Master of Science Specializing in Biostatistics

Department of Public Health Sciences

Student Handbook

This handbook provides information on the Master of Science Specializing in Biostatistics program at Queen’s University. This document covers information surrounding program structures, course offerings, faculty information, and general university-wide material and resources.

If you require any further information, please feel free to contact epid@queensu.ca or 613-533-2901
The collaborative Master of Science program, specializing in biostatistics is a 12-month program. It is intended to meet the growing national and international demand for qualified Master’s level biostatisticians in academia and industry, and in epidemiologic and health services research. Graduates of this program will be capable of working as biostatistical data analysts within multi-disciplinary health research teams.

This objective will be achieved through coursework that equips students with a sound knowledge of observational and experimental study designs, statistical theory, statistical models for analyzing health data, and statistical computing. A four-month practicum provides students an opportunity to apply their knowledge and obtain consulting expertise within an academic or industrial health setting.

The Department of Public Health Sciences and Department of Mathematics and Statistics jointly offer the collaborative MSc program with a biostatistics specialization. The two departments offer strong graduate programs that include a broad range of courses in statistics, biostatistics, epidemiology, and health-service research. By combining these resources, students in the collaborative program will have unique opportunities to develop the analytical skills and practical experience needed to interact with practitioners and to work on current research projects in a variety of health areas.

This handbook provides basic information for both current and future students about the program. If you have any questions or require further information, please feel free to contact me, or the graduate assistant, as we will be happy to assist you.

Sincerely,

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Departmental Overview

The Department of Public Health Sciences (known prior to 2013 as the Department of Community Health and Epidemiology) was established in 1968 to study the incidence of diseases in Canadian communities and to find ways to help reduce public-health risk. Since then, the fields of community health and epidemiology have broadened considerably; department members conduct research and teach in areas as diverse as health policy, program evaluation, and biostatistics. The department is currently chaired by Dr. William Pickett and is within the School of Medicine in the Faculty of Health Sciences.

The mission of the Department is to advance scientific knowledge relevant to research in epidemiology, public health and biostatistics, and to participate in the dissemination and application of scientific knowledge to the solution of health, health care, and health system issues. To achieve this mission, the Department contributes to undergraduate medical and life sciences education in epidemiology and biostatistics, and offers thesis-based Master and PhD degree programs in epidemiology, a practicum-based Master of Public Health, and a collaborative Master of Science program specializing in biostatistics. The goal of the graduate education programs is to provide students with educational opportunities needed to acquire the knowledge, attitudes, and methodological skills necessary to participate in or lead applied or academic research in health services or epidemiology within the context of multi-disciplinary research teams.

Master of Science Specializing in Biostatistics

Organization and Structure

The Department of Public Health Sciences and the Department of Mathematics and Statistics jointly offer the collaborative MSc program with a biostatistics specialization along with a broad range of courses in statistics, biostatistics, epidemiology, health-services research, and strong MSc programs in epidemiology and statistics (home programs) in the two departments. The MSc Specializing in Biostatistics is a 12-month, non-thesis based program that requires students to complete eight term-courses (six mandatory courses and two electives) and a practicum. The practicum involve a four-month placement working on a project pertaining to some aspect of biostatistics applications or methodological research affiliated with the work of the supervisor.

With combined resources in the two departments, students in the collaborative program have unique opportunities to develop the biostatistical skills and practical experience needed to interact with practitioners and to work on research projects in a variety of health areas.

Supervisors and Fields of Study

Biostatistics students will be registered in their home program with a pre-determined supervisor or supervisors. At least one of the supervisors will be biostatistics faculty member in their home program. The current list of biostatistics faculty members in the two departments is as follows:
Faculty from the Department of Public Health Sciences

- **Dr. Bingshu Chen**  
  Associate Professor, NCIC Clinical Trials Group, Queen’s Cancer Research Institute  
  *Research Interests*: Survival analysis; design and analysis of clinical trials; epidemiology

- **Dr. Keyue Ding**  
  Associate Professor, NCIC Clinical Trials Group, Queen’s Cancer Research Institute  
  *Research Interests*: Design and analysis of clinical trials; sequential analysis; statistical quality control procedures; change-point detection and estimation; statistical computing.

