

Memorandum

To: Members of the Committee on Academic Policy and Programs

From: Carolyn Tuohy

Date: January 9, 2002

Item Identification

School of Graduate Studies: Proposal for the establishment of a course-work only option in the Biostatistics field of the M.Sc. program in Public Health Sciences

Sponsor

Carolyn Tuohy

Jurisdictional Information

The Committee approves major program and curriculum changes.

Highlights

The proposal is to establish a course-work only option as an alternative to the existing thesis option within the program.

Action Sought

Approval of the following motion:

THAT the proposal for the establishment of a course-work only option in the Biostatistics field of the M.Sc. program in Public Health Sciences, as described in the submission from the School of Graduate Studies of November 23, 2001, be approved, effective immediately.

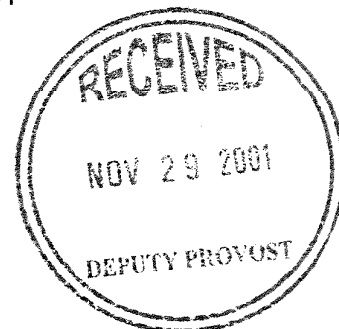


School of Graduate Studies

University of Toronto

November 23, 2001

Professor Carolyn Tuohy
Vice President Policy Development
and Associate Provost
Room 206, Simcoe Hall
27 King's College Circle
University of Toronto



Dear Professor Tuohy,

At its meeting of November 20, 2001, the Council of the School of Graduate Studies approved the following motion:

THAT SGS Council approve the proposal for a Coursework-only Option in the Biostatistics field of the M.Sc. program in Public Health Sciences, effective immediately.

The motion sheet and supporting documentation are attached.

With Governing Council approval of this motion, the Biostatistics field will offer both a thesis and a coursework only option within the Public Health Sciences, M.Sc. program. The current thesis requirement in the Biostatistics field imposes higher entrance standards on our own graduates entering the Ph.D. program than graduates from other universities, where coursework only Master's programs are standard. The coursework only option proposal will address that inequity and put our own graduates on an equal footing with those of other universities.

On behalf of the Council of the School of Graduate Studies, I am presenting this item to you for Governing Council committees' approval, as appropriate.

Yours sincerely,

Jane Alderdice
Secretary to SGS Council
And Coordinator of Policy, Program and Liaison

Enc.
c.c.

U. de Boni
C. Johnston
M. Marrus

R. Branch
J. Lalonde
H. Skinner

P. Corey
M. Lynham
L. Yee

smr/H:Council/FollowUp/2001-2002Nov 20/Biostatistics coursework only MSc PHS.doc

Motion

School of Graduate Studies Council Tuesday, November 20, 2001

Item 7.

MOTION (/) **THAT** SGS Council approve the proposal for a Coursework-only Option in the Biostatistics field of the M.Sc. program in Public Health Sciences, effective immediately.

NOTE:

This proposal was approved by the Division IV Executive Committee at its meeting of November 6, 2001.

With SGS Council's approval this item will go to Governing Council for approval and to the Ontario Council on Graduate Studies for information.

Students currently in the thesis Master's program may elect to take the coursework only program, with the approval of the Department.

See proposal attached

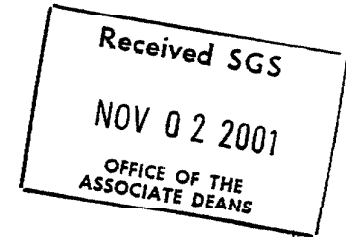


Department of

Public Health Sciences

FACULTY OF MEDICINE
UNIVERSITY OF TORONTO12 Queen's Park Cres. West,
Toronto, Ontario
Canada, M5S 1A8

Friday, November 2, 2001

Dr. Umberto de Boni
Associate Deaen, Division IV
School of Graduate Studies

Dear Umberto:

I have included our proposal for a coursework only option in the biostatistics stream in the master's program within the Graduate Department of Public Health Sciences. It has gone through several iterations and has benefited from the input of all faculty within the biostatistics stream as well as suggestions made by you and Jane Alderdice.

This has been presented as information at several meetings of the curriculum committee where advice was also sought.

This option will greatly strengthen both the MSc and PhD programs within the whole department and make us competitive in recruiting the best students from around the world.

Sincerely,

Paul N Corey PhD
Associate ChairWebsite:
<http://www.utoronto.ca/phs/>Tel: 416/978-2040
Fax: 416/978-8299/2087

Health - Within Reach Of Everyone

Proposal for a Coursework-only Option in the MSc in Public Health Sciences Biostatistics Program

Biostatistics is a highly specialized discipline which applies statistical theory and methods to complex biological datasets. Opportunities for its application are continuously expanding: from basic health utilization trends, clinical trials and epidemiologic analysis, to the even more complex fields of epidemic modeling, medical imaging and genetic statistics. Graduates from other programs in Statistics and Mathematics have a similar theoretical background, but often lack the applied training necessary to work in the field. Hence there is a need in the field for well-trained Biostatisticians, both to provide high level support in a range of health science research disciplines and also to develop new methods of data analysis.

Graduate depts at U of T vary in their requirements at the Masters level. In division 4 of SGS, many departments, including P.. H.. S (PHS) require a thesis in addition to a number of courses. . The mandatory masters thesis puts us at a disadvantage in the recruitment of excellent students relative to statistics programs in other universities, as well as, to the statistics program in the Department of Statistics at U of T. (See Appendix 1)

The MSc/PhD Biostatistics program in the department of Public Health Sciences at U of T is the largest of its kind in Canada and receives applications from all over the world. The applicants to the biostats program differ from those in the other PHS specialties in that they have strong related undergraduate training in Mathematics and Statistics. Applicants to other PHS programs such as epidemiology, for example, have no formal background in epidemiology to build upon. In addition the Biostatistics program is the only one within PHS that admits students into its PhD program with a course – only masters. Yet our present MSc students in Biostatistics are required, to write and defend a thesis, which imposes higher entrance standards for the PhD on our own graduates .

