner	Sandra Lynn	Change Point Models for Discontinuation Rates of Pneumocystis Carinii Pneumonia Prophylaxis in an Ontario HIV Patient Population	Biostats	Jamie Stafford
2007	Hayeems	Robin Zoe	Informed Consent and Genetic Databases: An Exploration of the Authorization Model	EPI	Ross Upshur
2007	Kristman	Vicki Leigh	Apo genotype and concussion in varsity athletes: can genetics predict brain injury	EPI	Nancy Kreiger

Year Graduated	Last Name	First Name	Thesis Title	Program	Primary Supervisor
2007	Mente	Andrew	High Urinary Calcium Excretion and Familial Aggregation of Hypertension, Kidney Stone Disease, Obesity, Excessive Weight Gain and Type 2 Diabetes in Patients with Calcareous Stones	EPI	Alexander G Logan
2007	Peirson	Leslea Jane	Policy in Praxis: A Case Study of Implementing Making Services Work for People	SBHS	Lorraine Ferris
2007	Pole	Jason	Antenatal steroid therapy for fetal lung maturation and the subsequent risk of childhood asthma	EPI	Cameron Mustard
2007	Poole	Jennifer Mary	Behind the Rhetoric of Hope: A Critical Analysis of Recovery Discourses in Ontario	SBHS	Ann Robertson
2007	Shahbaba	Babak	Improving Classification Models When a Class Hierarchy is Available	BIOSTATS	Radford Neal
2007	Tzontcheva	Anjela	A computational method for analyzing interval-censored time-to-event data in the presence of informative examination times	BIOSTATS	Jamie Stafford
2008	Bassil	Katherine	The Relationship Between Temperature and 911 Medical Dispatch Data for Heat-Related Illnesses in Toronto, 2002-2005: An application of syndromic surveillance	EPI	Donald Cole
2008	Chan	Sieu Gaen	Development of food frequency questionnaire and the database for assessing soy isoflavone intake in the chinese population	EPI	Nancy Kreiger
2008	Coleman	Brenda Lee	The Role of Drinking Water as a Source of Transmission of Antimicrobial Resistant Escherichia Coli	EPI	Allison McGeer
2008	Fehringer	Gordon	Genetic variation at the insulin-like growth factor 1 gene and association with breast cancer, breast density and anthropometric measures	EPI	Norman Boyd
2008	Gardner	Paula Jean	The Public Life of Older People Neighbourhoods and Networks	SBHS	Denise Gastaldo

Year Graduated	Last Name	First Name	Thesis Title	Program	Primary Supervisor
2008	Haines	Rebecca	Smoke, in my eyes: A bourdieusian account of young women's tobacco use	SBHS	Blake Poland
2008	Parkhomenko	Elena	Sparse canonical correlation analysis	BIOSTATS	David Tritchler
2009	Do	Minh Tam	Ionizing Radiation Exposure and Risk of Gastrointestinal Cancer: A Study of the Ontario Uranium Miners	EPI	Loraine Marrett
2009	Fan	Chun-Po Steve	Local Likelihood for Interval-Censored and Aggregated Point Process Data	BIOSTATS	Jamie Stafford
2009	Fergenbaum	Jennifer	Vascular and Metabolic Risk Factors, Carotid Atherosclerosis and Vascular Cognitive Impairment in a First Nations Population	EPI	Kue Young
2009	Lombardo	Anthony	Sex and Cyberspace: The Internet in the Sexual Lives of Men who have Sex with Men	SBHS	Ted Myers
2009	Perruccio	Anthony	The Contribution of Physical, Mental and Social Dimensions of Health to Predicting Self-Rated Health over the Course of Recovery Following Total Joint Replacement Surgery	EPI	Elizabeth Badley
2009	Rosella	Laura	A population based approach to diabetes mellitus risk prediction: Methodological advances and practical applications	EPI	Douglas Manuel
2009	Rossiter	Katherine	Undoing Wit: A Critical Exploration of Performance and Medical Education in the Knowledge Economy	SBHS	Ann Robertson
2009	Schulte	Fiona Simone Maria	Enhancing Social Competence through a Group Intervention Program for Survivors of Childhood Brain Tumors	SBHS	Maru Barrera
2009	Scott	Helen	Family Matters: An Examination of the Association Between Family Structure and Youth Injury	EPI	Mary Chipman
2009	Supapol	Wendy Bhanich	The Impact of GB Virus C Co-infection on Mother to Child Transmission of Human Immunodeficiency Virus	EPI	Robert Remis
2009	Urquia	Marcelo	Birth Outcomes of Immigrants to Urban Ontario. A population-based study	EPI	John Frank
2009	Willison	Kevin	Massage Therapy Visits by the Aged: Testing a Modified Anderson Model	SBHS	Ted Myers

MPH Program

Appendix 7: Objectives and competencies for each specialization

- Community Nutrition
- Epidemiology
- Family & Community Medicine
- Health Promotion
- Occupational & Environmental Health
- Global Health Concentration

Appendix 8: Program requirements by specialization

Appendix 7: Objectives and competencies for each specialization

COMMUNITY NUTRITION

The MPH Program in Community Nutrition is offered in collaboration with the Department of Nutritional Sciences. The MPH specialization in Community Nutrition employs a population health perspective, health promotion approaches, principles of adult education and a social determinants of health framework to prepare graduates for careers in diverse areas of nutrition practice to promote the health of individuals, communities and populations.

Philosophy, Goals, Objectives and Competencies

The MPH Program in Community Nutrition is based on a philosophy that incorporates principles of adult education in which self-assessment, self-directed learning, reflection, critical thinking, and shared learning among students form the basis of the educational experience. The belief in transferable skills as well as the importance of continuous learning also underlies the Program. The goal of the MPH Program in Community Nutrition is to prepare students to be critically reflective practitioners with the capacities, knowledge & skills to work in a wide variety of community health roles throughout their careers. Program objectives include the following:

- Students will demonstrate the ability to critically analyze information and creatively problem solve.
- Students will demonstrate awareness of and sensitivity to ethical aspects of practice and will respond appropriately.
- Students will develop the competence required for entry level dietetic practice. While the professional and educational competencies are currently being revised (www.pdep.ca), current competency areas as outlined by Dietitians of Canada include: Professional Practice; Assessment; Planning; Implementation; Evaluation; and, Communication.
- Students will understand the scope and conceptual basis underlying advanced community nutrition practice and will develop their capacities, knowledge and skills to work as partners in interdisciplinary community health teams in a variety of work settings.
- Students will develop additional expertise according to their unique interests and needs.
- Students will develop the capacity to assess and find ways to satisfy life-long learning needs.

The MPH Community Nutrition program enables students to meet the Core Competencies for Public Health Practice, version 1.0, developed by the Public Health Agency of Canada [See <http://www.phac-aspc.gc.ca/ccph-cesp/index-eng.php>], as well as the entry level to Dietetics Practice Competencies required for membership to provincial colleges of dietetics [See <http://www.dietitians.ca/Downloadable-Content/Public/Public-Health-Nutrition-Comptencies--key-informant.aspx>]

Students entering the program directly from undergraduate programs may acquire the competencies necessary for entry level dietetic practice. The program has been accredited by Dietitians of Canada. Practical experience is planned in order that students may demonstrate competencies in key areas of dietetic practice such as community nutrition, clinical nutrition, food systems administration, business and industry. Students complete placements through longer term community practica and short-term field placements in diverse organizations to gain exposure to the wide range of settings where dietitians work.

For students who have already acquired entry level dietetic practice experience and qualify to become members of a professional organization such as Dietitians of Canada and/or a provincial dietetics

regulatory body such as The College of Dietitians of Ontario, there are a variety of optional courses and practicum experiences to consider.

We work with a broad range of community partners who play a significant role in the educational experience of students. Students are exposed to a variety of community agencies from the public, private and not-for-profit sectors through practica, community field work in courses and partner involvement in course curricula.

EPIDEMEMIOLOGY

Objectives, Learning Outcomes and Competencies

The objective of the program is to provide students with a base of knowledge and skills in epidemiological methods and public health that will enable them to pursue careers in applied epidemiological research, or evidence-based public health practice. Graduates will:

- be able to work as part of a research group or a public health practice;
- be able to describe trends and patterns of disease incidence and prevalence, disease burden, factors affecting health status, and major etiologic and prognostic factors;
- understand the strengths and weaknesses of major methodological and analytical techniques;
- exhibit practical skills, including the ability to develop an epidemiological question, refine the question in light of the literature and community situation, design an appropriate study to answer the question, collect relevant data, analyze these data using commonly available statistical software, and interpret the findings relative to the literature and the community/organizational context;
- be able to prepare a paper for peer-reviewed publication, and present epidemiological information;
- have knowledge of public health principles and practice; and
- be able to read, understand, and critically appraise the scientific literature, and understand the effectiveness of core public health interventions.

Program Description

The MPH in Epidemiology provides a solid base in epidemiological methods, an understanding of the breadth of community health and opportunities for applied experiential learning in epidemiologic practice, research and policy. The degree program is intended for students who want a research career (including pursuit of a PhD in epidemiology), and those who want to work in an applied public health setting. The curriculum emphasizes quantitative methods, critical appraisal of evidence, data analysis and interpretation. In contrast to strictly skills-based training, the degree is aimed at developing leaders who will make independent contributions when faced with public health challenges, and direct initiatives in the field. In addition, completion of the program meets the requirement for physicians training to be Medical Officers of Health in Ontario, and Royal College of Physicians and Surgeons of Canada requirements for Community Medicine residents. Our graduates have pursued careers in academic research institutes, applied research agencies, and public health settings.

Progress through the MPH: There are two emphases possible within the MPH degree: a practice-based and a research-based focus. These two foci are determined by the student's interests and career goals, and run parallel to each other over the two-year course of the degree program, with opportunity for cross-over from one emphasis to the other.

Students with a strong research focus will generally obtain their practicum experiences in academic research settings; students with a strong practice focus will generally obtain their practicum experiences in a public health agency setting.

The phases of the MPH* program are identified by a set of accomplishments which the student generally will attain in order, and within a satisfactory time. These phases, which will be monitored by the Division Head, are the completion of required and elective course work, completion of the practicum, and written (+/- oral) presentation of the practicum findings. Full-time students usually complete the degree in 20 months; i.e., they are expected to complete it within two (2) years (minimum completion time is 16 months). Part-time students may take longer, but not more than four (4) years; they must submit a revised list of milestones for approval by the Division Head by the end of the first year.

Practica and the Capstone Project: The objective of the research-based practicum is to provide students with supervised research experience in academic and research institutions, to integrate course work and further develop research skills. They also offer a chance to explore the kinds of jobs that students may take on completion of the degree, and to inform students of options for further academic training (e.g., the PhD).

The objective of the public health practice-based practicum is to provide students with supervised field experience in community health agencies in Canada, to integrate course work and further develop practical skills. They also offer a chance to explore the kinds of jobs that students may take up upon completion of the degree. A minimum of one practicum placement will be completed by all students, with the option to take additional practicum offerings to reach or go beyond the total number of course credits required for the program. Students may take field placement and research practica in various combinations (e.g., two independent field or research practica, or one of each).

Students who wish a more intensive and longer-term research- or practice-based experience may register for multiple practicum placements with the same supervisor/agency and treat the sequence of practicum placements as a Master's Capstone Project. Students are expected to develop a practicum plan with the supervisor over the planned series of practica, equaling a minimum of 3.0 credits (through a combination of CHL6010Y/CHL6011H and CHL6020Y/CHL6021H/CHL6022Y practicum course entries). The plan will include appropriate and evaluable objectives associated with each of the individual practica in the sequence. By the end of the last practicum in the sequence, the student will have prepared a final report or paper, the Capstone Project report. The report may take a number of different forms, including a peer-reviewable research publication, a health status report, or a grant application. The report must be presented in a public forum and revised by the student, based on feedback received, as part of the final practicum.

FAMILY AND COMMUNITY MEDICINE

There is a very important interface between public health and primary care clinical practice.¹ It has been established that the health of a population is directly related to the availability of primary care services.² Delivery of primary care services is an important determinant of health and is therefore a global public health priority. Family physicians and other primary care clinicians are at the frontline of public health in terms of identifying emerging public health problems, promoting healthy lifestyles, screening appropriate patients for disease, advocating for patients and discharging public health initiatives to their patients.³ These individual-level services skillfully provided by primary care clinicians can be improved and enhanced by equipping those same clinicians with the population-level knowledge and skills offered by an MPH degree program.⁴

Objectives, Learning Outcomes, Competencies

The MPH (FCM) consists of a set of core courses and practicum covering both the area of public health as well as enhanced primary care and faculty development skills. There are plenty of elective opportunities, enabling the learner to take additional public health and family medicine courses to satisfy their learning objectives.

We encourage MPH (FCM) learners to work with the Program Leader to structure their MPH program so that they satisfactorily cover the following core areas of public health: Epidemiology; Biostatistics; Occupational and Environmental Health; Social and Behavioral Health Sciences; and, Health Services Administration and Policy.

The solid grounding in public health that is provided with an MPH gives family physicians and other primary care health professional's knowledge and skills that can be employed in future professional work related to public health. The degree also assists learners in becoming more effective educators, scholars, and leaders in their respective clinical areas.

Some of the courses in the program combine a brief period (usually one week) of intensive "on campus" classroom activities, followed by an extended "off campus" study period and then concluded with another intensive "on campus" block. Other courses run in the more traditional longitudinal 13-week semester format. The practica may run concurrently with the formal course work. More information on the required MPH FCM practicum can be found below.

Required Practicum in Family Medicine: MPH (FCM)

The MPH (FCM) required practicum provides an opportunity for learners to apply and reflect on the theory and knowledge gained in coursework by engaging in new academic projects in their professional settings.

Learners are required to spend a minimum of 320 hours involved in an appropriate practicum to earn the 1.0 FCE credit. Students must also identify a practicum field supervisor and all practicum projects require the approval of the Program Director.

Because the practicum involves the hands-on application of knowledge obtained via coursework, the practicum activities must be new endeavors that are related to either an area of academic core competency¹ or one of the Faculty of Medicine's faculty promotion planks² to which the learner has been exposed during previous or concurrent MPH coursework. See Table 1 or references below for specific examples.