- **Dr. Michael McIsaac**  
  Assistant Professor, Carruthers Hall, Queen’s University Master of Science Specializing in Biostatistics Program Director.  
  *Research Interests*: Development and application of statistical methods for public health: two-phase study designs and methods for analysis of incomplete data; design and analysis of epidemiological studies of rheumatology and vasculitis.

- **Dr. Paul Peng**  
  Professor, Cancer Care & Epidemiology, Queen’s Cancer Research Institute  
  *Research Interests*: Survival analysis; statistical methods for observational and clinical trial studies; statistical computing.

- **Dr. Dongsheng Tu**  
  Professor, NCIC Clinical Trials Group, Queen’s Cancer Research Institute  
  *Research Interests*: Clinical trials; resampling methods and applications of censored data; meta-analysis; biostatistical theory and methods.

Faculty from the Department of Mathematics and Statistics

- **Dr. Wenyu Jiang**  
  Associate Professor, Jeffery Hall, Queen’s University  
  *Research Interests*: Statistical analysis of genomic data; statistical methods in clinical trials; Survival analysis; Resampling models.

- **Dr. Devon Lin**  
  Associate Professor, Jeffery Hall, Queen’s University  
  *Research Interests*: Theory and application of fractional factorial designs; design construction for computer experiments; evaluation of complex computer models; Variance estimation in complex survey.

- **Dr. Glen Takahara**  
  Associate Professor, Jeffery Hall, Queen’s University  
  *Research Interests*: Bayesian methods and applications; orientation-data analysis, and functional data.

- **Dr. David Thomson**  
  Professor, Jeffery Hall, Queen’s University  
  *Research Interests*: Analysis of global climate data; Space physic; Financial time series.
In addition, Drs. Chen, McIsaac, Peng, and Tu are cross appointed in the Department of Mathematics and Statistics.

Research groups

The faculty members in the Department of the Public Sciences Statistics are affiliated with a number of health-research groups in the Kingston area. Some of them are listed below. By studying in this program, students will have opportunities to interact with health researchers in these groups. Some of the research groups have the potential to provide practicum or employment opportunities:

- **Centre for Health Services and Policy Research**
  21 Arch Street, 3rd Floor, Abramsky Hall, Queen’s University
  Director: Dr. Michael Green, email: michael.green@dfm.queensu.ca

- **Cancer Care & Epidemiology, Queen’s Cancer Research Institute**
  10 Stuart Street, 2nd Floor, Cancer Research Institute, Queen’s University
  Director: Dr. Michael Brundage, email: michael.brundage@krcc.on.ca

- **KGH Research Institute**
  76 Stuart Street, Angada 4, Kingston General Hospital (KGH)
  Director: Dr. Rob Brison, email: brisonr@kgh.kari.net

- **Kingston, Frontenac, Lennox & Addington Public Health Unit (KFLA Public Health)**
  221 Portsmouth Avenue, Kingston
  Medical Officer of Health: Dr. Ian Gemmill, email: ian.gemmill@kflapublichealth.ca

- **Canadian Cancer Trials Group, Cancer Research Institute**
  10 Stuart Street, 1st Floor, Cancer Research Institute, Queen’s University
  Director: Dr. Janet Dancey: jdancey@ctg.queensu.ca

- **ICES Queen’s**
  21 Arch Street, 2nd Floor, Abramsky Hall, Queen’s University
  Director: Dr. Ana Johnson, email: ana.johnson@queensu.ca

Admission Information & Requirements

How to Apply

All applications are to be completed on line through the School of Graduate Studies website at: https://eservices.queensu.ca/apps/sgsapp/

Please read all the information provided at: http://www.queensu.ca/sgs/forstudents/application.html.

Transcripts are to be sent directly from the issuing university to: School of Graduate Studies, Gordon Hall, Room 425, Queen’s University, 74 Union Street, Kingston, Ontario, Canada, K7L 3N6
Key Dates and Deadlines

- Full-time students are accepted into the Master of Science Specializing in Biostatistics program for a September start date each year.
- **Application Deadline:** January 31st. Late applications will be considered if space is available.
- All completed applications will be reviewed starting in February each year.
- **Notification of Acceptance:** March or April.
- Submission by the earlier date offers a better chance of receiving available departmental funding.

Academic Prerequisites

- Honours (four-year) undergraduate degree with an overall average of 75%.

