

BIG IDEAS BETTER CITIES

McMaster Environmental Crawl (April 21, 2016)

Go behind the scenes and see first-hand how McMaster researchers are making the discoveries that are helping to build more environmentally sustainable cities. Join us for the McMaster Environmental Crawl and explore some of the labs and research spaces on campus where environmental and climate change research is taking place.

Facilities Open During Environmental Crawl

W.J. McCallion Planetarium

The McCallion Planetarium provides audiences of all backgrounds with a perspective of the Universe and their place within it. Carl Sagan was a famous astronomer, and an advocate for scientific and critical-thinking literacy - much needed abilities when dealing with climate change. In this spirit, join planetarium staff for a special show: "Carl Sagan's Universe".

Visit the planetarium for one of two showings: 1) 11:00am – 12:00pm 2) 1:00pm – 2:00pm

Hydrometeorology & Climatology Lab

The Hydrometeorology & Climatology Lab focuses on understanding the processes that govern the exchange of water, carbon and other gases between the atmosphere and vegetation on the ground. This lab also studies air pollution in urban areas such as the Greater Toronto-Hamilton Region and the impact on human health. Be sure to also visit the lab's own weather station on top of Burke Science Building!

Visit this facility between: 11:00am – 4:00pm

Maps, Data, GIS Centre

The Maps, Data, GIS Centre, located in Mills Library, provides access to the McMaster and broader community to a wide range of maps, geospatial and social science data. As the provider of historical and contemporary geospatial information, it is the perfect place to study how the environment has changed over time.

Visit this facility between: 11:00pm – 4:00pm

Tours will occur from: 1:00pm - 3:00pm

Complex Ecological Systems Lab

This research facility, led by Dr. Jurek Kolasa, researches how changing environments affect the ability of species and ecosystems to survive and thrive. This lab's work is primarily focused on tropical rock pools and temperature lakes. This research facility aims to bring their understanding of nature to improve the performance and sustainability of engineered ecosystems. For example, they are currently testing a prototype growing system that runs on kitchen waste alone!

Visit this facility at the following times: 1:00pm & 3:00pm

Water and Wastewater Treatment

This research facility, led by Dr. Younggy Kim, deals with the major challenges that our cities' wastewater treatment face. This facility explores innovative methods to extract toxic heavy metals from wastewater without using large amounts of energy in the treatment process. In addition, this lab is developing novel methods to develop disinfection techniques to provide safe drinking water to remote and under-privileged communities.

A presentation showcasing this research facility will occur from: 1:00pm – 1:30pm

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Geographical Information Systems (GIS) Laboratory

The GIS Laboratory at McMaster is used by staff and students to explore problems related to both the physical and social environment, but not limited to issues around social environment and health, air quality, flooding and climate change. This state of the art facility has been recognized as an ESRI Development Centre and in 2014, as part of the School of Geography and Earth Science, it was nominated as an ESRI Canada Centre of Excellence.

Visit the GIS lab for 30 minute open-house presentations at the following times:

11:00am, 11:30am, 2:00pm, & 3:00pm

In addition, please feel free to check out one of the following 30 minute talks:

1. 1:30pm – 2:00 – Code Red: Examining the effects of the Social Environment on Average Age of Death in Hamilton
2. 2:30pm – 3:00pm Using GIS and GPS to improve air quality in the City of Hamilton
3. 3:30pm – 4:00pm What is GIS and how can it be used in Environmental Research?

Paleoenvironmental Sciences Lab (ITRAX XRF scanner)

Using microfossils and geochemistry from sediment cores in lakes, estuaries and oceans, the paleoenvironmental sciences lab, led by Dr. Eduard Reinhardt, is able to reconstruct environmental changes that have taken place over thousands of years. In 2014, this research facility, through the Canadian Foundation for Innovation and Ontario Research Fund, acquired an ITRAX XRF core scanner that analyzes sediment cores at the very high resolution of 200 micron spacing (there are 1000 mm in 1 micron!).

Visit this lab & see the ITRAX XRF scanner at the following times: 12:00pm, 2:00pm, and 3:00pm

Mac Water Lab

Drinking water sources are constantly exposed to a variety of substances that can threaten water quality and raise the risk of a disease outbreak. The MacWater Lab led by Dr. Herb E. Schellhorn, surveys microbial communities in source water environments to examine how human and animal inputs influence fecal contamination in source waters. They are also interested in investigating algal blooms to identify the cyanobacteria and environmental factors that drive its formation and persistence in our Great Lakes.

Visit the Mac Water Lab between: 2:00pm – 4:00pm

The Wilson Toxicology Lab

Human drugs are finding their way into our aquatic environments and are impacting aquatic organisms such as fish. The Wilson Toxicology Lab, led by Dr. Joanna Wilson, uses zebrafish, rainbow trout and the invertebrate hydra as model species in laboratory experiments with human drugs to understand how human drugs are impacting fish health, reproduction and development. Their research will help understand the impacts of important environmental stressors on the development and reproduction of important native fish in our Great Lakes Region.

Visit the Wilson Toxicology Lab anytime between: 11:00am – 4:00pm

FloodNet & the McMaster Water Resources and Hydrologic Modelling Lab

At McMaster, current regional, national and international water resources concerns are explored by the Water Resources and Hydrologic Modelling Lab and NSERC Canadian FloodNet. Led by Dr. Paulin Coulibaly, this facility investigates how global climate change is impacting water resources through the development of data-driven methods and advanced hydrologic engineering application tools. Currently this facility is researching how to help Canada prepare to better face the reality of floods.

Visit this lab from: 1:00 pm – 4:00pm

Presentations will occur at: 1:30pm, 2:30pm and 3:30pm

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