Location:  
Public and Student Seminars: Sidney Smith Hall, Room 1071

Time: Wednesdays 4:00-7:00

Course Instructor:  
Clare Wiseman, PhD  
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Email: clare.wiseman@utoronto.ca

Course Description: There is a pressing need to study the complex relationships between the environment and human health, especially as we are increasingly challenged by environmental health issues. This course introduces students to various issues related to environment and health in providing an academic environment of inquiry and dialogue where graduate students from various disciplines can exchange ideas, information and insights. Through participation in the affiliated public environment and health seminar series and student-led seminars, the aim is to expose the students to the many ways that issues related to the environment and health are framed, examined, discussed and addressed. The course will stimulate students to reflect on this diverse discussion and to integrate their work into a broader context and perspective. Students will have the opportunity to explore linkages between environmental factors and health issues as these intersect with environmental and health policy, toxicological impacts, psychosocial factors, economic factors and ethical and legal issues.

Educational Objectives: Upon course completion, students will be expected to:
1. Have an understanding of the complex, interdisciplinary nature of environment and health issues,
2. Have an understanding of the importance of cross-disciplinary dialogue to fully comprehend how human health and the environment are interconnected and to develop effective interventions, and
3. Have acquired the skills necessary to research and critically assess scholarly information on topics related to environment and health and to communicate them in a manner that fosters interdisciplinary dialogue and engagement.

Learning Format: The course content is based on presentations on various topics related to environment and health delivered by invited experts. The student-facilitated seminars are intended to allow students to more fully examine issues associated with the respective topical areas presented as part of the public seminar series.
Bi-weekly, an expert in an area related to the environment and health will deliver a public lecture to be attended by the students in ENV4001. Interested faculty at the university, environmental and health activists and other non-UofT community members will also be in attendance. The public lecture lasts for ca. 1½ hours and includes time for questions and answers, often involving a lively exchange of ideas among those attending.

Students enrolled in the course will choose one of the topics of interest to be presented as part of the seminar series to facilitate an in-class seminar (students and instructor only), which will take place one week before the scheduled public talk. Should student enrollment be higher than the number of talks scheduled, students will be expected to form groups to facilitate seminar discussions. As part of the student-led facilitation, students will be expected to identify readings for the respective topics for the rest of the class. Students are encouraged to introduce or highlight related ideas, concepts, methodological/conceptual frameworks, etc. from their own respective disciplinary backgrounds to provide a forum of interdisciplinary exchange and discussion.

**Prerequisites:** None

**Enrolment Restrictions:** Enrolment preference will be given to students who are enrolled in the Graduate Collaborative Specialization in Environment and Health, since ENV4001 serves as the core course for this specialization. Nevertheless, students from other graduate programmes who have an interest in environment and health issues, and who are willing to share a collaborative learning experience, are also invited to enrol. For a description of the Environment and Health Specialization, please see: [https://www.environment.utoronto.ca/graduate/specializations/](https://www.environment.utoronto.ca/graduate/specializations/)

**Quercus:** The course uses the online management system Quercus for the purposes of communication between instructor and students. Students will be provided access to all readings in the form of links in the course’s website on Quercus.

To access the Quercus-based course website, go to the UofT portal login page at [http://portal.utoronto.ca](http://portal.utoronto.ca) and log in using your UTORid and password. If you need information on how to activate your UTORid and set your password for the first time, please go to [http://www.utorid.utoronto.ca](http://www.utorid.utoronto.ca). The Help Desk at the Information Commons and telephone assistance under 416-978-HELP can also answer other related questions.

Once you have logged into the portal using your UTORid and password, you will find a link on the Quercus “Dashboard” to this course website, along with links to all your other Quercus-based courses. At times, the instructor may decide to send out important course information by e-mail. To this end, all UofT students are required to have a valid UofT e-mail address. You are responsible for ensuring that your UofT e-mail address is set up AND properly entered in the ACORN system.

**Evaluation:** Students are required to attend all of the public environment and health seminars
hosted by the School of the Environment scheduled between January and April, 2020 (see table of course schedule dates and topics at end of syllabus).