Other Requirements

- Applicants must demonstrate sound analytical training, and a strong interest in applications in health sciences, life sciences, or biology.
- All applicants must submit two copies of their official transcripts from all post-secondary institutions attended.

Test Requirements

- Graduate Records Examination (GRE) score is mandatory for applicants from non-Canadian universities and a minimum score of 149 is required on the quantitative section. The GRE institution code and department code is 0949 and 0606, respectively. For information see: [http://www.ets.org/gre](http://www.ets.org/gre)
- International students from a non-English speaking university or students with English as a second language will require a minimum TOEFL score of 600 (paper) or TOEFL iBT minimum scores of: writing (24/30); speaking (22/30); reading (22/30); listening (20/30), for a total of 88/120. Applicants must have the minimum score in each test as well as the minimum overall score. The TOEFL institution code is 0949 and the department code is 50.
- The International English Language Testing System (IELTS) is also acceptable. The four sections are each graded on a scale of nine, and applicants must achieve a score of seven on the academic portion. For information see: [https://www.ieltscanada.ca/](https://www.ieltscanada.ca/).

Important Application Form Information

- For the “Reference Information” section of the application:
  1. If you wish to submit more than two reference letters, please note that your application will not be considered complete and will not be reviewed until ALL reference letters have been received.
  2. If you have been out of school for more than five years, please note that you may submit one academic reference and one professional reference. If you have been in school within five years, you are encouraged to submit two academic references.
  3. Please follow-up with your referees to ensure your reference letters have been submitted on time.

- If, at any point, you would like to confirm completion of your application, please contact Sue
Program Requirements

The objective of the Collaborative Master’s 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. Students whose home program is in PHS are required to complete:

- Eight courses in two terms. The six core courses (EPID 801, EPID 823, EPID 804, STAT 853, STAT 886, STAT 862) are taken during the fall and winter terms, along with two elective courses in the winter term.

- A supervised practicum project in biostatistics (EPID 888) in the summer term. Under the direction of a supervisor, students will complete either a research project pertaining to some aspect of the biostatistics methodological research work of their supervisor, or a practicum placement with an academic or industry-based research group pertaining to the biostatistics applications.

- A Human Research Ethics (CORE) online tutorial (SGS 804). The Tri Agency online course is a mandatory requirement for all graduate students conducting research involving human subjects.

Mandatory Courses

EPID 801: Introduction to Epidemiology
This course deals with the design and analysis of research in epidemiology. Topics include: measures of health status; risk factors and associations between them; study design including descriptive, analytical, experimental, and theoretical approaches; validity issues; critical appraisal; sources of data; and data collection and management.
Three term hours, plus a 1.5-hour tutorial, fall, every year.
Instructor: K. Aronson

EPID 804: Intermediate Epidemiology
This course deals with advanced methods and issues in the design, conduct, analysis and interpretation of epidemiologic studies. The content focuses on observational study design and analysis, and builds on epidemiologic principles presented in EPID 801. Data analysis will emphasize the application and interpretation of statistical concepts in epidemiologic research.
Three term hours, winter, every year.
Instructor: W. King, W. Pickett

EPID 823: Advanced Methods of Biostatistics
An advanced course in the theoretical issues and analytical practices in epidemiology, and biostatistics.
Three term hours, fall, every year.
Coordinator: Dongsheng Tu.
STAT 853: Statistical Inference
Decision theory and Bayesian inference; principles of optimal statistical procedures; maximum likelihood principle; large sample theory for maximum likelihood estimates; principles of hypotheses testing and the Neyman-Pearson theory; generalized likelihood ratio tests; the chi-square, t, F and other distributions.
Three term hours, winter, every year.
Offered jointly with STAT 463

STAT 862: Computational Data Analysis
An introduction to aspects of computer software consistent with modern professional practice of statistics. Particular attention is given to the use of the statistical packages SAS and R.
Three term hours, fall or winter, every year.
Offered jointly with STAT 462

STAT 886: Survival Analysis
Introduces the theory and application of survival analysis: survival distributions and their applications, parametric and nonparametric methods, proportional hazards models, counting process and proportional hazards regression, planning and designing clinical trials.
Three terms hours, winter, every year.
Offered jointly with STAT 486.