¹ Harvey B. The issue of public health. *Canadian Family Physician* 2009;55:1057

² Starfield B. Is primary care essential. *Lancet* 1994;344:1129-1133

³ Sikora C and Johnson D. The family physician and the public health perspective. *Canadian Family Physician* 2009;55:1061-3.

⁴ Zweifler J and Evans R. Development of a residency/MPH program. *Family Medicine* 2001;33(6):453-8.

Throughout the practicum it is essential for learners to reflect on and record their experiences and to engage in regular discussions with their practicum field supervisor about their practicum progress. The practicum evaluation is based on the student's record of experiences; a 2-3 page scholarly, analytical and reflective report based on the overall experience; and a presentation to their classmates.

HEALTH PROMOTION

Founded in 1979, the MPH Health Promotion program takes an explicitly social science perspective in addressing issues related to the health of individuals, communities and populations. In particular, our program gives special attention to identifying, understanding and addressing the societal and personal determinants of health. We give attention to an array of mutually reinforcing health promotion and public health strategies, including: health education and communications, community development, the role of organizational development and change, health advocacy, and the development of health promoting public policy.

Objectives, Learning Outcomes, Competencies

The Health Promotion Program is guided by clearly articulated health promotion objectives (see below) and strives to ensure that its graduates have developed core health promotion competences (see below) that will enable them to contribute as practitioners and researchers in the fields of health promotion and public health. Our graduates have developed successful careers in a wide range of settings in academic, public and private sectors (both in Canada and overseas); they are working with a diverse set of populations

Learning Outcomes

1. Re. Issues in Health Promotion Definition and Practice
 - To have a basic understanding of the concepts of health and illness.
 - To develop a critical understanding of a range of theoretical approaches to Health Promotion.
 - To develop a critical understanding of the methods and strategies of Health Promotion, their embeddedness in social thought and their implications for health and social change.
 - To appreciate that Health Promotion primarily involves changing the social and physical conditions that either produce illness or disease or enhance health.
2. Re. Understanding the Canadian Political System and Its Relation to Health
 - To understand the relationship of Health Promotion to the Canadian health care and social service delivery systems, and to the broader social, economic and political environments.
 - To be able to recognize the effect of ideology on problem definition and choice of solution to health issues in Canada and internationally.
 - To have a basic understanding of the determinants of health and illness in Canada.
3. Re. Skills in Implementing and Evaluating Health Promotion Programs
 - To gain skills in assessing health needs of individuals and communities.
 - To gain skills in designing effective health promotions including: community development, advocacy, social marketing and policy development.
 - To gain skills in implementing effective Health Promotion interventions.
 - To gain skills in research and evaluation of Health Promotion interventions.

- To be able to work effectively across disciplines, across sectors, and with members of the public.
- To develop an ability to be critical in the appraisal and use of statistics, health surveys and epidemiological data.
- To be capable of reflecting on and assessing one's own value system and how it has an impact on professional behaviour.

Core Competencies Expected of Health Promotion Practitioners

Please note: (derived from a larger initiative to identify competences related public health practice (see <http://hpo.squarespace.com/hpo-resources/>)

1. Demonstrate knowledge necessary for conducting health promotion that includes:
 - Applying a determinants of health framework to the analysis of health issues.
 - Applying theory to health promotion planning and implementation
 - Applying health promotion principles in the context of the roles and responsibilities of public health organizations
 - Describing the range of interventions available to address public health issues
2. Conduct a community needs/situational assessment for a specific issue that includes:
 - Identifying behavioural, social, environmental and organizational factors that promote or compromise health
 - Identifying relevant and appropriate data and information sources
 - Identifying community assets and resources
 - Partner with communities to validate collected quantitative and qualitative data
 - Integrating information from available sources to identify priorities for action
3. Plan appropriate health promotion programs that includes:
 - Identifying, retrieving and critically appraising the relevant literature
 - Conducting an environmental scan of best practices
 - Developing a component plan to implement programs including goals, objectives and implementation steps
 - Developing a program budget
 - Monitoring and evaluating implementation of interventions
4. Contribute to policy development that includes:
 - Describing the health, economic, administrative, legal, social and political implications of policy options
 - Providing strategic policy advice on health promotion issues
 - Writing clear and concise policy statements for complex issues
5. Facilitate community mobilization and build community capacity around shared health priorities that includes:
 - Engaging in a dialogue with communities based on trust and mutual respect
 - Identifying and strengthening local community capacities to take action on health issues
 - Advocating for and with individuals and communities that will improve their health and well-being
6. Engage in partnership and collaboration that includes:
 - Establishing and maintaining linkages with community leaders and other key health promotion stakeholders (e.g., schools, businesses, churches, community associations, labour unions, etc.)

- Utilizing leadership, team building, negotiation and conflict resolution skills to build community partnerships
 - Building coalitions and stimulating intersectoral collaboration on health issues
7. Communicate effectively with community members and other professionals that includes:
 - Providing health status, demographic, statistical, programmatic, and scientific information tailored to professional and lay audiences
 - Applying social marketing and other communication principles to the development, implementation and evaluation of health communication campaigns
 - Using the media, advanced technologies, and community networks to receive and communicate information
 - Interacting with, and adapting policies and programming that respond to the diversity in population characteristics
 8. Organize, implement and manage health promotion interventions that includes:
 - Training and coordinating program volunteers
 - Describing scope of work in the context of organization's mission and functions
 - Contributing to team and organizational learning
 9. Conduct program evaluation and research, including:
 - To use a participatory approach to evaluation and research
 - To use appropriate qualitative and quantitative methods
 - To build new knowledge based in health promotion practice
 - To evaluate HP programs in the field
 10. Demonstrate strong academic skills, including:
 - To communicate effectively (orally and in writing)
 - To possess a variety of research and evaluation skills/methods in the collection and analysis of data
 - To be informed consumers of research, by taking a critical appraisal approach to research evidence, argumentation, etc.
 - To demonstrate creativity and innovation in health promotion practice

Field Inquiry/Research (undertaken in conjunction with 2nd Practicum)

- **Independent field research:** The 2nd practicum often involves an optional small independent field research project, for which students receive an additional 0.5 FCE (i.e., one half-course credit) by registering for CHL5806H ("Health Promotion Field Inquiry") in conjunction with their practicum.
- **Nature of field inquiry:** The field inquiry/research can take many forms and be connected to the 2nd practicum in several ways:
 - a. Students can undertake a small research project in the 2nd practicum setting/location, over and above the work required by the sponsoring agency/organization. The project will be of interest and benefit to the agency and can be accomplished during normal working hours
 - b. Students can undertake a larger research project that responds to the needs/operation of the sponsoring agency/organization.
In this case, the products emanating from both the practicum and field inquiry are related to the same project. It is important to note that separate products are required for the practicum and the field inquiry. The student will need to negotiate this with her/his academic advisor and the field supervisor before starting the practicum
 - c. The student can be part of a larger research project: for the practicum component, s/he might be a research assistant; while for her/his field inquiry, the student takes the lead with respect to a subset or component of the larger project (e.g., conducting a special analysis or doing extra interviews)

- d. In special circumstances, the student can complete an extended reflection exercise related to her/his practicum experience.
- **Requirements and grading:**
 - a. **Ethics:** An ethics protocol following the University of Toronto format is required for those doing research. Depending on the nature of the research and the population involved in the research, the ethics protocol will be reviewed and approved in one of two ways: (1) either by the course directors, or (2) by the Health Sciences Ethics Review Board of the University of Toronto.
 - b. **Assignment 1:** Progress report and reflective paper: 10-15 pages; 30% of the final mark. This report must include an indication of the progress made on research to date and a personal reflection of your role as a health promoter and researcher in a practice setting. The report should contain the following elements:
 - c. **Assignment 2:** Academic-style final report, written up as an academic paper (American Psychological Association Style): 25-30 pages of text; conceptual model and references, letters of information, consent letters or necessary background information are additional; 70% of the final mark.

OCCUPATIONAL AND ENVIRONMENTAL HEALTH

The MPH degree with a specialization in Occupational and Environmental Health (OEH) is offered with two options: a professional training option in occupational hygiene, and a research training option in occupational or environmental health.

Objectives, Learning Outcomes, Competencies

The Professional Option: Established in 1979, the objective of this degree is to train candidates for a career as an Occupational Hygiene professional. This includes the development of expertise to anticipate, identify and assess the potential risks to health posed by hazardous materials, agents and situations in the occupational environment, to evaluate exposures to these hazards and the extent of risk, and to develop and manage effective control strategies for them. Health hazards typically found in the workplace include chemicals; physical agents, such as noise, heat, vibration and radiation; and biological agents, such as bacteria, fungi and viruses. In addition ergonomic and safety hazards commonly encountered in workplaces, are also of interest in occupational hygiene as are workplace environmental controls.

The Research Option: The objective of the MPH Occupational and Environmental Health research option is to provide training to students who wish to pursue a research career in occupational and/or environmental health. The program still requires 10.0 FCE, however, there is considerably more flexibility in the course selection and in the length and nature of the practicum activities than in the professional option.

Professional Option - Learning Outcomes and Competencies

Graduates will:

- Demonstrate a knowledge of those principles in the physical and biological sciences necessary for developing competence in the theoretical and practical aspects of occupational hygiene (sufficient to pass professional exams offered by Canadian Registration Board of Occupational Hygiene and/or American Board of Industrial Hygiene)

- Describe the effects of exposure to workplace hazards (chemical, physical and biological)
- Understand and apply methods used in hazard analysis and risk assessment
- Explain the influence of workplace hazards on the general environment and the role of the hygienist in environmental protection
- Demonstrate a knowledge of ergonomics, occupational safety, accident prevention, and, occupational health and safety considerations of labour relations
- Demonstrate the critical skills required in the review of scientific literature, and a knowledge of research methods, including epidemiological and statistical techniques as they apply to occupational health
- Communicate effectively with labour, management, the public and other members of the scientific community

Learning Outcomes

1. Identification

- Be able to recognize and understand the chemical/physical and biological agents that may enter the human body by various routes.
- Understand the physical and chemical properties that influence how and how much of an agent enters the human body
- Be able to recognize or research toxicological information on agents and understand the implications for both short and long term health
- Have familiarity with basic industrial/work processes that generate contaminants of concern to health
- Have familiarity with various types of health study designs and their limitations and interpretations for use in other settings.

2. Evaluation

- Know primary means by which chemical, physical and biological agents are measured to compare to legal standards or scientific guidelines
- Understand what standards and guidelines are available, and their source and limitations for risk from exposures for various populations and individuals.
- Understand how to develop and institute monitoring to measure exposure in a population.
- Understand limitations, accuracy and precision in collecting measurements of agents by available options.
- Understand variability in exposure, and how to manage exposure data to draw useful conclusions about risk to human health.
- Be able to communicate results about health risks to various stakeholders to meet their objectives and understand the risks

3. Control

- Know various strategies to control risk to health from chemical, physical and biological agents.
- Understand and evaluate the degree of control achieved by engineering, administrative interventions or personal protective equipment in exposure control
- Understand how programs to control and evaluate risks are developed, implemented and evaluated for effectiveness.

Competencies

- Identify major environmental and occupational contaminants (chemical, biological, and physical) and describe their associated potential health effects on humans.

- Describe genetic, physiologic, and psychosocial factors that affect health risks associated with exposure to contaminants
- Specify the pathways of exposure to chemical, physical and biological agents in the workplace and in non-occupational settings.
- Design and undertake an occupational risk assessment, including the types of evidence that are used and the sources of uncertainty and variability in analysis. In particular, exposure assessment methodologies for chemical, physical and biological agents are emphasized.
- Specify approaches for recognizing, assessing, controlling and preventing chemical, biological, and physical exposures in occupational settings.
- Describe current regulatory programs, legislative authorities, and consensus guidelines that deal with occupational health issues.
- Work effectively in interdisciplinary teams in the evaluation of occupational or environmental health problems and the development of solutions to address and mitigate these problems. This includes communication and knowledge transfer to a variety of stakeholders.

GLOBAL HEALTH CONCENTRATION

This initiative brings together students from across all MPH fields to focus on global public health issues from an interdisciplinary perspective through shared courses and seminars.

Core Competencies

A public health practitioner, policy maker or researcher in global health will:

- Understand the political economy of global health issues.
- Bring a determinants-of-health and population health perspective to problem analysis, policy development and project design.
- Be cognizant of the linkages between local and global health problems.
- Work within the mandates, roles and approaches of international organizations.
- Build coalitions and work in partnership with the NGO sector and local community organizations.
- Be sensitive to cultural differences and adapt methods to local contexts.
- Apply appropriate ethical approaches to international, country level and local projects.
- Understand broad ethical issues as they relate to equity globally.

All students in the Global Health concentration are required to take: CHL 5700 Global Public Health and one international health-related elective (0.5 FCE). These courses will be considered as electives within the MPH specialization in which the student is enrolled.

In addition, each student is required to do one of their practicum placements related to global health.

