

## Course Syllabus - CHL 5228H Y

### **STATISTICAL METHODS FOR GENETICS & GENOMICS - RESEARCH SEMINAR AND JOURNAL CLUB 2021-2022**

#### **TIME and PLACE:**

**Fall term** 10am – 12noon Friday (On-line Synchronous)

**Winter term** 10am - 12noon Friday

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

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

<https://www.dlsph.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

**Co-requisite:** Modern Statistical Genetics, CHL5224H Fall Term  
<https://www.dlsph.utoronto.ca/course/statistical-genetics/>

To receive a zoom invitation to attend an information session for graduate students/post-doctoral fellows interested in registering in the course for credit/audit (September 10, 2021 at 10am), 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.

<http://www.stage.utoronto.ca/home/issv>

ISSS held Friday at 12 noon 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:** 12-15 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: 12 November 2021.

Deadline to submit a one page paper outline: no later than 11 February 2022.

Due date for the Final paper: 25 March 2022.

## **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 2021 & Winter 2022)

Presentation (Late Fall 2021 or early Winter term 2022)

Final paper (end of the Winter term 2022)

*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 11 February 11 2022.

Final paper is due 25 March 2022.

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 10** 10am – Information session for graduate students/post-doctoral fellows interested in registering in the course for credit/audit

**September 17** 10 am – Organizational Meeting re topics & themes for the Seminar/Journal Club this academic year

\* September 20 – Last day to add a course \*

**September 24** 10 am – Seminar/Journal Club

**October 1** 12 noon – CANSSI STAGE International Speaker Seminar

Speaker: **Benjamin Neale**, Harvard Medical School  
Associate Professor; Director, Genomics of Public Health Initiative,  
Analytic and Translational Genetics Unit, Massachusetts General Hospital;  
Institute Member and Director, Genetics, Stanley Center for Psychiatric Disease, Broad Institute

**October 8** 10 am – Seminar/Journal Club

\* IGES October 12-15 \* ASHG October 17-20 \*

**October 15** *No Seminar* - Reading Week

**October 22** 10 am – IGES/ASHG Highlights

**October 29** 10 am – Seminar/Journal Club

**November 5** 12 noon – CANSSI STAGE International Speaker Seminar

Speaker: **Jordana Bell**, King's College London  
Senior Lecturer, Head of Epigenomics Research Group;  
Department of Twin Research & Genetic Epidemiology; Faculty of Life Sciences & Medicine

\* November 12 - Deadline to schedule course presentation \*

**November 12** 10 am – Seminar/Journal Club

**November 19** 10 am – Seminar/Journal Club

**November 26** 10 am – Seminar/Journal Club

\* last week of classes November 29 – December 3 \*

**December 3** 12 noon – CANSSI STAGE International Speaker Seminar

Speaker: **Antonis Antoniou**, University of Cambridge  
Professor of Cancer Risk Prediction; Academic Course Director MPhil in Epidemiology;  
Department of Public Health and Primary Care

**December 10** ?? 10 am – Seminar/Journal Club

\*\*\*\*\* 2022 \*\*\*\*\* (subject to revision)

\* First week of classes January 3-7

**January 7** 10 am – Seminar/Journal Club

**January 14** 10 am – Seminar/Journal Club

**January 21** 10 am – Seminar/Journal Club

**January 28** 10 am – Seminar/Journal Club

**February 4** 12 noon – **CANSSI STAGE International Speaker Seminar**

Speaker: **David Balding**, University of Melbourne  
Professor of Statistical Genetics; Melbourne Integrative Genomics;  
Schools of BioSciences and Maths & Stats

\* February 11 - Deadline to submit paper outline \*

**February 11** 10 am – Seminar/Journal Club

**February 18** 10 am – Seminar/Journal Club

\* February 20 - Final date to drop full-year courses \*

**February 25** *No seminar* – Winter Break (Reading) Week

**March 4** 12 noon – **CANSSI STAGE International Speaker Seminar**

Speaker: **André Uitterlinden**, Erasmus Medical Centre, Rotterdam, The Netherlands  
Professor of Complex Genetics; Head, Genetic Laboratory and Human Genomics Facility

**March 11** 10 am – Seminar/Journal Club

**March 18** 10 am – Seminar/Journal Club

**March 25** 10 am – Seminar/Journal Club

**March 25** \*\* Due date for final student papers \*\*

\*\* Last week of classes – March 28 - April 1 \*\*

**April 1** 12 noon – **CANSSI STAGE International Speaker Seminar.** - TBA

**May 6** 12 noon – **CANSSI STAGE International Speaker Seminar**

Speaker: **David Conti**, University of Southern California  
Division of Biostatistics, Department of Preventive Medicine

**June 3** 12 noon – **CANSSI STAGE International Speaker Seminar.** - TBA