Elective Courses

Department of Public Health Sciences

EPID 810: Controlled Clinical Trials
This course will cover material relevant to the design and conduct of controlled clinical trials. Design topics will include methods used to achieve unbiased results with improved precision, such as adequate sample size, randomization, blinding, pre- and post-stratification, cross-over designs, placebos and the counting of relevant events. Attention will be given to the problems of conducting multi-centre clinical trials. Topics covered will include drafting of protocols, design of data forms, logistics of data flow, methods of follow-up, data management and quality control, periodic reporting, final data analysis and the production of final reports. Ethical issues and the role of randomized trials in clinical investigation will be discussed.
Three term hours, winter, every year.
Instructor: D. Tu and J. Pater

EPID 817: Foundations of Cancer Control
This course is intended for graduate students, clinical fellows and postdoctoral fellows who are engaged or interested in cancer research. This course will provide students with training in the fundamentals of epidemiologic methods in cancer research and with knowledge of how epidemiology could contribute to better understanding of cancer etiology and control in human populations. The course will focus on concepts and methodological issues central to the conduct of epidemiologic studies of cancer etiology and control. Topics will include: an introduction to basic epidemiologic concepts, biologic concepts central to the investigation of cancer, study design, clinical epidemiology, and cancer control and prevention.
Three term hours, fall, every year.
Instructor: H. Richardson
**EPID 822: Intermediate Biostatistics**
This course deals with the commonly used statistical methods proven useful in health services research and the epidemiologic analysis of the relationship between traits, exposures or treatments and diseases or other medical outcomes. The course emphasizes the statistical modelling approach with topics including multiple regression, analysis of variance and covariance, reliability of measurements, analysis of categorical data and logistic regression.
Three term-hours, plus a 1.5 hour tutorial, winter, every year.
Instructors: C. O'Callaghan, K. Ding, M. McIsaac and P. Peng.
PREREQUISITE: EPID 821 (or equivalent).

**EPID 828: Infectious Disease**
This course provides an introduction to the principles of infectious disease prevention and control relevant to public health practice. The course focuses on the etiology, history, societal impacts and determinants of infectious diseases. There is an emphasis on modern prevention and control effort that can be applied at the local, national, and international levels.
Three term-hours, winter, every year.
Instructor: TBD
PREREQUISITES: EPID 801 and EPID 821 (or equivalent).

**Department of Mathematics and Statistics**

**STAT 855: Stochastic Processes and Applications**
Three term hours, fall, every year.
Offered jointly with MATH/STAT 455

**STAT 864: Discrete Time Series Analysis**
Autocorrelation and auto-covariance, stationarity; ARIMA models; model identification and forecasting; spectral analysis. Applications to biological, physical and economic data.
Three term hours, winter, every year.
Offered jointly with STAT 464

**STAT 873: Generalized Linear Models**
An introduction to advanced regression methods for binary, categorical, and count data. Major topics include maximum-likelihood method, binomial and Poisson regression, contingency tables, log linear models, and random effect models. The generalized linear models will be discussed both in theory and in applications to real data from a variety of sources.
Three term hours, winter, every year.
Offered jointly with STAT 473.

**MATH 895: Probability Theory**
The course provides basic knowledge in probability at the graduate level. Topics will include: basic notions and concepts of Probability Theory; characteristics functions; law of large numbers and central limit theorem; martingales; stochastic processes.
Three term hours, winter, every year.

**Department of Psychology**

**PSYC 801: Design and Experiments**
Topics include: The logic of the test for significance and controversies concerning it; ANOVA and its underlying linear model for between-subject, within-subject and split-plot designs; orthogonal comparisons for trend analysis and for special contrasts; restricted randomization and the randomized-block design; partial confounding in latin-squares; balancing conditions against trend; hierarchical designs; ANOVA and multiple correlation; designs including organismic variables; random-effect models and the fixed-effect fallacy; data transformations and non-parametric tests.
Three term hours, fall, every year.

**PSYC 802: Introduction to Multivariate Analysis**
Topics include: history of multivariate techniques; matrix algebra; data assumptions and preparation; multiple regression; canonical correlation; multivariate analysis of variance; and discriminant function analysis.
Three term hours, winter, every year.