Appendix 8: Program requirements by specialization

COMMUNITY NUTRITION

Term 1		
CHL 5004	Intro Public Health Sciences	0.5
NFS 1208	Field Observation 1: Intro to Community Nutrition Practice	0.5
NFS 1484	Advanced Nutrition	0.5
CHL 5221	CHAM 2: Intro to Qualitative Methods	0.5
CHL 5300	Public Health Policy	0.5
Term 2		
NFS 1211	Community Nutrition	0.5
CHL 5220	CHAM 1: Intro to Quantitative Methods	0.5
NFS 1209	Field Observation 2: Clinical Nutrition	0.5
Term 3		
Practica:		
CHL 6011	one six week clinical practicum	0.5
CHL 6010/11	one 12-16 week community/public health/ industry practicum	1.5
Term 4		
NFS 1201	Public Health Nutrition	0.5
NFS 1221	Nutrition Programs and Strategies	0.5
NFS 1210	Field Observation 3: Management of Community Food Systems	0.5
Term 5		
Practicum		
CHL 6020/21	One 12-16 week community/public health/industry practicum	1.5

EPIDEMIOLOGY

Term 1 (2.5-3.0 FCE)		
CHL5004H	Introduction to Public Health	0.5
CHL5201H	Introduction to Biostatistics I	0.5
CHL5300H	Public Health Policy	0.5
CHL5401H	Introduction to Epidemiology I	0.5
CHL5426H	Population Perspectives for Epidemiology	0.5
Term 2 (2.0-2.5 FCE)		
CHL5202H	Biostatistics II	0.5
CHL5402H	Epidemiologic Methods II	0.5
CHL5405H	Health Trends and Surveillance	0.5
CHL5418H	Scientific Overviews in Epidemiology	0.5
Summer (1.5-2.0 FCE)		
CHL6010Y	Required MPH* Practicum/Research	1.0
CHL6011H	Required Practicum/Research Extension	0.5-1.0

FAMILY AND COMMUNITY MEDICINE: (5.5 FCE)

CHL5004H	Introduction to Public Health	0.5
HAD5010H	Canada's Health System & Health Policy	0.5

CHL5602H	Working with Families in Family Medicine	0.5
CHL5603Y	Social, Political and Scientific Issues in Family Medicine	1.0
CHL5604H	Human Development Issues in Family Medicine	0.5
CHL5607H	Teaching & Learning by the Health Professions: Principles & Theories	0.5
CHL5608H	Teaching & Learning by the Health Professions: Practical Issues & Approaches	0.5
CHL5620Y	Required MPH Practicum in Family Medicine (see below)	1.0
	A research oriented course (such as CHL5605: Research Issues in Family Medicine)	0.5

HEALTH PROMOTION

Year 1 Fall Term

CHL5004H	Introduction to Public Health	0.5
CHL5801H	Health Promotion	0.5
CHL5221H	Community Health Appraisal Methods II: Introduction to Qualitative Research Methods	0.5
CHL5110H	Theory and Practice of Program Evaluation	0.5

Year 1 Winter Term

CHL5803H	Health Promotion Strategies	0.5
CHL5220H	Community Health Appraisal Methods I: Introduction to Epidemiology	0.5

Year 1 Summer Term

CHL 6010/6011	12 - wk Practicum	1.5
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Year 2 Fall Term

CHL5805H	Critical Issues in Health Promotion	0.5
CHL5300H	Public Health Policy	0.5

Year 2 Winter Term

CHL 6020/22	16 - wk Practicum	2.0
CHL 5806	Health Promotion Research	0.5

OCCUPATIONAL AND ENVIRONMENTAL HEALTH

Term I (September - December):

CHL 5912F	Industrial Toxicology	0.5
CHL 5910F	Occupational & Environmental Hygiene I	0.5
CHL 5914	Physical Agents I - Noise	0.5
CHL 5004F	Introduction to Public Health Sciences	0.5
CHL 5950	Biological Hazard in the Workplace and Community	0.5

Term 2 (January - April):

CHL 5911S	Occupational & Environmental Hygiene II	0.5
CHL 5915S	Control of Occupational Hazards	0.5
CHL 5903S	Environmental Health (recommended elective)	0.5
CHL 5220F	Community Health Appraisal Methods (CHAM)	0.5

May - August (between terms II and III):

CHL 6010	Practicum (16 weeks minimum full time, ie 40 hours/week)	2.0
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Term 3 (September - December):

CHL 5902F	Advanced Occupational Hygiene	0.5
CHL 5907F	Physical Agents II - Radiological Health	0.5
CHL 5410F	Occupational Epidemiology	0.5
CHL 5904F	Perspectives in OHS - Legal and Social Context	0.5
CHL 5917	Concepts in Safety Management	0.5

MScCH Program

Appendix 9: Program Details for each specialization

Appendix 9: Program Details for Each Specialization

Addictions and Mental Health (AMH)

Objectives, learning outcomes, competencies

There is a growing need for more advanced and focused training for health professionals practicing, or seeking to practice, in the Addictions and Mental Health field, as recognized in the May, 2006 Canadian Senate Report, “Out of the Shadows at Last: Transforming Mental Health, Mental Illness and Addiction Services in Canada” (report available at <http://www.parl.gc.ca/39/1/parlbus/commbus/senate/Com-e/SOCI-E/rep-e/rep02may06-e.htm>). Addictions and mental health problems account for five of the leading 10 contributors to the burden of illness in Canada. Professionals from a variety of backgrounds work in the AMH field.

The MScCH Addiction and Mental Health (AMH) field is designed to provide graduate-level education to health professionals who are seeking professional education and development in this field. Graduates will be familiar with biological, psychological and social determinants of addiction and mental health problems, and with current public health approaches to mental health and addiction issues, ranging from policy to individual interventions.

Admission requirements, policies and procedures, with a description of the ‘target audience’

The MScCH (AMH) program is intended for highly academically and professionally qualified individuals in established health professions, currently working in or wishing to work in the AMH field. Some individuals currently working in the Addictions and Mental Health field who are not licensed health professionals may be admitted to the MScCH with an undergraduate degree (with a minimum “mid B” average in the last academic year) plus a suitable amount of relevant professional experience in the Addictions and Mental Health context.

Program description and requirements

Required courses (2.0 FCE)

CHL 5004H	Introduction to Public Health Sciences
CHL 5804H	Health Behaviour Change
CHL 5300H	Public Health Policy
CHL 5690H	Required Practicum

Plus at least one (0.5 FCE) of

PAS 3700H	Multidisciplinary Aspects of Addiction
CHL 5120H	Population Health Perspectives on Mental Health and Addiction

Plus at least two (1.0 FCE) of

PAS 3701H	Advanced Research Issues in Addictions
CHL 5119H	Social and Political Perspectives on Drugs and Addictions
CHL 5417H	Tobacco and Health: From Cells to Society

SWK 4616H Drug Dependence: Treatment Approaches

CHL 5610H Theory and Practice of Behaviour Change in Primary Care

Elective courses (1.5 FCE)

CHL 5691H Optional practicum

Other courses relevant to the student's area of interest, with approval of the Field Director.

Family and Community Medicine (FCM)

Around the world, Family Medicine is becoming increasingly recognized as an academic discipline with its own unique collection of knowledge, skills and attitudes. The University of Toronto's MScCH (FCM) is a unique and rigorous professional graduate studies degree intended to strengthen the practice of family medicine and primary care by developing leadership, teaching and research skills of family physicians and primary care providers (such as nurse practitioners).

Objectives, learning outcomes, competencies

In order to prepare prospective faculty, entry level faculty as well as experienced academic health professionals to become more effective and scholarly leaders of academic family medicine and primary care, the MScCH aims to fulfill the following objectives:

- An understanding of social, political and scientific forces that influence the health care system and the delivery of primary health care.
- An understanding of how individual and family dynamics affect the health of a population.
- A basic understanding of public health principles and health policy.
- An understanding of how to effectively apply the principles of adult education when teaching in a classroom or a clinical setting.
- An understanding of how to design effective and innovative inter-professional educational programs in a scholarly manner.
- An understanding of research methods, basic statistical techniques and how best to apply them to the primary care clinical setting.
- An understanding of the principles of leadership and management as they relate to the health care setting.

A notable strength of the program is that the practicum requirements allow for experiential learning and reinforce the theoretical principles learned in many of the courses.

Participants in the program hail from many different parts of the world, contributing to a unique and stimulating venue for learning and collaboration. The longitudinal nature of the program allows participants to develop rich professional networks with their colleagues.

The MScCH curriculum is designed for practicing health professionals who are or can reasonably expect to become teachers and leaders in their professional fields. Graduates of our programs have often gone on to hold high-level hospital and/or university appointments at their home institutions which reflects the utility of the knowledge, skills and attitudes developed in the Family Medicine Master's programs.

Program description, requirements, program of study and practicum

The field's curriculum includes the following:

	Required Courses (3.5 FCE)	FCE
CHL5004H	Introduction to Public Health	(0.5)
HAD5010H	Canada's Health System & Health Policy	(0.5)
CHL5603Y	Social, Political and Scientific Issues in Family Medicine	(1.0)
Either	CHL5602H Working with Families in Family Medicine	(0.5)
	CHL5604H Human Development Issues in Family Medicine	
Either	CHL5607H Teaching & Learning by the Health Professions: Principles & Theories	(0.5)
	CHL5608H Teaching & Learning by the Health Professions: Principal Issues and Approaches	
CHL5690Y	Required Practicum (see below)	(0.5)
	Research-oriented course	(0.5)
	Example Elective Courses: (1.5 FCE)	
CHL5601H	Teaching Evidence-Based Family & Community Medicine in the Clinical Setting (N.B., web-based, on-line course)	(0.5)
CHL5605H	Research Issues in Family Medicine/Primary Care	(0.5)
CHL5606H	Research Issues in Family Medicine/Primary Care; Methodological Applications	(0.5)
CHL5609H	Continuing Medical Education in Health Professions	(0.5)
CHL5610H	Theory and Practice of Behaviour Change in Primary Care	(0.5)
CHL5611H	Continuing Education Planning, Management and Evaluation in the Health Professions (N.B., condensed format course)	(0.5)
CHL5612H	Theory and Application of Interprofessional Education for Collaborative Patient Centred Practice	(0.5)
CHL5623H	Practical Management Concepts and Cases in Leading Small Health Organizations	(0.5)
CHL5691Y	Field Specific Optional Practicum	(0.5)
CHL7001H/ CHL7002H	Directed Reading/Research course	(0.5)

This MScCH was created from the previous MHSc in FCM in order to provide a degree that enabled primary care and other clinicians to enhance their clinical, teaching and/or research knowledge and skills. By doing this, the degree requirements have been reduced by 50%, and where possible existing course formats have been (or are being) modified to make the program more accessible to busy health practitioners, especially physicians.

Health Practitioner Teacher Education (HPTE)

Health Practitioner Teacher Education (HPTE) is an area of growing interest as, the expectation for skills training in pedagogy and certification of teaching training become the norm for university instructors around the world. The MScCH (HPTE) addresses the practical high quality education needs of family physicians and other health professionals locally, nationally and internationally.

Program description, requirements, typical program of study and practicum

The curriculum design and program content is chosen for those health professionals who can reasonably expect to be, or already are, teachers and/or education leaders in their fields. The field's curriculum includes the following:

	Required Courses (3.5 FCE)	FCE
CHL5004H	Introduction to Public Health	(0.5)
HAD5010H	Canada's Health System & Health Policy	(0.5)
CHL5607H	Teaching & Learning by the Health Professions: Principles & Theories	(0.5)
CHL5608H	Teaching & Learning by the Health Professions: Practical Issues & Approaches	(0.5)
CHL5609H	Continuing Medical Education in Health Professions	(0.5)
CHL5611H	Continuing Education Planning, Management and Evaluation in the Health Professions	(0.5)
CHL5690Y	Required MScCH Practicum in HPTE (see below)	(1.0)
	Example Elective Courses: (1.5 FCE required)	
CHL5601H	Teaching Evidence-Based Family & Community Medicine in the Clinical Setting	(0.5)
CHL5602H	Working with Families in Family Medicine	(0.5)
CHL5603Y	Social, Political and Scientific Issues in Family Medicine	(1.0)
CHL5604H	Human Development Issues in Family Medicine	(0.5)
CHL5605H	Research Issues in Family Medicine/Primary Care	(0.5)
CHL5606H	Research Issues in Family Medicine/Primary Care; Methodological Applications	(0.5)
CHL5610H	Theory and Practice of Behaviour Change in Primary Care	(0.5)
CHL5612H	Theory and Application of Interprofessional Education for Collaborative Patient Centred Practice	(0.5)
CHL5623H	Practical Management Concepts and Cases in Leading Small Health Organizations	(0.5)
	Other elective courses in Public Health	
	Other elective courses in DFCM	
CHL5691Y	Field Specific Optional Practicum	(0.5)

This MScCH was created from the previous MHSc in FCM in order to provide a degree that was focused on the foundational knowledge and skills of faculty teaching in various Health Practitioner areas. By

doing this, the course requirements have been reduced by 50%, and where possible existing course formats have been (or are being) modified to make the program more accessible to busy health practitioners, especially physicians.

Occupational Health Care (OHC)

The Occupational Health Care (OHC) field addresses the need for occupational health care professionals (eg, physicians, nurses, physiotherapists, occupational therapists) to acquire formal professional academic training and development through graduate studies to enhance their expertise and leadership within the area of occupational health care. The program enables these health care professionals to develop their analytical, critical, scholarly, professional and knowledge translation skills in order to promote changes in practice. Occupational health care addresses the health care needs of both individuals and groups in relation to their working environments. This includes the recognition, evaluation, control, management and rehabilitation of occupationally-related diseases and injuries.

This is a recently-introduced program (2009) that has not yet admitted its first student. It is a unique program in Canada and it is anticipated that, in the future, it will attract students from across Canada and internationally.

Objectives

- To understand Canada's health care system and health policy.
- To understand the workers' compensation system in Canada.
- To understand the nature of occupational health practice within Canada's health care system and compensation system including the legal and social context of practice.
- To obtain knowledge in the scientific disciplines relevant to occupational health care practice such as toxicology, industrial hygiene and epidemiology.
- To obtain knowledge and apply this knowledge in clinical areas relevant to the practice of occupational health care, such as contact dermatitis, occupational respiratory disease, occupational allergy, occupational musculoskeletal problems, hand-arm vibration syndrome, noise-induced hearing loss, cancer, toxic exposures.
- To understand and be able to evaluate the delivery of occupational health care services in various settings such as the Ministry of Labour, Workplace Safety and Insurance Board, industry, and occupational health clinics in hospital or community settings.
- To learn how to apply epidemiological principles in the evaluation of occupational health care.
- To learn how to effectively communicate occupational health care issues with various stakeholders.

Program Description

Required Courses (3.5 FCE)

CHL 5004H	Introduction to Public Health Sciences
HAD 5010H	Canada's Health System & Health Policy
CHL 5912H	Industrial Toxicology
CHL 5910H	Occupational and Environmental Hygiene 1
CHL 5905H	Advanced Clinical Studies in Occupational Medicine
CHL 5904H	Perspectives in Occupational Health and Safety - Legal and Social Context
CHL 5690H	Required Practicum

Elective Courses (1.5 FCE)

CHL 5691H	Field-specific Optional Practicum	(0.5)
Optional Courses	Courses in Epidemiology and Biostatistics are recommended	(1.0 to 1.5)

Wound Prevention and Care (WPC)

Wounds are common in chronic illnesses such as diabetes and are major factors affecting the increasing need for home care and inappropriate long term use of acute care beds around the world. New knowledge is rapidly transforming the management of this costly and growing health problem. Clinicians from a variety of professional disciplines need the knowledge and skills to understand and convey new approaches concerning wound prevention and management effectively to their colleagues and students.

