

Collaborative Graduate Program with a Specialisation in

# Biostatistics M.Sc.



## Why GRADUATE STUDIES in BIostatISTICS?

Graduate students and their work are an important part of the ongoing research process that provides the community with ways of understanding health problems that occur at a local, regional, national, and even global level. Students gain skills to communicate scientifically, describe trends and patterns of disease incidence and prevalence, critically review scientific literature related to community health and epidemiology, collect and analyse data, and more.

A graduate degree in Biostatistics will equip students with a sound knowledge in observational and experimental study designs, statistical theory, statistical models for health data analysis, and statistical computing. A four-month practicum will provide students opportunities to apply basic knowledge and develop consulting expertise within a health research group in an academic or industry setting. The Department of Public Health Sciences and Department of Mathematics and Statistics jointly offer the collaborative M.Sc. program in biostatistics specialization. The two departments offer strong graduate programs that include a broad range of courses in statistics, biostatistics, epidemiology, and health services 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. Graduates of this program will be capable of working as biostatistical data analysts within multi-disciplinary health research teams.

## Why QUEEN'S?

Our established strengths are in the areas of cancer, injury, obesity, disability, and mental health epidemiology as well as research in various health services contexts including public health, primary care, cancer care and critical care. We also have some emerging strengths in the areas of Northern health, Aboriginal health, and global health studies.



*"For me, the M.Sc. specializing in Biostatistics program at Queen's has two main things that are important: the research experience of the faculty and the positions the alumni secure after graduation."*

*- Andrew Dabbikeh, M.Sc. Candidate*

Our students have unique opportunities to develop their analytic skills and practical experience in our program. Students find themselves in a stimulating health research environment and work with renowned research groups in most major fields in the health sciences. Our graduates also find employment opportunities in pharmaceutical companies, private industry, research organizations, public health and government agencies, medical research institutions and universities.

## Program STRUCTURE

- M.Sc. Epidemiology with a Specialization in Biostatistics/M.Sc. Mathematics and Statistics with Specialization in Biostatistics

Course work: 6 core courses, 2 electives plus 1 supervised practicum (EPID/STAT 888). 12 months full time; part-time studies available on a case-by-case basis.

## RESEARCH Areas

- Epidemiology and Population Health
- Health Services and Policy Research
- Clinical Epidemiology

## Research AFFILIATIONS

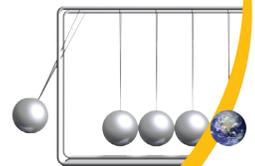
Students have opportunities to work with our Faculty who are affiliated with a number of health research groups in the Kingston area including:

- NCIC Clinical Trials Group
- Cancer Care and Epidemiology Group
- Centre for Health Services and Policy Research
- Queen's School of Rehabilitation Therapy
- Clinical Research Centre at Kingston General Hospital
- Research and Education Program at KFL&A Public Health Unit

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# Biostatistics



## Faculty RESEARCH and SUPERVISION

### PUBLIC HEALTH SCIENCES

- **Bingshu Chen:** Survival analysis, design and analysis of clinical trials, cancer genetics and epidemiology
- **Keyue Ding:** Design and analysis of clinical trials; Sequential analysis; Statistical quality control procedures; Change point detection and estimation; Statistical computing
- **Michael McIsaac** (Program Director): 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
- **Paul Peng:** Statistical models for survival data with a cure fraction; statistical methods for causality analysis in observational studies; novel statistical methods for analyzing data from case cohort studies; life expectancy calculations and use of statistical methods in assessing adoption of adjuvant chemotherapy for non-small cell lung cancer and bladder cancer in Ontario
- **Dongsheng Tu:** Clinical trials, resampling methods and applications of censored data, meta-analysis, biostatistical theory and methods

### MATHEMATICS AND STATISTICS

- **Wenyu Jiang:** Statistical methods in clinical trials; survival analysis; computational methods; analysis of genomic data
- **Devon Lin:** Theory and applications of fractional factorial designs, design construction for computer experiments, evaluation of complex computer models, interface between data collection and modelling
- **Glen Takahara:** Bayesian methods and applications, orientation data analysis, and functional data
- **David Thomson:** Analysis of global climate data, space physics, financial time series

## WEBSITE

[queensu.ca/phs/msc-biostatistics](http://queensu.ca/phs/msc-biostatistics)  
[queensu.ca/biostat](http://queensu.ca/biostat)

# Application FAQs

## What do I need to know to **APPLY**?

### ACADEMIC REQUIREMENTS

- 4-year Bachelor's degree with Honours (normally a B.Sc. in Statistics, Mathematics, Biology, Life Sciences, Health Science or Economics).
- **Grade requirements:** An overall minimum average of 75% in undergraduate studies.

### ADDITIONAL REQUIREMENTS

- Two copies of an official transcript (for external students).
- Two academic letters of recommendation.
- If English is not a native language, prospective students must meet the [English language proficiency requirements](#) in writing, speaking, reading, and listening.

### DEADLINES

- Applications are due: **January 31st**
- Application review begins in mid-February.

## What about **FUNDING**?

The Department provides individual funding packages for full-time students in the program, based upon the student's academic standing and on the sources of money available each year. These packages are funded through a combination of external awards, internal awards, internal departmental awards, faculty support, teaching assistantships, graduate research assistant fellowships, and research assistantships.

Apply for external funding from CIHR, NSERC, OGS, ACCELERATE Ontario, and other sources. Queen's automatically issues a \$5,000 top-up to federal tri-council scholarship holders in their first year of study. For more information, see the School of Graduate Studies' information page on awards and scholarships in addition to the home department's graduate awards page.

## CONTACT Information

For more information, contact the representative of the Department that is best aligned with their research interests.

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