**PSYC 940: Structural Equation Modelling**
Topics include: data and covariance structure models; estimation; identification; evaluating solutions; model modification and equivalent models; casual versus effects indicator; power; confirmatory factors analysis; multiple group analysis; latent curve modelling; and multivariate change models.
Two term hours, winter, every year.

**Department of Biology**

**BIOL 861: Introduction to Linear Models for Biological Data**
This course is designed for biology graduate students with a basic introductory statistics/experimental design course and a working knowledge of R, a language and environment for statistical computing. In-depth exploration of all aspects of fitting linear models to continuous and categorical data, using mainly the lm function in R. Topics include residual analysis, maximum likelihood methods, graphical presentations, ordinary least squares, model II regression, transformations, model selection with focus on information-theoretic approaches and outlier detection.
Three term hours, fall, every year.

**Department of Economics**

**ECON 852: Quantitative Methods**
A first course in econometrics at the graduate level. Students are expected to have had at least one econometrics course at the undergraduate level, and to be familiar with matrix algebra and elementary statistics. A broad range of econometrics models will be covered.
Offered jointly with ECON 450, fall.

**ECON 853: Applied Econometrics**
The main purpose of the course is to provide a link between economic theory, on the one hand, and econometric methods, on the other, by examining a range of contemporary empirical applications. The
course is not designed merely to illustrate methods; rather to expose the student to the art of structural model-building for the purpose of advancing economic theory. Applications of econometrics to policy appraisal will also be covered. The course is suitable for specialists and non-specialists alike. Prerequisites: ECON 852 or equivalent, winter.

School of Computing

CISC 875: Bioinformatics
This inter-disciplinary course for students in the computational and life sciences looks at the application of computing techniques to molecular biology. Topics may include: DNA data analysis (genomics), secondary and tertiary structure analysis (nucleic acids and proteins), molecular scene analysis, evolutionary trees (phylogenetics), and computing with DNA. Three term hours; lectures and seminars, winter. PREREQUISITE: Permission of the School.

EPID 888: Master’s Practicum

The objective of the Collaborative Master 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 (6 core courses and 2 elective courses), he/she will start the 4 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 team work 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.

For more information use the guide to the practicum.
Ethics

Students must complete an online course in Human Research Ethics (CORE - SGS 804) offered by the School of Graduate Studies. Master of Science specializing in Biostatistics students are required to take this course before the start of their research. The URL for course access is: http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/

Academic Information

Academic Progress

Academic progress will be monitored by the academic advisor/thesis supervisor and the MSc Specializing in Biostatistics Program Director to ensure that major milestones are reached.

The following guidelines are used when assessing student progress toward major milestones:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
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<tbody>
<tr>
<td>1 - Fall</td>
<td>EPID 801: Introduction to Epidemiology</td>
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<tr>
<td></td>
<td>EPID 823: Advanced Methods in Biostatistics</td>
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<tr>
<td></td>
<td>STAT 853: Fundamentals of Statistical Inference</td>
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<tr>
<td></td>
<td>STAT 862: Computational Data Analysis</td>
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<tr>
<td></td>
<td>SGS 804: Human Research Ethics (on-line tutorial)</td>
</tr>
<tr>
<td>2 - Winter</td>
<td>EPID 804: Advanced Epidemiologic Methods</td>
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<tr>
<td></td>
<td>STAT 886: Survival Analysis</td>
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<tr>
<td></td>
<td>Two Electives</td>
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<tr>
<td>3 - Spring/Summer</td>
<td>EPID 888: Practicum, Report, and Presentation</td>
</tr>
</tbody>
</table>

Academic Dishonesty

All registered graduate students should be aware of the seriousness of academic dishonesty in a graduate setting and the possibility of expulsion from the program for any of the listed offenses. Submitting any written work (either in draft or final form) in whole or in part that is authored by someone else, or using direct quotations or large sections of paraphrased material in a project, research report, thesis, or other scholarly publication without appropriate acknowledgment is considered Academic Dishonesty.

An expanded discussion, including definitions of Academic Dishonesty and Plagiarism is found in the School of Graduate Studies calendar.

Students are encouraged to consult their course instructors regarding appropriate use of materials if in doubt about how their use may relate to academic dishonesty.
If a course instructor, teaching assistant or supervisor identifies a case of Academic Dishonesty; the steps outlined below will be followed. There will be no exceptions to the policy.