In order to meet the needs of the field and to put our own graduates on an equal footing with graduates from other universities, we propose to redesign our MSc program to offer both a thesis and course work only option. The same high level of academic excellence is required for admission to either option. The choice of coursework-only or coursework plus thesis will depend both on the applicant's previous experience and proposed future direction. Graduates from both options will be eligible for the PhD program

The specialized nature of the MSc thesis offers no advantage to those students who intend to go initially into the workforce because their roles in research and industrial settings tend to be consultative and collaborative. In addition the coursework only MSc program would benefit those students planning to go immediately into a PhD program because they will be able to define their PhD thesis topic more quickly, since they will have completed most of the advanced level courses in the MSc program.

Over the last two years there has been an increase in our capacity to supervise PhD students in the Biostatistics program. The core tenure stream faculty has increased from 4 to 7. In addition the program continues to have significant support from colleagues cross appointed from the Department of Statistics and colleagues from various research institutions within the Faculty of Medicine who hold status only appointments within our department.

Our students are in high demand while still in the program; and, our graduates quickly assume positions of excellence within academic, research and corporate institutions. This proposal for a course-work only option will have a positive effect on our growing PhD program by allowing the focus of supervised research to be maintained at the level of world class research

The proposed MSc options are outlined in the table below: These CHL courses are open to any student with the proper preparation.

PROPOSED MSc PROGRAM IN BIOSTATISTICS

Non-thesis Stream	Thesis Stream
10 half courses (5 FCE) <ul style="list-style-type: none"> • No thesis • 9 - 12 months 	6 half courses (3.0 FCE) plus <ul style="list-style-type: none"> • thesis • 18 to 24 months
Required courses (3.5 FCE): <ul style="list-style-type: none"> • CHL 5406H Prospective Studies and Survival Analysis • CHL 5407H Categorical Data Analysis • STA 2209H Lifetime Date Modelling and Analysis • STA2112H Mathematical Statistics 1 • STA2112H Mathematical Statistics 2 • CHL5207Y Laboratory in Statistics Design and Analysis: Research Project (note 1FCE) 	Required courses (3.0 FCE): <ul style="list-style-type: none"> • CHL 5406H Prospective Studies and Survival Analysis • CHL 5407H Categorical Data Analysis • STA 2209H Lifetime Date Modelling and Analysis • STA2112H Mathematical Statistics 1 • STA2112H Mathematical Statistics 2 • CHL5207H Laboratory in Statistics Design and Analysis: Research Project (note .5 FCE)
Optional Courses (1.5 FCE) <ul style="list-style-type: none"> • CHL5202H Introductory Biostatistics 2 • CHL5203H Survey Methods in Health Sciences 1 • CHL5204H Survey Methods in Health Sciences 2 • CHL5223H Applied Bayesian Analysis • CHL5401H Epidemiologic Methods 1 • CHL5402H Epidemiologic Methods 2 • CHI XXXXH Statistical Genetics • CHL5222H Longitudinal Data Analysis • CHL5209H Survival Analysis 1 • CHL5206H Demography and Vital Statistics • STA2101H Methods of Applied Statistics • Other courses approved by the Program Director 	As a rule there will no optional courses. There will be exceptions. In some situations the student in discussion with the Program Director will be allowed to replace some of the courses in the required list or given exemption based on their previous academic experience.

Coursework-only option: We anticipate that most students will choose the course intensive Masters program . Those who plan to enter the work force immediately upon completion of the MSc will have learned more theory and methodology making them more immediately employable by research agencies, hospitals and the corporate sector. The inclusion of a full year course (CHL5207) will give them plenty of experience in analyzing "real-life data sets". These students when entering the PhD will likely have a lower course load and will be able to focus on their dissertation sooner.

Thesis Option: The thesis option will likely be more attractive to mature students who already hold positions as biostatisticians within research agencies, hospitals or pharmaceutical companies. Because of their work experience they will be more able to immediately identify a thesis topic of significant value to their own applied research. Thesis students will not be at a disadvantage with fewer courses since they likely will have gained statistical knowledge from their employment experience in addition to accumulating many academics credits from this and other universities.

Appendix 1

The following table compares our proposal to that offered by six graduate departments in Statistics at other universities that offer the option of a thesis free MSc degree. Comparison with these Departments of Statistics is appropriate because a large proportion of their MSc graduates take a program of courses very similar to what our students take. Other universities such as Western Ontario and McMaster that have departments of Epidemiology and Biostatistics graduate such a small number of students that any comparison with our program inappropriate. Our competition comes from some of the other universities on the list.

Institution	MSc Requirements		
1. Biostatistics U of T	10 half courses	or	6 half courses + thesis
2. Mathematics U of T	6 half courses + project	or	4 half courses + thesis
3. Statistics U of T	8 half courses	or	-----
4. U of British Columbia	10 half courses	or	8 half courses + thesis
5. U of Western Ontario	8 half courses	or	4 half courses + thesis
6. Queen's university	7 half courses + project	or	4 half courses + thesis
7. U of Waterloo	8 half courses	or	4 half courses + thesis
8. U of Guelph	6 half courses + project	or	4 half courses + thesis
9. York University	8 half courses	or	4 half courses + thesis

Our proposal is somewhat more course heavy relative to other departments except for the University of British Columbia. However our experience has convinced us that this schedule of courses offered by our program has given our students an excellent preparation to perform duties as an applied statistician or to go on to do work at the PhD level.