Required Courses (3.5 FCE)

CHL5004H	Introduction to Public Health	(0.5)
HAD5010H	Canada's Health Care System and Health Policy	(0.5)
CHL5630Y	Wound Prevention & Care	(1.0)
CHL5607H	Teaching & Learning in the Health Professions - Principles and Theories	(0.5)
CHL5608H	Teaching & Learning in the Health Professions - Strategies & Practical Applications	(0.5)
CHL5690H	Required Practicum	(0.5)

Elective Courses (1.5 FCE)

Optional Courses		(1.0 - 1.5)
CHL5691H	Optional Practicum	(0.5)

Special features/innovations in the MScCH

- **Practica:** The practica provide the students with opportunities to apply, critically evaluate and reflect upon their new skills directly in a health professional setting. The basic **requirements** are the same for both the required and optional practica and for each of the six fields. Students are required to spend a **minimum** of 160 hours involved in appropriate supervised field practice for 0.5 FCE. Throughout the practicum the students are expected to record and reflect upon their experiences and to engage in regular discussion with their practicum supervisor. The practicum evaluation is based on the student's performance plus a scholarly, analytical and reflective report drawing on the experience, and a presentation to their classmates. All practicum placements require the approval of the MScCH Program Committee. Students may choose an optional (additional) practicum that involves more advanced and demonstrably different work in the same field as the required practicum or if appropriate may be in one of the other fields in the MScCH.
- **Recognition of Continuing Education:** Many health professionals are required to engage in regular, formal Continuing Education. **Some** Continuing Education courses **may** be accepted as partial credit for specified graduate courses with the approval of DLSPH Curriculum/ Examination Committee. To ensure the maintenance of high academic standards, the following conditions apply:
 - Eligible Continuing Education [hotlink] courses taken at the University of Toronto, Faculty of Medicine within the previous 12 months with a final grade of at least A-.
 - In all cases the student will be required to complete specified additional work, above the CE requirements, in order to receive the graduate credit.
 - Credit will be granted for a maximum of two academic (0.5 FCE each) courses for any one student.

Courses eligible for possible graduate credit	Comparable MScCH Graduate Courses
Teaching and Learning in the Health Professions A & B	CHL5607H & CHL5608H
Continuing Education in the Health Professionals	CHL5609H
Human Development	CHL5604H
Working with Families	CHL5602H
Seminar series - Socio/Political Economic issues	CHL5603Y
Teaching evidence - based Medicine	CHL5601H
Behavioural Change Counselling in Primary Care	CHL5610H
Research Issues in Family Medicine/Primary Care	CHL5605H & CHL5606H
Continuing Education Planning, Management & Evaluation in the Health Professions	CHL5611H
International Wound Care Training Program	CHL5630Y

- Over the past several years, an interdisciplinary, part-time, 10-month, high level continuing education program at the University of Toronto in WPC for Health Professionals has attracted over 80 participants annually from Canada and abroad. A sizeable subset of participants in these Continuing Education certificate programs have strongly requested a further training program at the Master's level with more pedagogical and community health content. Clinicians from a variety of professional disciplines need these skills to convey new approaches effectively to their colleagues and students.
- With the approval of the Program Committee, a student who is *unable to complete* all the requirements for the MScCH may chose the Diploma option which requires 3.5 FCE including:
 - 0.5 FCE core Public Health Sciences;
 - 0.5 FCE Practicum; and,
 - 2.5 FCE field-specific required courses.

Note: The Diploma option is only available to students enrolled in the MScCH program (i.e., it is not available as a "direct-entry" program)

Other Education Programs

Appendix 10: Occupational Medicine Residency Program

Appendix 10: Occupational Medicine Residency Program

Description of objectives for CanMeds

(a) Medical Expert

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice including knowledge of preventive practices in an occupational context.
- Demonstrate effective consultation services with respect to patient care, education and legal opinions.
- Demonstrate skills in the identification and evaluation of health hazards in the workplace and in the development, delivery and evaluation of relevant programs for workers.

(b) Communicator

- Establish therapeutic relationships with patients and groups of workers.
- Obtain and synthesize relevant history from patients/communities/workplaces.
- Listen and communicate effectively.
- Discuss appropriate information in an effective manner with patients, the health care team, workplace parties, and government agencies.

(c) Collaborator

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.
- Work effectively with the workplace parties and government agencies.

(d) Manager

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health resources wisely.
- Work effectively and efficiently in an occupational health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.
- Establish, implement and lead an occupational health and safety team.

(e) Health Advocate

- Identify the important determinants of health affecting workers/patients.
- Contribute effectively to improved health of workers/patients and communities.
- Recognize and respond to those issues where advocacy is appropriate.

(f) Scholar

- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, residents/students and other health professionals.
- Contribute to development of new knowledge.

(g) Professional

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours.
- Practise medicine ethically consistent with obligations of a physician.
- Meet obligations and confidentiality requirements in the workplace setting.

The Learning Outcomes and Competencies are related to the demonstration of achieving competence in each of the CanMEDS roles outlined above as described in detail in the Royal College OOT document.

The Program Learning Plan and Assessment Process

This is a two year program consisting mainly of didactic course work at the DLSPH, clinical rotations, and industry and government placements. The assessment of clinical rotations and placements is done using the POWER electronic system in the Faculty of Medicine. Objectives of training in CanMEDS format have been developed for each rotation and the evaluation in each rotation involves an assessment of whether the rotation-specific objectives have been met. The residents in each rotations are evaluated by the site supervisors. The evaluation of the didactic courses varies with the evaluation methods of each course but in general consists of a combination of examinations, papers and presentations. The program director does an additional in-training evaluation report (ITER) on each resident every six months and there is an overall final in-training evaluation report (FITER) done near the completion of training by the Program Director in conjunction with the residency program committee.

Innovations & Initiatives in Education

Appendix 11: Collaborative Programs bDoctoral Program in
Global Health (CPGH)

Appendix 11: Brief Description of Selected Collaborative Programs

- The **Collaborative Program in Aboriginal Health (CPAH)** accepted its first students in the fall term of 2006. CPAH aims to promote and consolidate Aboriginal health at U of T. It provides a focus for students interested in Aboriginal health to interact and learn from each other in a manner that may not be available in their home departments or faculties. It exposes them to a broad scope of faculty expertise in terms of substantive content areas, geographical locations of research site, methodological approaches, and philosophical orientations. The interactions among students, and between students and faculty, occur through the core courses, the research seminar series, and national/regional workshops. CPAH also facilitates the placement of students in Aboriginal communities and service agencies for practicum training and field research, to prepare them for future employment and other types of interactions, while benefiting directly such organizations.
- The **Collaborative Program in Addiction Studies (CoPAS)** has a fundamental aim of stimulating interest in addictions issues by graduate students at the University of Toronto. CoPAS takes advantage of the multidisciplinary nature of addictions to involve fifteen participating departments and units as well as collaborating institutions in the provision of advanced study, research and training in addictions. Students participating in CoPAS must take a required core course and two other course equivalents, one of which can be a thesis in the area of addictions or a practicum.
- The **Collaborative Program in Aging, Palliative and Supportive Care across the Life Course** is interdisciplinary in nature with 16 participating academic units. The Collaborative Program prepares graduate students for specialization in the field of aging, and/or the field of palliative and supportive care engaging them in these issues from a life course perspective. There are two options of study, making it unique: aging and the life course, and palliative and supportive care. The Program hosts two core courses in each stream, and offers some of its elective courses online (AGE2500H Current Research Topics in Aging and the Life Course: Health and Aging) and is looking to expand its online offerings with other current topics. Two new elective palliative courses have been implemented in the past two years that offer interprofessional and interdisciplinary training online for students at different partner universities.
- The **Collaborative Program in Bioethics (CPB)**, introduced in 1994, is a research-stream graduate program, has admitted more than 75 students. The nine participating graduate units are: Rehabilitation Science; Health Policy, Management and Evaluation; Medical Science; Law; Nursing; Philosophy; Public Health Sciences; Religion; and Social Work. The CPB prepares students who will specialize in bioethics with an emphasis on innovative interdisciplinary research and scholarship in bioethics, and trains scholars whose primary goal is to contribute original research in bioethics. Other objectives include: to develop and enrich educational and research opportunities in bioethics for students within the disciplines represented by the participating graduate units; to provide experience in multidisciplinary, interdisciplinary and interprofessional education and research; to provide students interested in bioethics with a common learning experience, and a network of mentors and peers.

- The **Collaborative Program in Cardiovascular Sciences** is an exciting program created to develop co-operative and joint cardiovascular focused graduate teaching and research across departmental boundaries under the Faculties of Dentistry, Medicine, Nursing, Pharmacy and Physical Education and Health. The Program builds on the strengths of the collaborating graduate departments (Dentistry; Exercise Sciences; Health Policy, Management and Evaluation; Institute of Biomaterials and Biomedical Engineering; Institute of Medical Science; Laboratory Medicine and Pathobiology; Medical Biophysics; Nursing; Pharmaceutical Sciences; Pharmacology; Physiology; Public Health Sciences; and Rehabilitation Science) and the clinical departments of Anesthesia, Medicine and Surgery - enhancing the visibility of cardiovascular studies and facilitating interdisciplinary training and research. The Program offers diverse areas of training including 2 major streams of studies: Cardiac and Vascular. We hold a variety of student enriching events such as: (a) research seminars hosted by our diverse faculty (Circulation Rounds), (b) annual Student Research Day, where the students share their work with each other, (c) a forum dinner, a more formal event where hot topics are discussed and program students get to mingle socially and (d) our summer CSI, which are field trips to off-site locations to experience differing translational cardiovascular research styles.
- The **Doctoral Collaborative Program in Health Care, Technology and Place (HCTP)** is a cross-divisional certificate program at the University of Toronto with 10 participating units (Biomedical and Biomaterials Engineering, English, HPME, MIE, IMS, Nursing, Pharmacy, Public Health, Rehabilitation Science, and Social Work). It is the only graduate collaborative program that simultaneously focuses on the social, spatial and technological configurations that characterize health care. HCTP provides an integrated, collaborative and interdisciplinary approach to research training. Currently, there are 24 doctoral students enrolled in the collaborative program: 42% already graduated and 58% still completing their studies. The program aims to: (1) prepare doctoral students to understand, explain, and improve health outcomes associated with geographically-dispersed and technologically-mediated health care; (2) bridge knowledge gaps among doctoral students working in the life sciences, physical sciences, social sciences, and humanities who are concerned with the interconnectedness of bodies, technologies, places, and modes of work in contemporary health care; and (3) provide mentorship in interdisciplinary scholarship, including leadership skills, collaboration, grant writing, and knowledge exchange. Ultimately the goal is to facilitate research conducted by scientifically-informed humanists and philosophically-informed physical and social scientists.
- The **Collaborative Program in Health Services and Policy Research** is to provide training in health services research for graduate students, to enhance the quality and breadth of trans-disciplinary training in health services research, and to include decision makers as active partners in teaching, program and curriculum planning, and the provision of field placements for students. This competency-based Collaborative Program focuses on developing expertise in the following five areas: 1) understanding the Canadian health care system, 2) ability to carry out health services research, 3) understanding theories regarding how the health of populations is produced, 4) understanding theories of health and health services knowledge production, and 5) knowledge exchange and development of research partnerships. Students participating in this Collaborative Program must complete a practicum, Summer Institute as well as a dissertation that focuses on health services and/or policy research.

- The **Collaborative Program in Women's Health** provides interdisciplinary training in women's health research and practice for graduate students at the University of Toronto with the goal of: Helping students develop shared understandings of the complex interactions of biology and environment, sex and gender; Providing students with the necessary skill set to undertake and lead interdisciplinary, collaborative health care research projects; Enhancing mutually beneficial relationships among researchers and practitioners of women's health across the university and its affiliated teaching hospitals. The program includes shared learning experiences including a student seminar that meets once a month and a core course (that usually runs during winter semester). Students will also participate in the Women's College Research Institute's Graduate Student Research Day . To successfully complete the program, students must also successfully complete the program requirements of their home graduate unit. Master's students who successfully complete the program will have the following notation added to their transcripts: 'Completed the Collaborative Program in Women's Health.'

Research Appendices

Appendix 12: Faculty by Major Areas of Research

Appendix 12: Faculty by Major Areas of Research

The research areas of the Dalla Lana School of Public Health are epidemiology, biostatistics, social and behavioural science, public health policy, occupational and environmental health, and global health. Thus four of the five pillars of public health are covered, the other, Health Services Administration, occurs within the Department of Health Policy, Management and Evaluation.

Faculty by major areas of research

The areas of research for faculty who have their primary appointment in the DLSPH are summarized in this section. The faculty member's research is listed under the research area that represents their major research theme, though a number of faculty have projects in more than one area. For them, their names are included as additional faculty within the research area but the description of their work is not duplicated. Twelve primary research themes were identified by the 85 faculty that provided information on their research. In the last 5 years 411 projects have been initiated or completed with total funding of \$132,510,012. The majority of these funds were directed to the institution where the faculty member performed their research. The amount directed to the School was \$42,545,489.

Addictions (smoking, alcohol, gambling and illicit drugs)

Ten faculty identified Addictions as their primary research theme, and 3 more as a theme of interest. In the last 5 years 62 projects have been approved with total funding of \$21,425,693, all except \$3,014,910 directed through institutions affiliated with the School.

Assistant Professor Susan Bondy

Dr Bondy's major areas of research include addictive substances and mental health; health services and public health policy research, and general epidemiologic and survey research methods. She is lead of the Ontario Tobacco Survey initiative; has completed a multi-stage research and consultation project to develop a set of core competencies for epidemiologists working in the Canadian public health setting; a population-based public health prevention intervention study on the impact of publicly-provided Nicotine Replacement therapy and minimal behavioural support; a study to evaluate and describe the establishment of a comprehensive indoor smoking ban in a large mental health facility; a prospective study of the impact of alcohol use and different patterns of drinking on academic performance in a college population and a series of studies evaluating the impact of restrictions of smoking in indoor and outdoor public spaces in terms of second hand smoke exposure. In the last 5 years she has been principal investigator of 5 projects with total funding of \$483,359 and co-investigator of another 10.