**Policy on Plagiarism**

The Department of Public Health Sciences Policy on Plagiarism applies to any submitted work in any registered course a student is taking while registered as a graduate student, or a student thesis outline, thesis proposal and/or final thesis or practicum project.

Should a student's submitted work be found to contain any evidence of plagiarism (unreferenced work from other papers, books, articles, websites, including and not limited to figures, text, tables, lists, conclusions, etc.), the following action shall be taken:

- The student will receive a grade of zero for the submitted work in which the infraction is found. The final grade in the course will be computed using the method specified by the instructor in the course outline.

- A note will be placed in the student's file indicating that academic dishonesty has occurred. Should the student be found to have committed academic dishonesty on a second occasion, the department will seek to have the student expelled from the program.

**Appeal of an Assigned Grade in a Graduate Course**

Any student wishing clarification about, or who is dissatisfied with, an assigned grade in a graduate course should first discuss the matter with the course instructor, who will review the work in question. This discussion should take place within 14 days of the grades being available. If the instructor agrees to change a grade, a change of grade form shall be processed in the usual way.

If the instructor confirms the original grade, and if the student is still dissatisfied, then the student should appeal to the Department Head or Graduate Coordinator in the department, stating clearly the grounds on which the grade should be raised. If the Head or Graduate Coordinator believes the grounds to be reasonable, then the Head or Graduate Coordinator should initiate a review of the grade.

If the Head or Graduate Coordinator does not agree to a review of the grade, then the student has the right to formally request a review of the grade through the Dean of the School of Graduate Studies. The Dean will forward the request to the Head or Graduate Coordinator in the department, who will conduct a review of the grade.

The grade determined by means of the review shall be recorded as the final official grade, irrespective of whether it is identical to, or higher or lower than, the original grade. The Head or Graduate Coordinator will inform all parties, including the Dean of the School of Graduate Studies, of the result of the review. Further appeal of an assigned grade can be made only on the basis of a specific procedural error or errors made in the departmental grade review procedures. This would be done through convening the Academic Appeal Board of the School of Graduate Studies.
Financial and Funding Information

The department will consider funding support to full-time students in the program, based upon each student’s academic standing and on the sources of funding available each year. The funding support is usually a combination of external internal awards, internal departmental awards, and research assistantships.

Students are expected to apply for internal awards as part of their packages if they are eligible. Generally, minimum eligibility for awards is an 80% average over the past two years (or twenty courses) of study. Qualified first-class candidates (over 80% average) are automatically nominated for internal Queen's Fellowship and Graduate Awards once they are accepted into the program. The Department coordinates these applications, as well as those for external awards and assists students in their preparation.

Students may also receive funding from their supervisors in the form of research assistantships. Supervisors may request a reasonable contribution of work from students whom they are supporting. The department may also request a reasonable contribution of work from any student who is receiving more than half of their funding from the central departmental awards. Research Assistantships not related to the student’s thesis work are also available. These vary according to the availability of positions and are advertised through email to all current students. Full-time students are allowed to work an average of ten hours per week on non-thesis related projects.

A limited number of teaching assistantships maybe available to biostatistics students. Announcements about these positions are sent to all students in the summer prior to the beginning of the academic year and applications are reviewed based on academic standing and relevant experience. Students conducting a practicum within Queen’s health research groups may receive research assistantships.

Students are also encouraged to apply for external scholarships such as ACCELERATE Ontario - Ontario’s Graduate Research Internship Program.
Departmental administrative staff is based in Carruthers Hall and will be happy to show students where equipment is located, how it is operated and how to gain access. All students will be provided with access to office services including fax, phone, courier, supplies, printing and photocopying, some of which may be accessed on a cost recovery basis.

Administrative staff will be happy to show students where equipment is located, how it is operated and how to gain access.

More specifically, the following equipment and facilities are available for student use:

- Students may fax material using the photocopier located in the student common room in Carruthers Hall on the 3rd floor. The photocopy machine is also located in the student common room. All students will be provided with a photocopy code which is required to use the machine.

- Supplies: Interdepartmental envelopes are available at no charge.

- A small kitchen is available for student and faculty use. It is equipped with a microwave, coffee machine, and sink.

