

PRACTICUM GUIDE

Collaborative MSc Program in Biostatistics

Introduction

The objective of the Collaborative MSc Program in Biostatistics is to provide students with a unique opportunity to develop the analytic skills and practical experience needed to interact with practitioners and to work on current research projects in a variety of health areas. This objective is achieved through coursework and a practicum. After the student has successfully completed the required courses (six core courses and two elective courses), he/she will start the four-month practicum placement.

Objectives of the Practicum

The objectives of the practicum are to give students the opportunity (i) to develop the analytical, technical and interpersonal skills required for a biostatistician to work effectively in the multi-disciplinary health research environments, and (ii) to apply the biostatistics research and analytic skills that they have learned in coursework to multi-disciplinary projects within health research groups in universities, hospitals, government agencies, industries and other related settings. Through the practicum placements, the experience that students gain in consulting, communication, report writing and teamwork will allow them to develop their consulting expertise.

Forms of Practicum

There are two forms of practicum:

- (1) Application Practicum – Practicum activities will vary according to student interest and the nature of available projects. In many situations, suitable practica will include opportunities for data management, statistical programming, statistical analysis, attending group meetings, report writing, and presentation of results.
- (2) Methodology Practicum – Practicum activities will pertain to some aspect of biostatistics methodological research affiliated with the work of the supervisor, a core faculty member in a biostatistics area.

Practicum Arrangement

Four months prior to the start of the practicum (December), students should discuss with their academic supervisors how they will complete the practicum requirement for their degree. For students choosing to complete an application practicum, this will include discussion on possible placements. It is the responsibility of the supervisor to provide possible placements for their students.

Students choosing to do a methodology practicum will complete the practicum-proposal form (Appendix I) with their supervisor documenting the objectives of the practicum, planned activities, possible biostatistical methodology developed through practicum, and potential contribution of the students in the placement.

Students choosing to do an application practicum, will first need to decide in consultation with their academic supervisor where (practicum site) they will do their practicum. Once this has been decided, the student will set up a meeting with both their on-site supervisor and academic supervisor to discuss their practicum project and to complete the practicum proposal form (Appendix I) documenting the objectives of the practicum, planned activities, the skills and competencies expected to acquire through practicum, and potential contribution of the students in the placement.

One month before the practicum starts, the completed practicum proposal form (Appendix I) should be submitted to the program committee of the Collaborative MSc Program in Biostatistics for final approval and signatures.

Roles of Students and Supervisors in Practicum

Role of student undertaking a methodology practicum:

- Identify main practicum objectives.
- Meet with their academic supervisor to clarify objective, actual research questions and possible methodology development.
- Clarify the student contribution in the practicum.
- Complete and submit the practicum proposal form (Appendix I)
- Meet with their supervisor at least once a month to discuss progress.
- Complete and submit the practicum presentation scheduling form (Appendix III)
- Write the practicum report and present to the Practicum Examination Committee.
- Provide feedback on the practicum experience.

Role of student undertaking an application practicum:

- Identify main practicum objectives.
- Meet with the academic and on-site supervisors to clarify objectives, actual work and anticipated results.
- Complete and submit the practicum proposal form (Appendix I)
- Meet with their academic supervisor at least once a month to discuss progress.
- Complete the tasks assigned by the on-site supervisor on time.
- Be responsible for his/her own transportation and living costs.
- Follow the regulations and guidelines set by the practicum site.
- Integrate into the project team.
- Complete and submit the practicum presentation scheduling form (Appendix III)
- Write the practicum report and present it to the Practicum Examination Committee.
- Provide feedback on practicum experience.

Role of supervisor (academic):

The supervisor will play an important role in the intellectual development and educational development of the students. The supervisor will act as mentor and assist students in developing a plan of study to meet their academic objectives. This may include:

- Coursework planning.
- Practicum arrangement.
- Meeting with students regularly to monitor their progress.
- Communicating with on-site supervisor to deal with issues arising during the practicum placement.
- Provide an overall assessment of the students' performance in practicum.

- Give advice to students on practicum report writing.
- Arrange practicum report presentation for the student and structure the Practicum Examination Committee to evaluate the report and oral presentation of the practicum (Appendix IV)
- Identify/resolve issues or problems arising in the student's intellectual and education development.

Role of practicum (on-site) supervisor:

- Meet with student and academic supervisor to consolidate the practicum objectives for the student.
- Orient the student on site and make the student feel comfortable with people working at the site.
- Evaluate the student's progress according to the practicum objectives on a regular basis and report any concerns to the academic supervisor (See Appendix III, Evaluation of student performance at off-campus practicum)
- Report the student's progress to the academic supervisor
- Provide an overall assessment of the students' performance in practicum,

Practicum Report

The students will write a practicum report after they complete their placement.