Professor Mary Chipman

Professor Chipman has research interests in gambling behavior, addictions as they impact upon traffic collisions, violence and injury risk, health service use attributable to injury in traffic crashes, driver fatigue in traffic crashes and caregiver and child safety knowledge attitudes and behavior. She has also studied bicyclists injuries and teen driving behavior. In the last 5 years she has been principal investigator of 4 projects with total funding of \$195,170 and co-investigator of another 5.

Professor Roberta Ferrence, Executive Director, Ontario Tobacco Research Unit.

Dr Ferrence's research falls under three major themes: economic factors in smoking and other health behaviours, evaluation of legal interventions, and exposure to second hand smoke in public settings. Projects include the impact of tobacco taxation on smoking behaviour in subpopulations, the economic impact of a ban on smoking on the hospitality sector and exposure of barworkers to second hand smoke. In the last 5 years she has been principal

investigator of 8 projects with total funding of \$9,436,393 (including the Support of the Ontario Tobacco research Unit) and co-investigator of another 15.

Professor Kathryn Graham. Senior Scientist & Head, Social and Community Prevention Research, Centre for Addiction and Mental Health.

Dr Graham's research has examined environmental and motivational factors associated with aggression in licensed premises using observational data collected as part of a large scale randomized controlled study of the effectiveness of a program to prevent bar violence. She is participating in a multinational collaboration of over 40 countries relating to alcohol, gender, culture and health. In this collaboration she has focused on the role of alcohol in intimate partner violence as well as individual and country-level factors associated with harmful effects from drinking, the relationships between substance use and depression, and reasons for abstaining in different countries. In the last 5 years she has been principal investigator of 2 projects with total funding of \$2,112,311 and co-investigator of another 8.

Assistant Professor David A Korn

Dr Korn has research interests in the areas of gambling addiction, substance abuse, health promotion, health system reform, health policy and planning, harm reduction, problem prevention, youth gambling and media. His projects have included study of Youth Gambling Problems: Public Health Intervention Using the Internet and Partner Influences on Gambling; Hospitals, Gambling & the Public Good; Commercial Gambling Advertising: Understanding the Youth Connection; Gambling Marketing at Point-of-Sale; Posttraumatic Stress Disorder and Gambling; Government and Industry Interconnectedness on Gambling; and Youth, Gambling and Web 2.0: Towards and Understanding of the Net Generation and How they Gamble. In the last 5 years he has been principal investigator of 9 projects with total funding of \$1,413,450.

Associate Professor Robert Mann Senior Scientist, Social, Prevention and Health Policy Research, Centre for Addiction and Mental Health.

Dr Mann conducts research in the areas of alcohol and drug problems, associated mental health issues, and injury prevention. He has undertaken epidemiological research on impaired driving, and alcohol-related liver disease, suicide and homicide mortality. He has examined the impact on these measures of average or *per capita* alcohol consumption rates and factors that affect alcohol availability, as well as policies and prevention efforts, using time series and other methods. He has used regression-discontinuity methods to evaluate the impact of large-scale alcohol treatment initiatives. More recently, he has examined the relationship of cannabis use with collision risk and anxiety and mood disorder. In the last 5 years he has been principal investigator of 6 projects with total funding of \$1,462,225 and co-investigator of another 18.

Associate Professor Margaret Millson.

Dr Millson has been involved in a number of community-based research projects focused on prevention of HIV and hepatitis C infection among illicit drug users, related to both unsafe injection and unsafe crack smoking practices. She has also engaged in research related to broader issues of harm reduction and improvement of health for vulnerable drug using populations; research on preventive health care (e.g., immunizations) given to HIV-infected persons enrolled in the Ontario HIV Treatment Network Cohort Study; and research on the HIV prevention needs of vulnerable sub-populations of Ontario women. In the last 5 years she has been principal investigator of 4 projects with total funding of \$215,300, co-PI of 2 projects and co-investigator of another 9.

Assistant Professor Svetlana Popova. Scientist Public Health and Regulatory Policies, Centre for Addiction and Mental Health.

Dr Popova's research includes the estimation of burden and economic impact of Fetal Alcohol Spectrum Disorder (FASD) in Canada and she is collaborating in an international project to determine the Prevalence of Fetal Alcohol Syndrome (FAS) and FASD in selected countries. She

was involved in the WHO's Global Burden of Disease Comparative Risk Assessment, which provided an overview of alcohol consumption as a risk factor for burden of disease and injury. In the last 5 years she has been principal investigator of 4 projects with total funding of \$155,300 and co-investigator of another 4.

Professor Jurgen Rehm. Senior Scientist and Co-Head, Section Public Health and Regulatory Policies, Centre for Addiction and Mental Health.

Dr Rehm's research has concentrated on the epidemiology of substance use and abuse, including methodological advances such as new determination of disability weights for the burden of disease framework. His research also impacts upon population health regulatory policies, especially in the area of substance use and abuse (alcohol, tobacco, illegal drugs, abuse of psychoactive pharmaceuticals), burden of disease methodology, comparative risk assessment and cost-effectiveness assessment. In the last 5 years he has been principal investigator of 14 projects with total funding of \$5,244,554 and co-principal investigator of another 10 with total funding of \$9,816,626.

Associate Professor Carol J Strike.

Dr Strike's research interests include evaluating harm reduction programs, addiction treatment programs, methadone maintenance therapy, provider-client relationships, mental health programs and health services research. In the last 5 years she has been principal investigator of 8 projects with total funding of \$707,631, co-PI of 2 and co-investigator of 8 projects.

Other faculty working in this area:

Dr Flora Matheson, Dr Blake Poland, Dr Robert Schwartz

Child and adolescent health

Five faculty identified Child and adolescent health as their primary research theme. In the last 5 years 8 projects have been approved with total funding of \$1,756,065, nearly all through institutions external to the School.

Assistant Professor Diego Bassani Epidemiologist - Centre for Global Health Research - St. Michael's Hospital.

The focus of Dr Bassani's research is estimates of causes of neonatal and child deaths in India. In addition he contributed to Dr. Jha's work on Tobacco related mortality in India and has been responsible for the child malaria mortality estimates for India. He has conducted a large case-control study on the use of solid fuels and child mortality in India and has analyzed trends in delayed immunization among Indian children and mortality from infectious conditions among children older than 5 years in India. He is co-investigator on 2 projects.

Professor Mary Corey. Senior statistician, Hospital for Sick Children.

Professor Corey's research is in the area of cystic fibrosis(CF). She has focused on statistical models to explain the extreme variability of disease in CF and the complex interactions between multiple genetic and environmental factors. She is working with a team of North American scientists to study the effect of modifier genes in a cohort of 2500 CF patients recruited from specialized CF clinics across Canada, in collaboration with 2 other large CF modifier studies at the University of North Carolina and Johns Hopkins University. Studies are underway to apply the discoveries of the CF modifier studies to more common diseases like chronic obstruction pulmonary disease. In the last 5 years she has been principal investigator of 1 project with funding of \$190,737 and co-investigator of another 9.

Assistant Professor Amy McPherson Scientist, Bloorview Research Institute

Dr McPherson's research focuses on the psychological impact of chronic conditions on children and their families. Previous work has involved children with asthma, diabetes and HIV, and now focuses on children/adolescents with physical and intellectual disabilities. Her work centres on

the involvement of children in their health and well-being, through empowerment and education and developing and evaluating multimedia resources to do this. She is interested in health promotion for children with chronic conditions, especially around weight management, as well as the role of children in healthcare consultations. In the last 5 years she has been principal investigator of 1 project with funding of \$2,500 and co-investigator of another 4.

Assistant Professor Jason D Pole. Scientist, Pediatric Oncology Group of Ontario.

Dr. Pole's research interests are in the areas of health care utilization among childhood cancer survivors, the effects of childhood cancer treatment specifically on education achievement and the financial impact of a childhood cancer diagnosis on the family and the long-term financial health of the survivor. Coupled with his work in pediatric oncology, Dr. Pole participates in a variety of other pediatric and adolescent health research in the areas of eating disorders, work injury and sexual health. In the last 5 years he has been principal investigator of 2 projects with funding of \$100,382 and co-investigator of another 6.

Professor Teresa To. Senior Scientist at the Child Health Evaluative Sciences, the Research Institute of the Hospital for Sick Children.

Professor To has developed a population-based research program that focuses on childhood asthma. Using pediatric health databases, she examines factors that influence the health of children with asthma and their health outcomes. Her current asthma care research program spans from the acute, primary care settings to the population levels. In the last 5 years she has been principal investigator of 8 projects with funding of \$1,442,443 and co-investigator of another 13.

Chronic (non-communicable) disease epidemiology, prevention and screening

Sixteen faculty identified Chronic disease epidemiology, prevention and screening as their primary research theme, and 5 more as a theme of interest. In the last 5 years 65 projects have been approved with total funding of \$43,340,426, \$8,600,000 directly routed through the School.

Professor Elizabeth M Badley. Director, The Arthritis Community Research and Evaluation Unit.

The main theme of Dr Badley's research relates to chronic disabling health conditions, especially chronic diseases in the population using arthritis and other musculoskeletal conditions as models and the population impact of arthritis and strategies to reduce that impact. A further theme is health services research on need, access and provision of care for people with arthritis. This includes analysis of geographic variations in access and provision of care, surveys of health providers (rheumatologists, orthopedic surgeons), studies of alternative models of care (with focus on an extended role for rehabilitation professionals) and the development and evaluation of a primary health care arthritis intervention. Another area relates to the use of models for understanding of disability, comprising work on theoretical frameworks for social participation, the role of personal and environmental contextual factors as well as an ongoing study of social participation in people with osteoarthritis and those without this condition. In the last 5 years she has been principal investigator of 11 projects with total funding of \$4,034,590 and co-investigator of another 22.

Associate Professor Anna M. Chiarelli. Lead scientist in Population Studies and Surveillance at Cancer Care Ontario.

Dr. Chiarelli's research focuses on the prevention of cancer with the aim of determining the effectiveness of cancer screening on reducing mortality in different populations, the clinical effects of delays on diagnosis and barriers to screening. She is also involved in the improvement of methodology for the evaluation of breast screening programs. In the last 5 years she has been principal investigator of 5 projects with total funding of \$1,931,825 and co-investigator of another 4.

Associate Professor Pierre Côté. Scientist, Toronto Western Research Institute, Toronto Western Hospital

Dr Côté's research focuses on the epidemiology of musculoskeletal pain and disability. He is also leading the University Health Network Whiplash Intervention Trial, a pragmatic randomized trial of the management of whiplash injuries in Ontario. He has conducted epidemiological studies of the risks (vertebrobasilar artery stroke and cauda equine syndrome) associated with chiropractic treatment and studies aimed at describing the burden of pain and disability associated with neck pain and mild traumatic brain injuries in injured workers who make a workers' compensation claim to the Ontario Workplace Safety and Insurance Board. In the last 5 years he has been principal investigator of 4 projects with total funding of \$3,300,243, Co-PI of 2 projects and co-investigator of another 10.

Associate Professor Michelle Cotterchio Scientist, Population Studies and Surveillance, Cancer Care Ontario

Dr. Cotterchio's research program focuses on breast, colorectal and pancreatic cancer - and modifiable risk factors as well as the interaction with genetic factors. She has conducted many large population-based case-control studies evaluating cancer risk and the association between nutrition (e.g., phytoestrogen intake, meat consumption), other modifiable factors (e.g., medication use, vitamin D, colon cancer screening), and genetics (e.g., polymorphisms in carcinogen metabolizing enzymes). In the last 5 years she has been principal investigator of 6 projects with total funding of \$2,515,995, co-PI of 2 projects and co-investigator of another 9.

Professor Emeritus Gail McKeown Eyssen.

Dr Eyssen's research has focused primarily on colorectal cancer. She is one of the investigators from Ontario involved in an international, six centre initiative, the Co-operative Family Registry, which has collected epidemiologic information, and blood and tissue samples, from cases and selected family members, as well as from controls (in some centres, including Ontario). She has also served as the Toronto centre PI of an international multi-centre trial funded by NIH in which it has been demonstrated that aspirin but not folic acid supplementation can reduce the risk of recurrence of colorectal polyps, and has been a co-investigator of trials of dietary interventions designed to improve lipid profiles related to the metabolic syndrome. In the last 5 years she has been co-investigator of 6 projects.

Associate Professor Eric J Holowaty. Senior Consultant - Population Studies and Surveillance, Cancer Care Ontario.

Dr Holowaty's research interests include historical record linkage cohort studies; second primary cancers; predictive modeling; small area mapping and spatial analysis; cancer registration and quality control. He was the Principal Investigator for the Ontario Health and Environment Integrated Surveillance Project, a collaborative GIS project for mapping cancer, including its outcomes and determinants, as well as for risk assessment in relation to potential environmental hazards and cancer. In the last 5 years he has been principal investigator of 4 projects with total funding of \$588,735, and co-investigator of another 15.

Assistant Professor Rayjean Hung. Cancer Care Ontario Research Chair in Population Studies, Samuel Lunenfeld Research Institute of Mount Sinai Hospital.

Dr. Hung has contributed to the establishment of the International Lung Cancer Consortium (ILCCO) and has been its Scientific Coordinator since its inception. Dr. Hung is leading several data pooling projects within ILCCO including coordinated genotyping, medical condition and alcohol consumption and lung cancer risk and leads the post-genomewide association research initiative on lung cancer. Her main interests in lung cancer genetics include pathway analysis, hierarchical modeling, resequencing and risk prediction. Dr. Hung has also been collaborating with International Agency for Research on Cancer to set up the International Study of Embryonal Tumors (ISET). In the last 5 years she has been principal investigator of 4 projects with total funding of \$1,775,285 and co-investigator of another 10.

Professor Prabhat Jha. Director, Centre for Global Health Research, Li Ka Shing Knowledge Institute, St Michael's Hospital

Dr Jha's research includes large scale epidemiological studies including launching a Million Death Study of Indian households; creation of innovative methods to determine cause of death using "verbal autopsy" and reliable quantification of HIV-1 transmission in the population. He is undertaking a survey of adults 18 + for lifestyle factors and selected simple physical measurements (height, weight, waist-hip ratio, blood pressure, peak flow) in over 1 million homes. Among a sub-sample of 10,000 adults, blood spots have been collected so as to study the genetic and biological correlates of baseline risk. The eventual aim is to expand blood-based measurement to 2-3 million adults. In the last 5 years he has been principal investigator of 8 projects with total funding of \$12,760,968 and co-investigator of another 2.

