

Course Syllabus - CHL 5228H Y

STATISTICAL METHODS FOR GENETICS & GENOMICS - RESEARCH SEMINAR AND JOURNAL CLUB 2022-2023

TIME and PLACE:

Fall term 10am – 12noon Friday (In Person)

Winter term 10am - 12noon Friday (in Person)

Seminar: 1 hour; Small Group Discussion: 1 hour.

<http://www.dlsp.utoronto.ca/students/current-students/timetables/>

<https://www.dlsp.utoronto.ca/course/statistical-methods-for-genetics-genomics-research-seminar-and-journal-club/>

Co-INSTRUCTORS:

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A. COURSE OVERVIEW

Goals and Objectives:

To understand current developments in statistical genetic/genomic methods and current analytic issues in genetic epidemiology.

To become familiar with sources of methodology literature for the design and analysis of investigations in statistical genetics, statistical genomics, and genetic epidemiology.

To develop critical evaluation skills for underlying theory and/or applications of current study designs and statistical analysis methods.

To develop skills in communication and presentation in an inter-disciplinary setting.

Audience: Senior Graduate students in Biostatistics, Epidemiology or Statistics

Pre-requisites: Biostatistics/Statistics coursework at the graduate level and instructor permission

Pre/Co-requisite: CHL5224H or STA480/2080 or equivalent (with permission of the course instructors)

For graduate students/post-doctoral fellows interested in registering in the course for credit/audit, please send an email to both co-instructors and include a brief description of your program, background and pre/co-requisite status, and purpose in registering in the course.

Special features about course delivery:

One hour **Research Seminar/Journal Club** session, held 2-3 times per month, September through April with faculty participation.
Seminar sessions will be followed by one hour small-group discussion for registered students and other participants, with faculty discussion leaders

Co-ordinated with the monthly **International Speaker Seminar Series** (ISSS) organized as part of the STAGE Training Program in Advanced Genetic Epidemiology.
<https://canssiontario.utoronto.ca/events/stage-iss/>
ISSS held Friday at 12 noon usually followed by Informal post seminar Q&A with guest speaker. There will be opportunities for a guest speaker-trainee group meeting.

Group size for discussion: 5-10 trainees (PhD students, post-doctoral fellows).

Faculty Discussion leaders:

Shelley Bull, Dalla Lana School of Public Health & Lunenfeld-Tanenbaum Research Institute
Andrew Paterson, Dalla Lana School of Public Health & SickKids Research Institute

Academic deadlines:

Deadline for scheduling student presentations: 25 November 2022.
Deadline to submit a one page paper outline: no later than 10 February 2023.
Due date for the Final paper: 14 April 2023.

B. ASSIGNMENTS AND EVALUATION

Students are expected to:

- (1) attend Friday journal club sessions & seminars, including CANSSI STAGE ISSS
- (2) present in one journal club session, and
- (3) submit a short paper.

Pass/Fail according to

Participation in Seminars and Discussion Groups (Fall 2022 & Winter 2023)
Presentation (Late Fall 2022 or early Winter term 2023)

Final paper (end of the Winter term 2023)

A pass is required in all three components

Some guidelines for the paper

Set up a meeting with course faculty to help formulate the research question that you want to consider in the paper, and discuss how to address it.

Submit a one page outline no later than 10 February 2023.
Final paper is due 14 April 2023.

Formatting and Length:

Any standard journal style is acceptable, see for example guidelines for authors in *Genetic Epidemiology*, *Statistics in Medicine*, *Amer J of Human Genetics*.

Please submit with 12 pt font, and 1.5 line spacing.

Length of 10-15 (max) manuscript pages, excluding references, tables and figures.

C. POLICY STATEMENTS

1. Academic Integrity (<https://www.academicintegrity.utoronto.ca>): Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences:

(<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>)

University of Toronto's policy regarding plagiarism:

<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>

Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

2. Turnitin.com: "Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site".

3. Accessibility and Accommodation: The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. For more information, or to register with Accessibility Services, please visit: <http://studentlife.utoronto.ca/as>

4. Equity, Diversity, and Inclusion: As we all adjust to online classes and lectures, and increasingly participate in virtual learning environments, students are reminded of the expectation that we all demonstrate respect for one another. As outlined in the Student Code of Conduct, the University of Toronto does not condone discrimination or harassment against any persons or communities especially when based on grounds protected under the Ontario Human Rights Code. The University of Toronto recognizes its commitment to human rights, equity and inclusion and acknowledges the disproportionate impact COVID-19 has on various parts of our community. COVID-19 is not isolated to people of any particular ethnic origin, place of origin or race. Equity, diversity and respect must remain integral as we continue to transition during these challenging times. The institution will monitor and address discriminatory comments or behaviour including on U of T's online platforms and classrooms