- Computers: Students are required to have their own computers. In order to facilitate group work and allow for students to access desk space in the common rooms, laptops are ideal. The department has a statistical computing server that is available for students to conduct statistical analysis using R (and SAS). There are also 2 communal computers available for use in the student common room; these computers are equipped with internet access, word processing, SAS and SPSS software.

- Wireless: Carruthers Hall is equipped for wireless communication so that students may check their emails and work on the web from their workstations, classroom, and common room.
- Lockers and desk space are available to all students on the 3rd floor of Carruthers Hall.

- Keys for the Carruthers Hall and student rooms are available from the Graduate Assistant. A $20 cash deposit is required which will be returned when keys are handed in.

**Access to Email and Computer Accounts**

All Public Health Sciences students are required to obtain a Queen’s student e-mail account. The computer help desk phone number is: 613-533-6666.

**Programs and Services Offered at Queen’s**

**Athletics and Recreation Centre**

The Athletic and Recreation Centre is a hub of activity on campus. This facility offers a number of opportunities and locations for students to contribute to and enhance/maintain their health. The Athletic and Recreation Centre provides students, faculty, staff and community members with a selection of eating establishments, a student run café, a small market stocked with fresh produce and meat and a prescription dispensing, fully supplied pharmacy. All of these amenities are situated alongside the 24,500 sq. ft. of cardiovascular and strength-training space, pool, racquet courts, gymnasiums, exercise, dance and spin studios and combative rooms.

**Health, Counselling and Disability Services**

**Health Services**

Health Services provides confidential, student-centred health care. The staff is made up of family physicians and registered nurses with a special interest in the health issues of students. Students are free to arrange appointments at the health centre during the workweek, provided they have not opted out of the health coverage provided by the university.

Health Services is located in the LaSalle building at 146 Stuart St. Appointments can be scheduled by calling 613-533-2506 and are able to be booked at the following times:

- Monday - 9:00 am to 4:30 pm
- Tuesday - 9:00 am to 7:30 pm
- Wednesday - 9:00 am to 4:30 pm
- Thursday - 9:00 am to 7:30 pm
- Friday - 9:00 am to 3:00 pm

**Counselling Services**

Counselling Services is committed to providing services that respect the dignity and values of all people inclusive of age, gender, ethnicity, physical qualities, sexual identity and ability.
Some reasons why students seek counseling:

- Abuse and assault issues
- Academic engagement or direction
- Substance use
- Anxiety and mood problems
- Coping with grief or loss
- Relationships
- Eating/body image difficulties
- Self-harm
- Homesickness/loneliness
- Self-confidence and self-esteem issues
- Sexuality and sexual orientation
- Stress
- Transition to university
- Social functioning
- Dealing with racism

Students are urged to seek guidance and assistance before the issue escalates and becomes more difficult to handle.

To make a counselling appointment, please call 613-533-6000 ext. 78264 or stop by, in person, to the LaSalle building at 146 Stuart St. Appointment times fall within 9:00 am – 4:30 pm Monday through Friday.

The School of Graduate studies has dedicated on-site counsellors for graduate students. SGS On-Site Counsellors

**Disability Services**

The mission of the Disability Services group is to promote educational equity for students with disabilities, and to assist those students in pursuing a university education.

The Disability Services group assists students by:
- Facilitating access to information, services, space and activities
- Promoting autonomy
- Providing advocacy and support
- Recommending accommodations
- Educating the Queen’s community about the ways in which the above objectives may be supported and empowered

**Registration and Documentation**

In order to become registered with Disability Services, students must provide documentation and information from a registered health care professional on their disability. This documentation should include a diagnostic statement and a description of functional limitations, in particular those that have an impact on performance in a university environment. All documentation must be on the practitioner’s
official letterhead, indicating name of practitioner, professional credentials, address, phone number, date and signature.

The registration process includes a meeting with an advisor and this appointment can be booked by contacting Disability Services by phone: 613-533-6467, email: hcds.dso@queensu.ca or in person: LaSalle Building, 146 Stuart St, first floor.

Please visit http://www.queensu.ca/hcds/ds/students/registration.html#new for the complete registration process for new students.

**Accommodations Offered by Disability Services**

Upon documentation receipt, an advisor will review it and work with you to create an appropriate individualized accommodation plan that may include:

- Special examination arrangements
- Use of computers for exams and an adaptive technology lab and equipment loan
- Special classroom arrangements
- Alternate formats for course material