Assistant Professor Victoria Kirsch. Scientist, Cancer Care Ontario.

Dr. Kirsh is involved in developing the Ontario Health Study, being particularly involved in dietary assessment methodology for this cohort. She is the Principal Investigator on a study to assess the risk of cancer associated with the use of computed tomography scans among children and adolescents and is the new Principal Investigator for the Canadian Study of Diet, Lifestyle and Health, a cohort study of 75,000 alumni from three Canadian universities, and will be involved in various research projects examining the association between baseline dietary and lifestyle factors and subsequent cancer risk among cohort members. Other research projects include those within the Ontario Breast Screening Program, evaluating differences between screen and interval-detected cancers and the effect of hormone therapy on tumour characteristics; and within the Ontario Women's Health Study, evaluating the effect of phytoestrogen intake on the risk of breast cancer. In the last 5 years she has been principal investigator of 4 projects with total funding of \$342,348 and co-investigator of another 7.

Associate Professor Julia Knight Senior Investigator, Samuel Lunenfeld Research Institute, Leader, Prosserman Centre for Health Research, Mount Sinai Hospital, Toronto.

Dr Knight's research concerns breast cancer etiology, including the potential protective role of vitamin D in breast cancer and the exploration of optical spectroscopy of the breast as a potential tool to evaluate breast cancer risk. She is co-PI of the Ontario Familial Breast Cancer Registry, part of the Breast Cancer Family Registry funded by the US NIH. She is the local site PI in a multi-site study of genetic and other factors associated with the risk of contralateral breast cancer in women with a first primary breast cancer and will shortly begin a study of body composition and body fat distribution and biomarkers related to breast cancer risk. In the last 5 years she has been principal investigator of 5 projects with total funding of \$1,740,308 and co-investigator of another 6.

Professor Nancy Kreiger Head of the Division of Epidemiology, DLSPH. Senior Scientist, Population Studies, Cancer Care Ontario

Dr Kreiger led the development of the Ontario Health Study, a broadly-defined study of chronic diseases within Ontario, part of a national cancer cohort. In this project, it is planned to identify determinants of risk factors for several chronic diseases; collect and store biospecimens; and collect community-level data to allow for multilevel modeling and for studies of the impact of municipal policies on risk factors and on disease outcomes. She is co-principal investigator of the Canadian Multicentre Osteoporosis Study, and until recently principal investigator of the Canadian Study of Diet, Lifestyle, and Health. In the last 5 years she has been principal investigator of 3 projects with total funding of \$142,025, co-principal investigator of one with funding of \$8,441,132 and co-investigator of another 13.

Assistant Professor Verna Mai. Director of Screening Programs, Cancer Care Ontario.

Dr Mai's research projects relate to cancer screening. In the last 5 years she has been co-principal investigator of 1 project with funding of \$226,000 and co-investigator of another 4.

Professor Loraine D Marrett. Senior Scientist and Director, Surveillance, Population Studies and Surveillance, Cancer Care Ontario

Dr Marrett's research primarily comprises cancer surveillance, with particular foci on special subpopulations such as Aboriginals, adolescents and young adults and those exposed to carcinogens in the workplace, and on developing and using high quality data, indicators and methods. Additional research areas include ultraviolet radiation and skin cancer and cancer in relation to workplace exposures. Surveillance research with First Nations populations demonstrated survival deficits for Ontario First Nations women with breast cancer which led to a research project to explore determinants of this survival deficit. In the last 5 years she has been principal investigator of 6 projects with total funding of \$1,754,894 and co-investigator of another 7.

Professor John R McLaughlin. Vice President, Population Studies & Surveillance, Cancer Care Ontario.

Dr. McLaughlin's research has concentrated on interdisciplinary, population-based studies of the relative contribution of environmental and genetic factors in cancer etiology; identifying and characterizing determinants of risk, health outcomes, genetic risk and environmental modifiers of risk; as well as evaluation of processes for risk communication and strategies for cancer control. He is the lead cancer epidemiologist and founding director of the Ontario Health Study. In the last 5 years he has been principal investigator of 2 projects with total funding of \$4,627,210 and co-investigator of another 14.

Professor Anthony B Miller. Associate Director Research, Dalla Lana School of Public Health. Dr Miller is the Principal Investigator of the Canadian National Breast Screening Study (CNBSS), currently entering its 20-25 follow-up years, and a collaborator in the US Prostate, Lung, Colon and Ovary screening trial. He is a co-investigator in the Mumbai Screening Trial, and scientific advisor to breast screening projects in Egypt, Iran, Iraq, Morocco, Oman, Sudan and the Yemen. As he did not have an active faculty appointment at the time he initiated the 20-25 year follow up of the CNBSS, Dr Steven Narod was the lead applicant on that grant, included with Dr Narod's research funding. He is a scientific advisor to the Ontario Health Study.

Professor Kue Young. TransCanada Pipelines Chair in Aboriginal Health & Well-being. Professor Young's research interests are in aboriginal health, epidemiology of diabetes and cardiovascular diseases, health surveys and data linkage. He leads the CIHR Team in Circumpolar Health Research and is sustaining and transforming a network for indigenous health research development in Ontario. In the last 5 years he has been principal investigator of 2 projects with total funding of \$8,600,000.

Other faculty working in this area:

Dr Farah Ahmad, Dr Ilene Hyman, Dr Steven Narod, Dr Robert Schwartz, Dr Teresa To

Genetic epidemiology and Statistical Genetics

Six faculty identified Genetic epidemiology and statistical genetics as their primary research theme, and 1 more as a theme of interest. In the last 5 years 37 projects have been approved with total funding of \$14,372,822; \$4,216,123 routed through the School.

Professor Shelly Bull. Samuel Lunenfeld Research Institute of Mount Sinai Hospital. Dr Bull's research program is concerned with innovative statistical approaches to dissect genetic and environmental determinants of complex human traits including estimation and inference for multinomial logistic regression, development and application of statistical methods in human genetics and genome-wide studies, and interdisciplinary research to evaluate molecular markers in human cancer. New approaches for practical inference in logistic regression models for multiple-category outcomes particularly useful with sparse data have been disseminated. A general resampling method to address the problem of upward bias

in genetic effect estimation has been developed. Related studies are concerned with alternative approaches to gene discovery that rely on gene-based or region-based approaches. She also collaborates in the design and analysis of studies to determine the prognostic value of specific molecular markers in identifying subgroups of patients that may benefit from new therapies. In the last 5 years she has been principal investigator of 7 projects with total funding of \$3,152,000 and co-investigator of another 7.

Assistant Professor France Gagnon. Canada Research Chair in Genetic Epidemiology
Dr Gagnon's research focuses on the genetic epidemiology of cardiovascular diseases and risk factors. Although her research is highly specialized in genetic epidemiology, it reflects a cross-disciplinary perspective as it requires the integration of fundamental concepts and principles in biology, genetics, statistics, and epidemiology. Her program involves three different levels of research: discovery and characterization of genetic determinants underlying cardiovascular diseases and risk factors, the main focus of her research program; assessment of novel study designs and analytic approaches, and knowledge synthesis and transfer, which include training as an integral part. Her program aims at bridging laboratory-based and population-based research, with the overall goal of improving our ability to prevent and manage cardiovascular diseases. In the last 5 years she has been principal investigator of 11 projects with total funding of \$3,822,873 and co-investigator of another 3.

Assistant Professor Rafal Kustra
Dr Kustra is engaged in research in the area of statistical methods in high-throughput genomics. The methodological research includes designing new methods for signal estimation, new inference techniques, and new methods for data description and hypothesis generation. He has also been engaged in a number of large collaborative projects in the area of colorectal cancer genomics. In the last 5 years he has been principal investigator of 4 projects with total funding of \$393,250 and co-investigator of another 2.

Professor Steven Narod. Tier Canada Research Chair in Breast Cancer, Women's College Research Institute.
Dr Narod's research covers many different areas. For hereditary breast and ovarian cancer, he collects baseline and follow-up questionnaires on study subjects from many institutions in North America and Europe. He is studying the distribution of BRCA1 and BRCA2 mutations in the Bahamas, Venezuela, Peru, Mexico, Colombia, Costa Rica, Pakistan, Vietnam, and Greece focusing on both genetic and environment factors that contribute to higher than normal incidence of cancer. The largest DNA bank in the world for esophageal cancer has been established at Dr. Narod's laboratory to study genetic susceptibility to this cancer and identify the gene or genes responsible for the hereditary basis of esophageal cancer in Iran. He is studying familial cancer in women of Ashkenazi Jewish ancestry to identify those with a genetic predisposition to developing cancer through a saliva DNA test. A BRCA1, BRCA2 and Ovarian Cancer survivorship study seeks to review the genetic, clinical and pathological features of a series of 1500 ovarian cancer patients to integrate this information into a predictive model for ovarian cancer survival. In the last 5 years he has been principal investigator of 12 projects with funding of \$6,139,892 and co-investigator of another 5.

Professor Lyle Palmer Executive Director of the Ontario Health Study and Director of the Genetic Epidemiology Program, Ontario Institute for Cancer Research.
Together with many partner organizations across Ontario, Prof Palmer is leading a large-scale expansion of the provincial capacity in the area of genetic epidemiology. Before moving to Canada in July 2010, Prof Palmer was the Foundation Chair in Genetic Epidemiology and founding Director of the Centre for Genetic Epidemiology and Biostatistics at the University of Western Australia. The Ontario Health Study, with funding secured in excess of \$20 million, is administered through the Ontario Institute for Cancer research.

Associate Professor Lei Sun

Dr Sun's research focuses on development and application of statistical methodologies and computational tools for genetic studies of complex human diseases and traits. Her recent work has focused on problems arising from data generated from high-throughput genotype technologies, including high-dimensional hypothesis testing and robust association methods. Dr. Sun also has substantial on-going collaboration work focusing on genetic studies of Type 1 Diabetes, Cystic Fibrosis modifiers and Thrombosis. In the last 5 years she has been principal investigator of 3 projects with funding of \$864,810 and co-investigator of another 1.

Other faculty working in this area:

Dr Rayjean Hung

Global Health

Four faculty identified Global health as their primary research theme, and 4 more as a theme of interest. In the last 5 years 12 projects have been approved with total funding of \$4,758,452; \$1,274,902 routed through the School.

Professor Solomon R Benatar

Professor Benatar's research is directed to understanding and defining global health and the forces that influence the health of populations across the globe. The flow of research has been from evaluating data to make a diagnosis of the problems that lie at the heart of disparities in global health, to conceptualizing how the current situation has been reached and consideration of ways in which challenges to global health could be addressed. In the last 5 years he has been principal investigator of a project in South Africa funded by the US NIH Fogarty International Center with total funding of \$1,150,000.

Associate Professor Donald Cole.

Donald Cole's research builds on experience in work & health and agriculture & health in Canada, Latin America and Africa. He has become particularly interested in public health intervention research in these fields, leading projects on reducing pesticide use among Andean small farmers and assessing the contributions of urban agriculture to health and nutrition. More recently, he has built on his long-standing work internationally to begin educational research on evaluating health research capacity development in a global context. In the last 5 years he has been principal investigator of 6 projects with total funding of \$1,274,902, co-PI of another 2 and co-investigator of 16.

Assistant Professor Lisa Forman. Director of the Comparative Program on Health and Society at the Munk School of Global Affairs.

Dr Forman's research focuses on further developing the right to health impact assessment methodology for implementation in low and middle-income countries. She is also exploring the broader relevance of human rights and the right to health to global health, including in relation to maternal mortality and mental health. In the last 5 years she has been principal investigator of 2 projects with total funding of \$96,000, and co-investigator of 1.

Associate Professor Halla Thorsteinsdóttir. McLaughlin Rotman Centre for Global Health.

Dr Thorsteinsdóttir's research focuses on health biotechnology in developing countries and emerging economies and its role in addressing health problems and contributing towards economic development. She is examining the role of Canada's collaboration for health research and innovation with developing countries and health biotechnology collaboration among developing countries. In the last 5 years she has been principal investigator of 3 projects with total funding of \$1,337,550 and co-investigator of another 1.

Other faculty working in this area:

Dr Diego Bassani, Dr Gillian Einstein, Dr Suzanne Jackson, Dr Prabhat Jha

Health Promotion, Social Determinants of Health and Social Epidemiology

Eleven faculty identified Health promotion, Social determinants of Health or Social Epidemiology as their primary research theme, and 4 more as a theme of interest. In the last 5 years 65 projects have been approved with total funding of \$5,600,999, all except \$1,204,389 routed through the School.

Assistant Professor Farah Ahmad

Dr. Ahmad conducts mixed-method research with the aim to address health disparities through health promotion and prevention of chronic illnesses and diseases. The thrust of her research work concerns re-orientating health services and creating supportive environments in the community for populations marginalized by their life context (e.g. exposure to violence or mental distress) and/or intersecting social determinants of health, such as gender, migration, and ethnicity. Dr. Ahmad's research foci include: domestic violence; cancer screening; mental health; immigrant/ethnic health; women's health; eHealth; provider-patient communication; and access to health services. Dr. Ahmad has strong collaborative ties with several health and community based institutions. In the last 5 years she has been principal investigator of 4 projects with total funding of \$200,118, Co-PI of another 4 and co-investigator of 7.

Assistant Professor Dionne Gesink.

Over the past 5 years, Dr Gesink has a research program in the area of social epidemiology and infectious diseases. Her focus is on the spatial, social, cultural, environmental and behavioural factors influencing sexual and reproductive health and infectious disease transmission. The research has been conducted in two main streams: the spatial epidemiology of sexually transmitted infections, and sexual and reproductive health with First Nations, Inuit and Métis communities in northern, rural, and frontier communities. In the last 5 years she has been principal investigator of 9 projects with total funding of \$785,894 and co-investigator of another 2.

Assistant Professor Ilene Hyman Research Associate, Cities Centre, University of Toronto.

Dr Hymans research interests include health equity, immigrant and refugee health, intimate partner violence, women's health and social determinants of health. In the last 5 years she has been principal investigator of 8 projects with total funding of \$357,480 and co-investigator of another 12.

Assistant Professor Suzanne Jackson

Dr Jackson's research interests are health promotion planning and evaluation; indicators of community capacity, realist evaluation; participatory action research, participatory evaluation processes; qualitative research; economic evaluation in health promotion; First People's health/circumpolar health promotion; strategic planning and group process and mental health promotion. In the last 5 years she has been principal investigator of 7 projects with total funding of \$1,017,300 and co-investigator of 5.