In case of students undertaking an application practicum, the report may consist of:

- Background of the project involved
- Site organization relevant to student placement
- Objectives of practicum
- Review of the application of biostatistics principles used in placement
- Biostatistics practices performed
- Resources utilized
- Student role in the organization
- Other related activities undertaken
- Obstacles encountered
- Outcomes achieved
- Recommendations for future activities at the site
- Impact of student's participation in the project

For students undertaking methodology practicum, the practicum report may include:

- Objectives of practicum
- Literature review
- Statistical modeling and simulations
- Innovative applications of statistical models to health data.
- Student's contribution

The practicum report should demonstrate a satisfactory general mastery of statistical knowledge and capability of problem solving. The final practicum report should be submitted through the academic supervisor to the Examination Committee before the end of August. Examples of past practicum reports can be found on the program website at:

<https://phs.queensu.ca/graduate-programs/msc-biostatistics/student-profiles>

Practicum Evaluation

In order to evaluate the Practicum and the resulting report, the student will present the report to a review committee consisting of the following faculty members: the supervisor(s) and two review members, one doubling as chair. At least one of the two review members must be a biostatistics faculty member.

The exam is to be approximately one hour, the first 20 minutes of which will be devoted to an oral presentation by the student. The balance of time will be devoted to questioning. Based on the overall assessment of the placement provided by the on-site supervisor or the academic supervisor, the final practicum report, and the performance of the presentation, students will be evaluated on a pass/fail basis (Appendix IV).

When the student is ready to present, he/she must submit a completed Practicum Presentation Scheduling Form (Appendix III) to the Departmental Graduate Assistant (a minimum of **four weeks** prior to the proposed presentation dates) to allow time for scheduling of the review committee.

Supervisors will make suggestions on possible internal and external examiners. The Program Director will review the list and the Graduate Assistant will contact potential examiners to determine their availability.

Students are also responsible for distributing thesis copies to the review committee (one for each supervisor, one for each reviewer, and an electronic copy to the Graduate Assistant).

Prior to the presentation, the Graduate Assistant will fill out a Master's Oral Program Completion Form with the details of the student's coursework and review committee, and give it to the reviewer/chair. After the presentation and questioning, the form is signed by the supervisors and reviewers and returned to the Graduate Assistant, who forwards it to the School of Graduate Studies.

Timeline for Practicum

December	January	February	March	April	May	June	July	August
<u>Topic</u>	<u>Practicum proposal</u>		<u>Approval</u>		<u>Start practicum</u>		<u>Finish Report Present</u>	

Throughout the practicum, students are advised to set aside one day a week to prepare their practicum report and presentation. In August, students are expected to spend most of their time focusing on report writing and presentation.

Appendix I

**QUEEN'S UNIVERSITY
DEPARTMENT OF PUBLIC HEALTH SCIENCES
DEPARTMENT OF MATHEMATICS & STATISTICS**

Collaborative MSc Program in Biostatistics

Practicum Proposal Form – Submit to epid@queensu.ca by March 31st

Student's name: _____ **Supervisor's name:** _____

Practicum site (please specify, name, address and web site) – *(only for application practicum)*

Practicum Supervisor (please specify name, address and email) – *(only for application practicum)*

Dates of placement – from: _____ to: _____

Time commitment: _____ hours per week

Practica are normally full-time (35 hours per week) for 18 weeks (e.g. May 1 to August 31)

Main objectives of the project and background:

Main activities that the student will perform

Signatures:

Date: _____

Student: _____

On-site supervisor: _____
(for application practicum)

Supervisor: _____

Program director: _____

Appendix II

QUEEN'S UNIVERSITY
DEPARTMENT OF PUBLIC HEALTH SCIENCES
DEPARTMENT OF MATHEMATICS & STATISTICS

Collaborative MSc Program in Biostatistics

Evaluation of student performance at off-campus practicum form

Student's name: _____ Date: _____

Academic supervisor's name: _____

Practicum supervisor's name: _____

Please choose date of evaluation:

- 1st Assessment (~May 30)
- 2nd Assessment (~June 30)
- 3rd Assessment (~July 31)

Student's performance so far is:

- meeting expectation
- below expectation

If the performance is below expectation, please provide details:

	Detailed Comments
Critical thinking	
Teamwork ability	
Responsibility	
Initiative	
Discipline	
Other	

Completed by: _____ Date: _____

Appendix III

**DEPARTMENT OF PUBLIC HEALTH SCIENCES
PHS – Practicum Presentation Scheduling Form**

Student Name	
Report Title	
Student Number	
Supervisors	
Report Submission Date	
Date (Suggestion #1):	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Date (Suggestion #2):	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Date (Suggestion #3):	<input type="checkbox"/> a.m. <input type="checkbox"/> p.m.
Examiner (Suggestion #1):	
Examiner (Suggestion #2):	
Examiner (Suggestion #3):	
Examiner/Chair (Suggestion #1):	
Examiner/Chair (Suggestion #2):	
Examiner/Chair (Suggestion #3):	

Primary Supervisor Signature _____

Student Signature _____

Program Director Signature _____

Appendix IV

QUEEN'S UNIVERSITY
Department of Public Health Sciences
Department of Mathematics and Statistics
Collaborative MSc. in biostatistics

PRACTICUM REPORT

Date:
Presented by:
Supervisors:

Chair:
Members of Evaluation Committee:
Other Faculty Members present:

This is to confirm that the topic:

a. has been approved as presented.

c. has not been approved.

(Signature of Chair)

cc Candidate/Supervisors/SGS