Seminar participation (ongoing): 10%
Research paper proposal (Due: Feb. 12, 2020): 20%
Seminar presentation/facilitation (Date: TBD): 20%
Oral Presentation of research paper (Dates: TBD): 20%
Research paper (Due: April 1, 2020): 30%

**Library Session:** Students will attend a training session in the computer training laboratory during class hours (**Date: TBC for Jan. 15th from 4:00-5:00**) on the second floor of the Gerstein Library (7 & 9 King’s College Circle). A research librarian will review search engines and databases including those that are most useful to students studying environment and health issues.

**Research Paper Proposal (Due: February 12, 2020):** Students will identify a research question/hypothesis that will provide the focus of their research papers due at the end of the course. Drawing on the skills acquired during the computer research training session, students will prepare an initial literature search for their topics and submit a research paper proposal electronically via Quercus on or before February 12, 2020. Students are not restricted to topics addressed in the course but must be related to environment and health. The proposal will be approximately 3-4 pages in length (1.5 spacing) and will include the following information:

- a brief description of the student’s proposed topic (i.e. background/introduction), including a statement of significance;
- a succinct statement of purpose or goal or research question of focus;
- a description of the research strategy that was employed in the literature search, as follows
  - identification of the keywords or parameters used in the search
  - description of any limits applied such as year of publication, language, sources, as well as the rationale for these limits
  - identification of the search engine(s) used, the databases explored
  - a description of how the search was refined and narrowed;
- a summary of the results, including a description of the number of “hits” obtained and how this may have changed with the placement of additional search limits; and
- a list of the “top ten” articles or other scholarly sources chosen from the literature search.

**Seminar Facilitation:** The student-facilitated seminars will be held each week in advance of the scheduled public talks listed at the end of this syllabus to provide an opportunity for the class to more fully explore the topics to be addressed (Dates: in accordance with choice of seminar topic). In consultation with the course instructor, student facilitators will choose relevant articles of interest to be read by the rest of class prior to the student seminars. Articles must be peer-
reviewed and accessible via our electronic library system. Full article citations and links to readings (which should not exceed 30-40 pages in total) are to be made available circa one week in advance of the student-led seminars to be posted on the course’s website on Quercus. For the seminar facilitation, students are expected to:

- choose quality and relevant articles for background reading (peer-reviewed);
- make an attempt to identify important concepts or issues related to the topic presented by the speaker, and perhaps reflecting the position/approach of the disciplinary background of the respective students, to provide the focus of readings and discussion,
- inform the course instructor of the chosen readings far enough in advance that they can be made accessible at least one week prior to the seminar;
- make a brief informal presentation at the beginning of the student-led seminars;
- suggest questions to stimulate and focus the discussion;
- fully participate and help moderate discussion.

PLEASE NOTE: The first student-led seminar will take place on January 15, 2020, focusing on the topic of the public seminar scheduled for the week thereafter. Given the short timeline for students to prepare for this, topics for student-led seminars will need to be decided on in the first class on January 8, 2010.

**Oral Presentation of Research Paper (Dates: March 25th (following the public seminar) and April 1, 2020):** During the last two weeks of class, students will each present a synopsis of their research papers. The presentation will last approximately 10-15 minutes, to be followed by 5 minutes for questions from the students and the course instructor. Students should adopt the same professionalism and discipline that they would follow if they were making a presentation at a scholarly conference. Each student will be evaluated on the following criteria:

- timing – how well the student adhered to the limitations set for the presentation
- clarity and organization and flow of the content presented
- knowledge of topic
- quality of the slides / overheads / handouts
- quality of the responses to questions
- ability to engage the audience and keep their interest
- speaker’s demeanour – i.e., clarity of articulation, professionalism, confidence with material

**Research Paper (Date: April 1, 2020):** The research paper, due on the date of the last class, will focus on an environment and health-related question or issue that relates to the student’s area of research and/or academic interests. Papers should be formatted as follows:

- Length: 4,000-5,000 words (not including references)
• Have 12 point font
• Include a “References Cited” section, containing all references cited in the paper (no “Bibliography” please)
• For in-text citations, please use (NAME, YEAR) format

Please refer to the “Writing at the University of Toronto” website for advice on effective writing skills. This website can be found at: (http://www.utoronto.ca/writing/index.html). Students are strongly encouraged to draw from recent research.