Associate Professor Scott Leatherdale. Scientist and CCO Research Chair, Department of Population Studies and Surveillance, Cancer Care Ontario.

The focus of Dr Leatherdale's research is understanding the association between environment contexts (both social and physical environments) and cancer risk behaviours; and developing systems to improve the uptake of evidence-based practices in population-based cancer control prevention programming. He aims to develop the infrastructure and systems required to create links between research and practice, to provide stakeholders with the evidence they need, when they need it, in a form that is useful for guiding and evaluating population-level cancer control prevention programs. For the last five years the majority of his research has been focused on the development and implementation of the School Health Action, Planning and Evaluation System (SHAPES). In the last 5 years he has been principal investigator of 2 projects with total funding of \$425,662, co-PI of 6 projects and co-investigator of 13.

Assistant Professor Sally Lindsay Scientist, Bloorview Research Institute

Dr Lindsay's research focuses on the sociology of work, social inclusion and participation, social inequalities, and children/youth with disabilities. She currently leads a project on the experience of exclusion and bullying among disabled youth in addition to assessing anti-bullying interventions and a project exploring the employment experiences of disabled adolescents. In the last 5 years she has been principal investigator of 6 projects with total funding of \$157,590 and co-investigator of another 3.

Assistant Professor Flora I Matheson. Senior Research Associate, Centre for Research on Inner City Health, St. Michael's Hospital

Dr Matheson's research agenda focuses on health inequalities, specifically in relation to gender, substance use disorders/mental illness and the intersection of these fields. Her research is conducted in recognition that males and females experience health in very different ways. Dr. Matheson is actively engaged in research on problem gambling and illicit drug use, substance abuse and re-integration experiences of women offenders, and the relationship between traumatic brain injury, substance abuse and offender institutional/community adjustment. Her position with Correctional Service Canada provides her a venue to present the findings to key policy-makers within the service as these findings will also have implications for primary care delivery for offenders living in Canadian communities. In the last 5 years she has been principal investigator of 6 projects with total funding of \$263,657 and co-investigator of 4.

Associate Professor Peggy McDonough

Dr McDonough's research focuses on the social determinants of health in a comparative perspective. Her work involves charting inequalities in health, especially as they are shaped by socioeconomic position and gender, and exploring the features of social life that give rise to such differences. In the last 5 years she has been principal investigator of 5 projects with total funding of \$1,411,708 and co-investigator of 1.

Assistant Professor Cameron Norman

Dr Norman leads the Youth Voices Research Group (YVRG), which currently focuses on research related to eHealth, public engagement, and social networks for health. The YVRG has led a series of projects looking at a variety of issues including: food systems and health, youth access to cigarettes and smoking cessation, the social impact of youth transitions into adulthood, health literacy and social media use for health promotion and tobacco control. The group is currently engaged in a two-year initiative engaging youth and young adults as navigators within the health system. In the last 5 years he has been principal investigator of 12 projects with total funding of \$821,622 and co-investigator of 2.

Associate Professor Blake Poland

The two primary substantive foci of Dr Poland's research are: community development as an arena of practice for health professionals and the settings approach to health promotion and the social context of health promotion practice. He continues to do some work in tobacco control, but increasingly his focus is shifting to environmental health justice and community resilience, which complements a longstanding interest in the health of marginalized groups. He also publishes on issues of theory and method in qualitative health research. In the last 5 years he has been principal investigator of 6 projects with total funding of \$159,970 and co-investigator of 17.

Assistant Professor Heather Scott-Marshall. Researcher, Institute for Work and Health.

Dr. Scott-Marshall's research is focused on investigating the social (primarily workplace) determinants of health using large population-level health surveys and investigates the health consequences of new forms of work-related insecurity arising from changes to work and workplaces. A key aspect of her work involves evaluating social inequalities in exposures to work-related insecurity according age, gender and race to investigate factors leading to

different health outcomes in these groups. The second major component of her research involves an analysis of the social and economic consequences of work injury, with a particular focus on the impact on income trajectories, marriage and family. This research is undertaken using a linkage of workers' compensation claims data from two provinces with a longitudinal file of Revenue Canada tax records.

Other faculty working in this area

Dr Elizabeth Badley, Dr Gillian Einstein, Dr Amy McPherson, Dr Robert Schwartz

Infectious disease epidemiology and modeling

Seven faculty identified Infectious disease (including HIV/AIDS) as their primary research theme, and 4 as a theme of interest. In the last 5 years 38 projects have been approved with total funding of \$15,555,745, all except \$3,393,350 routed through the School.

Professor Liviana Calzavara. Deputy Director, HIV Social, Behavioral and Epidemiological Studies Unit.

Dr Calzavara conducts research that increases understanding of social, economic, and structural forces that contribute to HIV/AIDS transmission in order to develop more effective intervention and prevention efforts aimed at reducing HIV-related sexual and drug-using risk among vulnerable populations in Canada and internationally. Her research endeavours fall under: Social Determinants of Health and Health-Related Risk Behaviours, Disease and Behavioural Surveillance, Prevalence of Infections (HIV, HCV, STI), Social Epidemiology, Research Design and Methods, International Health, Addictions, Sexual Health, HIV/STI/HCV Prevention and Intervention. In the last 5 years she has been principal investigator of 10 projects with total funding of \$6,332,474 (including one large project with Ted Myers as co-principal investigator) and co-investigator of another 5.

Associate Professor Natasha Sarah Crowcroft. Scientist in Surveillance and Epidemiology in the Ontario Agency for Health Protection and Promotion.

Dr Crowcroft holds her primary academic appointment in the University of Toronto in the Department of Laboratory Medicine and Pathobiology, though by arrangement with that Department, her research funding flows through the DLSPH. Her research comprises evaluation of the public health and epidemiological impact of immunization programs and generation of data for decision making; infectious disease epidemiology; surveillance and public health; vaccine safety; knowledge attitudes and behaviour and immunization. In the last 5 years she has been principal investigator of 10 projects with total funding of \$2,900,876 and co-investigator of another 5, as well as being principal investigator and lead for epidemiology of the European Commission funded Diphtheria Research and Surveillance Network until September 2007 funded to \$2.08 million.

Assistant Professor Shelly Deeks. Associate Director of Surveillance and Epidemiology at the Ontario Agency for Health Protection and Promotion.

Dr Deeks research interests include comprehensive vaccine program evaluation, including both process and outcome evaluations, adverse events following immunization, and outbreak investigations involving vaccine preventable diseases. In the last 5 years she has been co-investigator for 7 projects.

Associate Professor David N Fisman

Dr Fisman's research relates to the development of novel epidemiological tools for the study of infectious diseases, including development of mathematical models of disease that have the potential to be applied in front-line clinical and public health settings. Current substantive areas of interest include: Seasonality of Infectious Diseases and Effects of Climate Change on Infectious Disease Dynamics, Application of Dynamic Modeling Methods to Cost-Effectiveness of Communicable Disease Control and Laboratory-Based Epidemiology of Infectious Diseases

through his work with the Public Health Laboratory, Toronto. In the last 5 years he has been principal investigator of 5 projects with total funding of \$700,894 and co-investigator of another 4.

Professor Ted Myers. Head, Division of Social and Behavioural Health Sciences; Director, HIV Social, Behavioural and Epidemiological Studies Unit.

Dr Myer's research is primarily in the area of HIV/AIDS and co-infections, in particular, hepatitis C and sexually transmitted diseases. It is predominantly community-based, utilizing both survey and biologic methods to determine prevalence and incidence. It is based on the premise that there are multiple epidemics, and therefore attempts to identify minority and marginalized groups where there is greater burden of the disease. His research focuses on a multilevel understanding of behaviour; specifically understanding of the different cultural and social contexts of risk, non-risk behaviours and other health seeking behaviours, and includes the context of relationships and power differentials within relationships. Populations on which he has focused include gay and bisexual men, injection drug users, drug and substance abusers, persons from endemic populations and aboriginals. The work has been undertaken locally, provincially, nationally and internationally including countries in Africa and Asia. In the last 5 years he has been principal investigator of 6 projects with total funding of \$2,619,151 and co-investigator of another 10.

Associate Professor Janet Raboud. Prosserman Center for Health Research, Mount Sinai Hospital.

Dr. Raboud's research focuses on clinical and methodological issues in longitudinal studies of HIV infected individuals. As a biostatistician, she collaborates widely with clinicians, clinical trialists, epidemiologists, immunologists, virologists and other scientists. In the last 5 years she has been principal investigator of 3 projects with total funding of \$393,350 and co-investigator of another 27.

Professor Robert S Remis.

Dr Remis's research focus is on HIV/AIDS and, to a lesser extent, on other sexually transmitted infections (STIs) and hepatitis C. An annual report with detailed analyses on HIV diagnoses, AIDS incidence, mother-to-infant HIV transmission and HIV-related mortality is produced and HIV incidence and prevalence in populations at-risk for HIV infection is measured and modeled. His research studies, include a study of HIV and other STIs among female sex workers in Shanghai, China and a study of the HIV and STI interactions among homosexual men and African-Caribbean populations in the Toronto region. In the last 5 years he has been principal investigator of 4 projects with total funding of \$2,609,000 and co-investigator of another 2.

Other faculty working in this area:

Dr Dionne Gesink, Dr Judy Gould, Dr Prabhat Jha, Dr Margaret Millson

Knowledge Translation and Practice Based Implementation Science

Three faculty identified Knowledge translation as their primary research theme, and 8 more as a theme of interest. In the last 5 years 3 projects have been approved with total funding of \$613,498, none through the School.

Assistant Professor Amparo Casanova. Senior statistician, Canadian Heart Research Centre.

Dr Casanova's research has been focused on: development of qualitative and quantitative methods for evaluating both preventive measures and management of patients at high risk of cardiovascular events (patients with diabetes, dyslipidemia, hypertension or established cardiovascular disease); study of the efficacy and safety of new procedures in the management of patients with acute coronary syndrome in different clinical settings; and evaluation of the effectiveness of knowledge translation programs in the context of diagnosis and therapeutic

management of patients with diabetes, dyslipidemia, established cardiovascular disease, and pulmonary arterial hypertension. In the last 5 years she has been co-investigator of 13 projects.

Assistant Professor Judy Gould. Director of Research and Education
Canadian Working Group on HIV and Rehabilitation.

Dr Gould has been involved in knowledge exchange research within the cancer community, breast cancer research as it pertains to health care inequities and research into the reasons why women delay seeking health care when they have locally advanced breast cancer. More recently she has been engaged in HIV and Aging research as well as arts based research with women who physical disabilities. In the last 5 years she has been principal investigator of 3 projects with total funding of \$613,498 and co-investigator of 4.

Assistant Professor Kevin E Thorpe

Mr Thorpe's research activity is largely clinical trials related. In addition, he has co-authored four systematic reviews. In the last 5 years he has been co-investigator of 12 projects.

Other faculty working in this area:

Dr Elizabeth Badly, Dr France Gagnon, Dr Jennifer Keelan, Dr Patrick Loisel, Dr Robin Mason, Dr Anthony Miller, Dr Steven Narod, Dr Blake Poland

Methodological research in biostatistics, demography and epidemiology

Five faculty identified Methodological research in biostatistics as their primary research theme, and 4 more as a theme of interest. In the last 5 years 11 projects have been approved with total funding of \$551,618.

Assistant Professor Patrick E Brown. Scientist, Cancer Care Ontario.

Dr Brown's research is concerned with developing novel statistical methodology for addressing problems in public health relating to spatial, longitudinal, hierarchical data. This involves spatial point processes, geostatistics, multi-state models, and generalized linear mixed models, with local-EM and MCMC inference methods. Current projects include spatial modelling of area-censored lupus and gonorrhea incidence data, and unobserved events in cancer screening and influenza epidemics. In the last 5 years he has been principal investigator of 4 projects with funding of \$104,000 and co-investigator of 4.

Professor Paul Corey Associate Director, Education, DLSPH.

Dr Corey's research interests are analysis of environmental and occupational studies analysis of nutritional science studies. In the last 5 years he has been co-investigator of 7 projects.

Assistant Professor Annie Dupois. Statistician, the Hospital for Sick Children.

Dr Dupois research interests are in Item Response Theory, Survival Analysis, Multivariate models, Graphical Methods, Simulations, Cystic Fibrosis, Autism, and Learning Disabilities. In the last 5 years she has been co-investigator of 5 projects.

Professor Michael Escobar

Dr Escobar's research involves both statistical research and collaborative research. The main focus of his statistical research is developing computational nonparametric bayesian methods. His work in this area relates to a wide range of disciplines including machine learning, econometrics, genomics, pharmokinetics, and environmetrics. Also, he has been heavily involved in knowledge translation of Bayesian methods by doing a series of one day workshops in Canada. His collaborative research involves applying statistical techniques to a wide range of public health and biomedical research areas. These include work in psychiatry (such as learning disability, schizophrenia, and suicide), epidemiology of head injury, blood supply safety, and behavioural issues associated with HIV. These collaborations involve a large

diversity in study designs and statistical methods. In the last 5 years he has been principal investigator of 3 projects with total funding of \$2,637,000 and co-investigator of another 2.

Professor Wendy Lou. Head, Division of Biostatistics

Dr Lou's research involves the development of statistical methodology for application to various healthcare strategies and interventions, in areas such as genomic sequence analysis, statistical quality monitoring, and sequential analysis of clinical trials. A major underlying component of her research is the determination and the efficient computation of exact probability distributions of complex statistical measures using the method of Finite Markov Chain Imbedding; for many practical applications, she has demonstrated that the use of standard approximations of such distributions can lead to erroneous statistical interpretations of study data. In the last 5 years she has been principal investigator of 7 projects with total funding of \$447,618 and co-investigator of another 13.

Other faculty working in this area

Dr Susan Bondy, Dr Shelly Bull, Dr Janet Raboud, Dr Robert Schwartz

Occupational and Environmental Health

14 faculty identified Occupational and Environmental health as their primary research theme, and 4 more as a theme of interest. In the last 5 years 71 projects have been approved with total funding of \$16,052,088; \$11,067,751 through institutions associated with the School.

Assistant Professor Frederick C Breslin. Scientist, Institute for Work and Health.