In accordance with the Ontario Human Rights Code, no person shall engage in a course of vexatious conduct that is directed at one or more specific individuals, and that is based on the race, ancestry, place of origin, colour, ethnic origin, citizenship, sexual orientation, gender identity, gender expression, age marital status, family status or disability. This includes:

- Racial slurs or "jokes"
- Insults due to racial identity
- Online posts of cartoons or pictures, in a workplace or school that degrade persons of a particular racial group
- Name-calling due to race, colour, citizenship, place of origin, ancestry, ethnic background or creed
- Pseudonyms or handles that are inappropriate about ancestry, colour, citizenship, ethnicity, place of origin, race, or religion

The University of Toronto's Equity Offices remain available to students to provide support on equity issues that arise as a result of COVID-19.

Students are encouraged to support one another and the University's commitment to human rights and our values of diversity, inclusion, and respect in managing any inappropriate comments or disruptive behaviours. If you experience or witness inappropriate comments or behaviours in your classes, you are encouraged to contact your instructor. If you can, take and share a screenshot of the inappropriate content with your instructor so they can follow-up with you and address the conduct.

5. Acknowledgement of Territory: We would like to acknowledge the traditional territories of the Mississauga of the New Credit First Nation, Anishnawbe, Wendat, Huron, and Haudenosaunee Indigenous Peoples on which the Dalla Lana School of Public Health now stands. The territory was the subject of the Dish With One Spoon Wampum Belt Covenant, an agreement between the Iroquois Confederacy and Confederacy of the Ojibwe and allied nations to peaceably share and care for the resources around the Great Lakes. We would also like to pay our respects to all our ancestors and to our present Elders.

D. SEMINAR SCHEDULE (subject to revision)

September 16 10am – Information session for graduate students interested in registering in the course for credit/audit (to be confirmed)

September 23 10 am – Organizational Meeting re topics & themes for the Seminar/Journal Club this academic year

* September 26 – Last date to add a course *

September 30 10 am – Discussion session for registered graduate students (to be confirmed)

** 2022 Distinguished Lecture Series in Statistical Sciences: Xihong Lin
Ensemble Methods for Testing a Global Null Hypothesis
September 30 3:30pm **
<https://canssionario.utoronto.ca/event/2022-dlss-xihong-lin/>

October 7 12 noon – CANSSI STAGE International Speaker Seminar

Speaker: **Teri Manolio**, National Human Genome Research Institute (US)
Director, Division of Genomic Medicine
<https://canssionario.utoronto.ca/events/stage-iss/>

October 14 *No Seminar - Reading Week*

October 21 10 am – Seminar/Journal Club

** ASHG October 25-28 **

November 4 12 noon – CANSSI STAGE International Speaker Seminar - TBA

November 11 10 am – Seminar/Journal Club

November 18 10 am – Seminar/Journal Club

* November 25 - Deadline to schedule course presentation in Winter term *

November 25 10 am – Seminar/Journal Club

* last week of classes November 28 – December 2 *

December 2 12 noon – CANSSI STAGE International Speaker Seminar

Speaker: **Andrea Ganna**, Harvard Medical School
Analytic and Translational Genetics Unit, Mass General Research Institute
Research Fellow in Medicine

December 9 10 am – Seminar/Journal Club (To be confirmed)

***** 2023 ***** (subject to revision)

* First week of classes January 9-13

January 13 12 noon – CANSSI STAGE International Speaker Seminar - TBA
January 20 10 am – Seminar/Journal Club
January 27 10 am – Seminar/Journal Club
February 3 12 noon – CANSSI STAGE International Speaker Seminar - TBA

* February 10 - Deadline to submit paper outline *

February 10 10 am – Seminar/Journal Club
February 17 10 am – Seminar/Journal Club

* February 27 - Final date to drop full-year course *

February 24 *No seminar* – Winter Break (Reading) Week

March 3 12 noon – CANSSI STAGE International Speaker Seminar - TBA
March 10 10 am – Seminar/Journal Club
March 17 10 am – Seminar/Journal Club
March 24 10 am – Seminar/Journal Club
March 31 10 am – Seminar/Journal Club

** Last week of classes – April 3 – 6; Good Friday holiday April 7 **

** April 14 - Due date for final student papers **

April 14 12 noon – CANSSI STAGE International Speaker Seminar - TBA
May 5 12 noon – CANSSI STAGE International Speaker Seminar - TBA