Submission to Turnitin.com (via Quercus): Students will be expected to upload their final papers to Turnitin.com via the course’s website on Quercus on the due date (deadline: 11:59 PM) 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 website. If, as a student, you object to using Turnitin.com, please see the course instructor to establish appropriate alternative arrangements for submission of your written assignments prior to the submission deadline.

Late Penalties and Deadline Extensions: Late papers will be reduced by 3% of the assignment grade per day (including weekends). Extenuating circumstances may arise that impact your ability to complete an assignment on time. Please discuss these issues with your instructor to make alternative arrangements for submission. Students must submit an original completed University’s official Verification of Illness or Injury Form (former Medical Certificate) to the course instructor for medical-based extension requests. No electronic submissions will be accepted. A copy can be found on the web at: http://www.illnessverification.utoronto.ca/.

In the event that a Verification of Illness or Injury Form can’t be obtained, the following are considered acceptable documentation for absences and requests for extensions:

• Student Health or Disability Related Certificate: Provided only by doctors internal to UofT that can document health-related issues in a confidential manner, and
• Accessibility Services Letter (see below for details regarding accommodations)

PLAGIARISM
Please note that according to the University’s Code of Behavior on Academic Matters, it is an offence for a student to:
1. “represent as one’s own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e., to commit plagiarism.”
2. “submit, without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course or program of study in the University or elsewhere.
3. “submit for credit any academic work containing a purported statement of fact or reference to a source which has been concocted.”
See “Code of Behaviour on Academic Matters” on the Uof T Governing Council website at this address: [http://www.governingcouncil.utoronto.ca/policies/behaveac.htm](http://www.governingcouncil.utoronto.ca/policies/behaveac.htm)
Cases of suspected plagiarism will be addressed in accordance with the procedure established by the Code of Behaviour on Academic Matters.

**Accessibility Services and Wellness Portal:** The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible at 416-978-8060; [accessibility.services@utoronto.ca](mailto:accessibility.services@utoronto.ca) (website: [http://www.accessibility.utoronto.ca/](http://www.accessibility.utoronto.ca/)).

SGS has an on-site accessibility advisor (63 St. George St.) for graduate students.