Dr Breslin's research interests include social determinants of work injuries among youth, geographic variation in work injuries and the relationship between part-time employment on adolescent health behaviours. In the last 5 years he has been principal investigator of 3 projects with funding of \$237,387 and co-investigator of 5.

Assistant Professor Jeffrey R Brook Research Scientist, Environment Canada

Dr Brook's research focuses on particulate exposures and their effects on health, characterizing human exposures and subsequent assessment of their influence on the development of chronic cardiovascular and respiratory disease. He also studies urban air quality in relation to how traffic and industrial sources contribute to population exposure. In the last 5 years he has been principal investigator of 5 projects with funding of \$4,277,000 and co-investigator of 10.

Assistant Professor Paul Bozek

Dr Bozek's research is on quantitative exposure measurement in worker populations. He has been determining asbestos fibre concentrations that may be released during certain high risk tasks (waste removal, personnel decontamination, teardown) and assessing what work practices and factors affect the fibre release into buildings; studying the use of a Fiber optic sensor for the detection of hidden indoor mould and undertaking a pilot project on Measurement of Accuracy and Precision of Short-Period Air Sampling by Direct-Reading Instruments. In the last 5 years he has been principal investigator of 2 projects with funding of \$102,000 and co-investigator of 1.

Professor J David Cassidy. Senior Scientist, Division of Health Care and Outcomes Research, Toronto Western Research Institute.

Dr Cassidy's research program focuses on injury epidemiology and especially occupational injuries, traffic injuries and musculoskeletal injuries. He is interested in determinates of recovery from these injuries and the effects of insurance policies on recovery as well as rehabilitation and tertiary prevention. In the last 5 years he has been principal investigator of 4 projects with total funding of \$3,402,108, co-principal investigator of 4 and co-investigator of another 10.

Associate Professor Ray Copes Director, Environmental and Occupational health, Ontario Agency for Health protection and Promotion (OAHPP).

Supporting and collaborating with a broad group of government and non-government stakeholders, Dr Copes leads the development and implementation of OAHPP's strategies, policies, services and other initiatives in environmental and occupational health. He also works with the Knowledge Exchange team to ensure that the results of OAHPP's research and other knowledge products are based on best evidence, and are presented in a manner that makes them timely, relevant and accessible to practitioners throughout the province. In the last 5 years he has been principal investigator of 3 projects conducted in British Columbia (where he was before assuming his present position in OAHPP), and co-investigator of another 3.

Assistant Professor Ian Drummond

The overall objective of Dr Drummond's research is to simplify measurement of short-period exposure to chemicals, by using direct-reading instruments, so that it may be routinely and cheaply measured at the same time as a full-shift measurement is made. Improved statistical tools for interpretation of the results are also being developed. In the last 5 years he has been principal investigator of 1 project with funding of \$29,710.

Professor Joan Eakin.

Dr Eakin's research has focused on occupational health and safety including prevention and compensation systems and practices, especially related to small workplaces. Recent projects include a comparative study of the role of doctors in the compensation system in Ontario and Québec, a study of worker compensation systems and the consequences of work injury, a study of underreporting of occupational disease, and a study of front-line service work in a compensation board. During this time Dr Eakin developed and became the founding director of the Centre for Critical Qualitative Health Research, directed to the advancement of research methodology. In the last 5 years she has been principal investigator of 1 project with funding of \$52,691, co-PI of another 2 (funding \$191,000) and co-investigator of 1.

Associate Professor Shelly Harris. Scientist, Population Studies and Surveillance, Cancer Care Ontario.

Dr Harris's research focus is on developing methods to measure and predict occupational and environmental exposures for large-scale epidemiologic studies and developing methods to estimate human exposures to persistent bioaccumulating environmental contaminants (brominated flame retardants) using biological markers and questionnaire-based assessment. She is leading the development of environmental and occupational measures and carcinogen prioritization for the Ontario Health Study. In the last 5 years she has been principal investigator of 4 projects with total funding of \$423,693 and co-investigator of another 5.

Assistant Professor Sheilah Hogg-Johnson. Senior Scientist and Manager of Data and Information Systems, Institute for Work and Health.

Dr Hogg-Johnson's research has predominantly focused on the primary and secondary prevention of work disability, including interventions targeted at workplaces with poor health and safety records, and the measurement of outcomes and identifying prognostic factors for poor outcomes. In the last 5 years she has been principal investigator of 5 projects with total funding of \$445,729, and co-investigator of another 32.

Professor D Linn Holness. Head of the Division of Occupational and Environmental Health, DLSPH. Director, Centre for Research Expertise in Occupational Disease, St Michael's Hospital. Dr Holness's research has focused on occupational health, both specific diseases and also system issues. Her main area of disease focus is occupation induced skin and lung disease, the possible interactions between the skin and lung as routes of exposure and response and also prevention of occupational skin and lung disease. She is also involved in a number of projects examining broader occupational health and safety system issues such as the role of health care providers, joint health and safety committees and health and safety programs within

organizations. In the last 5 years she has been principal investigator of 9 projects with total funding of \$619,292, co-principal investigator of 3 and co-investigator of another 8.

Assistant Professor Ron House

Dr House's research has included the under-recognition and under-reporting of occupational disease and the utility of surveillance for the health effects due to various workplace exposures but is increasingly focused on Hand-Arm Vibration Syndrome (HAVS). His research on HAVS has dealt with the evaluation of diagnostic tests for the vascular and neurological components of HAVS, the evaluation of disability and quality of life in workers with HAVS and evaluation of educational tools for HAVS. In the last 5 years he has been principal investigator of 5 projects with total funding of \$402,476, and co-investigator of 4.

Assistant Professor Gary M Liss

Dr Liss's research has focused on occupational lung disease, primarily occupational/ work-related asthma but also beryllium and lung cancer. He was a member of an international panel that developed Evidence-based Guidelines for the Diagnosis and Management of work-related asthma. Additional investigations include work-related respiratory disease; skin and respiratory problems among professional cleaners; symptoms associated with mould exposure; and a review of claims allowed by the WSIB over a 5-year period for work-related asthma. He has also been involved in a study of impairment and disability among workers compensated for Vibration White Finger, and an exploration of whether there are cases of sarcoidosis in Ontario which represent unrecognized beryllium disease. In the last 5 years he has been principal investigator of 3 projects with funding of \$301,949, co-PI of 4 and co-investigator of another 7.

Professor Patrick Loisel. Senior Scientist, Division of Orthopedics, University Health Network
Dr Loisel's research focuses on the development and evaluation of models and tools to prevent work disability situations for those with musculoskeletal problems. He is also involved in knowledge transfer for their application and use in the community. In the last 5 years he has been principal investigator of 7 projects with total funding of \$319,460, and co-investigator of 9.

Associate Professor James Scott

Dr Scott's research has primarily been concerned with the recognition, evaluation and control of microbial hazards in occupational and environmental settings. Much of his current research investigates methods of assessing microbial populations, and the roles of microbes in the etiology of chronic, immune-mediated diseases such as asthma, both through environmental exposures and exposures via the human microbiome. His research projects involve bacteria, fungi and viruses. In the last 5 years he has been principal investigator of 7 projects with total funding of \$3,393,370, and co-investigator of 10.

Associate Professor Frances Silverman. Gage Occupational and Environmental Health Unit.
Dr Silverman's research interests focus on cardio-respiratory effects of inhaled irritants and airborne environmental contaminants including gases (ozone) ambient particulate matter (coarse, fine and ultrafine particulate matter (PM)) using a controlled human ambient PM exposure facility. The current facility was established in collaboration with Harvard School of Public Health and is the only one of its kind in Canada. She is currently investigating the evidence for the association between air pollution and acute cardiorespiratory mortality and morbidity observed in epidemiological and toxicological studies. In the last 5 years she has been principal investigator of 10 projects with total funding of \$2,462,593 and co-investigator of another 18.

Assistant Professor Ivan Steenstra. Associate scientist, Institute for Work & Health. Dr Steenstra's research interests focus on return to work and musculoskeletal pain, with an emphasis on determining prognosis and tailoring interventions to achieve a fast and safe return

to work. In the last 5 years he has been principal investigator of 5 projects with funding of \$140,053, and co-investigator of 15.

Assistant Professor Emile Tompa. Scientist, Institute for Work and Health.

Dr. Tompa's research has focused on the consequences of disability compensation system design features and other labour market policies and programs for the health of individuals and populations. His research program also includes the study of labour market experiences and their health and human development consequences, with a particular focus on precarious employment. Dr. Tompa's third area of research is on workplace interventions directed at improving the health and well-being of workers, specifically the economic evaluation of such interventions. In the last 5 years he has been principal investigator of 9 projects with total funding of \$1,814,321, and co-investigator of another 12.

Other faculty working in this area:

Dr Donald Cole, Dr Loraine Marrett, Dr Heather Scott-Marshall, Dr Teresa To

Public Health Policy

Four faculty identified Public Health Policy as their primary research theme, and 4 more as a theme of interest. In the last 5 years 19 projects have been approved with total funding of \$4,001,400, nearly all through institutions associated with the School.

Associate Professor Joanna Cohen. Director of Research and Training, Ontario Tobacco Research Unit.

Dr Cohen's research explores factors affecting the adoption and implementation of public health policies, and evaluates the beneficial effects and unintended consequences of such policies. She has been evaluating Ontario's ban on the display of tobacco products in stores using an innovating cohort design; evaluating a range of other tobacco control policies including the ban of "light" and "mild" descriptors on cigarette packages, changes in cigarette prices, and smoke-free places; exploring changes in smoking behaviours over time and the influences on these changes; describing gambling promotions at the point-of-sale; analyzing the body of tobacco research currently and over time, with implications regarding areas that are greatly underrepresented; building research capacity for public health policy and research through a six-year CIHR Strategic Training Initiative in Health Research grant. In the last 5 years she has been principal investigator of 2 projects with total funding of \$2,239,570 and co-investigator of another 7.

Assistant Professor Pamela Kaufman Scientist, Ontario Tobacco Research Unit

Dr. Kaufman's research addresses physical and social environment factors that affect the development and implementation of public health policies, and the beneficial effects and unintended consequences of such policies. Her most recent studies include understanding smoking behaviour and secondhand smoke exposure in outdoor public places. Dr. Kaufman primarily uses qualitative methods (focus groups and face-to-face interviews), direct observations and self employed photography, and has recently used aerosol science techniques to investigate levels of particulate matter (PM_{2.5}) as a proxy for second hand smoke. In the last 5 years she has been principal investigator of 2 projects with total funding of \$230,081 and co-investigator of another 5.

Assistant Professor Jennifer Keelan

Dr Keelan has a range of research interests related to Canadian public policy processes, citizen engagement, and the role of scientific experts in public health policy making. Recent research projects explore the intricacies of federal/territorial and provincial intergovernmental relations and their impact on health policy nationwide, as well as public understanding of science and health policy & law: No-fault compensation schemes and Patient Safety. In the last

5 years she has been principal investigator of 2 projects with total funding of \$33,556 and co-investigator of another 5.

Associate Professor Robert Schwartz. Director of Evaluation and Monitoring, Ontario Tobacco Research Unit.

Dr Schwartz's research focuses on creating and synthesizing evidence to inform tobacco control policies (health insurance coverage, cigarette package design, Evidence Informed Tobacco Control Policy and Programming for Regional Public Health Authorities, anti-contraband measures). A second thrust of his work is in evaluation, surveillance, monitoring, and performance measurement. Some of his work also studies and seeks to improve the practice of evaluation and monitoring work (volume on evaluating complex strategies, knowledge synthesis on performance measurement, and volume on tobacco control evaluation). Several studies focus on accountability policies and mechanisms for public health. The large public health policy training grant also has a research development component under which he has initiated a group that is starting to study public health systems. In the last 5 years he has been principal investigator of 15 projects with total funding of \$1,531,749, co-PI with J Cohen of the large public health policy training grant and co-investigator of another 7 projects.

Other faculty working in this area:

Dr Elizabeth Badley, Dr Susan Bondy, Dr Ilene Hyman, Dr Jurgen Rehm.

Women's Health

Four faculty identified Women's health as their primary research theme, and 5 more as a theme of interest. In the last 5 years 13 projects have been approved with total funding of \$1,789,030, \$1,369,230 routed through institutions associated with the school.

Associate Professor Gillian Einstein

Dr Einstein is developing a research program in Cognitive Neuroscience and Women's Health. One project involves qualitative, quantitative, and physiological research into the neurobiological consequences of Female Genital Circumcision/Mutilation/Cutting (FGC). Another is a neuropsychological assessment of the changes in memory and attention in women who carry the BRCA1/2 mutations, a third is a community-based study of healthy women to understand the correlation of mood with menstrual cycle and to explore sex differences in threshold to touch and how threshold to touch might change in women depending on the phase of their menstrual cycle. In the last 4 years (since appointment to the DLSPH) she has been principal investigator of 5 projects with total funding of \$119,800.

Professor Lorraine Ferris. Associate Vice Provost (Relations with Health Care Institutions)

Dr Ferris studies abortion services comprising a statistical/epidemiological profile on access and use of abortion services as well as primary data collection from hospitals about service provision. She also evaluates research evidence on women's health in Ontario and integrity in clinical research in Canada. In the last 5 years she has been principal investigator of 1 project with funding of \$300,000 and co-investigator of 2.

Associate Professor Janice Du Mont Research Scientist, Womens College Research Institute.

Dr Du Mont conducts research in the area of violence to women, specifically a pilot project on whole body experiences of female genital cutting, evaluating hospital-based sexual assault and domestic violence services from the perspectives of clients and responding to victims/survivors of drug facilitated sexual assault: protocol development and evaluation on sexual assault and domestic violence treatment centres. In the last 5 years she has been principal investigator of 1 project with funding of \$150,830 and co-investigator of 3.

Assistant Professor Robin Mason Research Scientist, Centre for Research in Women's Health.

Dr Mason conducts research on the topic of violence against women, including intimate partner violence, the effects of past trauma on women, the development and evaluation of curricula for health care providers, and the intersection of intimate partner violence, substance use and mental health problems. In the last 5 years she has been principal investigator of 6 projects with total funding of \$1,218,400 and co-investigator of 2.

Other faculty working in this area:

Dr Farah Ahmad, Dr Elizabeth Badley, Dr Anna Chiarelli, Dr Ilene Hyman, Dr Steven Narod