SGS also has a wellness portal for graduate students seeking advice and help for mental health services and academic supports, including matters related to academic supervision (website: [https://www.sgs.utoronto.ca/resources-supports/wellness-portal/](https://www.sgs.utoronto.ca/resources-supports/wellness-portal/)).
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<th>Dates</th>
<th>Speakers and Affiliations</th>
<th>Seminar Title</th>
<th>Abstract</th>
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<tr>
<td>Jan 22</td>
<td>Dr. Elaine Macdonald, Program Director: Healthy Communities, Ecojustice</td>
<td><em>Ten years after Ecojustice’s report on one of Canada’s most polluted communities: Return to Chemical Valley 2019</em></td>
<td>For more than a decade, Ecojustice has worked with community members from Sarnia and the Aamjiwnaang First Nation (AFN) to reduce industrial air pollution in the Sarnia area. Ecojustice used publically available data to analyze pollution releases by industry in the area, which led to the publication of our 2007 report, Exposing Canada’s Chemical Valley. The report assessed 62 facilities within 25 kilometres of the AFN and brought to light the health concerns of living in one of the most polluted places in Canada. After that report’s publication, Ecojustice undertook litigation on behalf of members of the AFN, engaged in law reform efforts, and used the Ontario Environmental Bill of Rights numerous times to address the environmental injustices in Chemical Valley. Now, in 2019, Ecojustice has published a follow-up report, Return to Chemical Valley, which provides an update on industrial air pollution emissions using the 2016 National Pollutant Release Inventory (NPRI) data, and includes analysis of the air quality monitoring data. Since 2007, our efforts have helped to address some key issues, such as the lack of publicly-available air-quality data. Now, near real-time air quality data is available online. Ontario adopted a policy to assess cumulative industrial air pollution and created rules to limit flaring. A benzene air quality standard is forcing the refining and petrochemical industry to reduce fugitive emissions of VOCs such as benzene and report levels at their fence line. Additional technical upgrades will be required when the updated sulphur dioxide standards come into force in 2023.</td>
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<td>Feb 5</td>
<td>Dr. Hong Chen, Research Scientist, Population Studies Division, Health Canada, Ottawa, Ontario</td>
<td>Exposure to Ambient Air Pollution and the Incidence of Dementia in Ontario</td>
<td>Dementia is a severe neurological disorder that significantly deteriorates quality of life and survival of individuals. It currently affects 47 million people worldwide and the number is expected to triple by 2050. However, the risk factors that make a person more likely to develop dementia are largely unknown. Emerging studies suggest that air pollution may affect brain health. However, little is known about the influence of air pollution on the new onset of dementia. In this talk, I will present three complementary studies that have been conducted in Ontario linking past exposure to air pollution to incident dementia, and will discuss some future research endeavours to refine our understanding of the influence of air pollution on dementia risk.</td>
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<td>Feb 19</td>
<td><strong>Reading Week (no seminar)</strong></td>
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<td>Feb 26</td>
<td>Dr. Courtney Howard, Emergency Physician, Yellowknife, NWT, Board President, Canadian Association of Physicians for the Environment (CAPE)</td>
<td>Climate Change and Human Health (tentative title)</td>
<td>Forthcoming</td>
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<td>March 11</td>
<td>Miriam Diamond, Professor, Department of Earth Sciences, University of Toronto</td>
<td>E-waste impacts in our &quot;always on&quot; society</td>
<td>The world is the midst of a revolution brought on by Information and Communication Technologies (ICT). Global usage of the internet has risen from 17% in 2005 to over 53% or 4.1 billion people in 2019. Electrical and electronic devices enable this usage, including our smart phones and all the wires, servers, cables, etc., that connect the system. Rates of e-waste generation have been estimated at 44.7 million metric tons (tonnes) or 6.1 kg per capita in 2016, with an annual growth rate of 3 to 4%. E-waste contains a wide range of hazardous substances, many of which are essential to product functioning. E-waste collection is mandated for high income countries. However, some e-waste finds its way to low income countries either in whole or in dismantled components and low income countries are producing their own e-waste. We have found that e-waste dismantlers in Ontario and Quebec, working in &quot;formal&quot; e-waste facilities, can have higher exposure to flame retardants than e-waste dismantlers in low income countries working in &quot;informal&quot; settings. However, families and communities in low income communities that handle e-waste are all exposed to hazardous substances due to uncontrolled burning and dumping of e-waste residuals. Much effort has</td>
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gone into controlling the environmental carnage caused by e-waste. Ultimately, e-waste producers need to take responsibility for their devices rather than externalizing the human health and environmental costs of the growing mountain of e-waste.

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<th>March 25</th>
<th>Christine Till, Associate Professor, Department of Psychology, York University, Adjunct Scientist to the Neurosciences and Mental Health Program at SickKids</th>
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<td><em>The Evolving Science of Fluoride Neurotoxicity</em></td>
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<td>Science advances by continuously challenging old ideas and adjusting our way of thinking as new knowledge emerges, even if this means that new evidence conflicts with conventional wisdom. In the past few years, emerging evidence has linked exposure to fluoride during pregnancy and early infancy with lower IQ in children. These findings, which have reignited the debate about the safety of fluoridation, have been met with both support and resistance from the scientific community. The presentation will examine why many questions about the safety of fluoridation are still not settled after 75 years of promoting this public health practice. We will then discuss recent research related to the potential for adverse health outcomes associated with fluoride exposure. The presentation will provide responses to the many reactions that the research has elicited and will share experiences about the challenges researchers face when evidence counters conventional beliefs.</td>
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