



SUSTAINABILITY NETWORK ENVIRONMENT & ECONOMY FELLOWSHIP (SNEEF) PROGRAM

The Sustainability Network Environment & Economy Fellowship Program (SNEEF), between York's Faculty of Environmental Studies and the ENGO community in the GTA, will support Masters in Environmental Studies (MES) graduate students to work with ENGO leaders in the Sustainability Network, providing temporary assistance in the form of for-credit placements as well as an infusion of knowledge about the environment-economy relationship.

These work placements range from several weeks in length if full time to several months if part time. In most cases, students are physically hosted by the supervising ENGOs. To qualify for a student, the ENGO applying must have completed the Economic Literacy Project (ELP) training workshop series. Preference will be given to grad students who are enrolled in or have completed Dr. Peter Victor's course on ecological economics or Eric Miller's course on environmental economics.

Fellowships will be accompanied by a stipend of \$1000 provided by the Sustainability Network and the hosting ENGO. In addition, Fellowship events for these students and their mentors will be organized at the Sustainability Network office within the Centre for Social Innovation in downtown Toronto. These learning and socializing opportunities will provide opportunities to expand their professional networks.

We are happy to announce that the following York FES grad students have been matched with ELP workshop series alumni for internships under the SNEEF program. SNEEF year one consists of six projects, five ENGOs, seven interns and nine ENGO mentors.

1. Toronto Region Conservation Authority (TRCA): Watershed and Regional Urban Sustainability Planning (Watershed Planning)

SNEEF Fellows: Elise Mackie and Natalia dos Santos

A Watershed Plan assesses the biophysical conditions within the watershed and identifies existing or future drivers that may limit watershed health, such as urbanization and climate change. It also provides strategies and management actions to guide conservation authorities, like TRCA, and partner municipalities in managing the watershed through activities, such as protection of natural features through land use planning decisions, mitigation of the impacts of drivers, habitat restoration projects, and water quality remediation projects.

Ecological economics has a role in our future watershed plans as it can provide useful information for weighing the costs and benefits of various land use planning scenarios as well as of management actions to protect or restore natural watershed functions; however, it has not yet been a strong component of TRCA's watershed plans. As TRCA seeks to evolve its



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watershed planning framework, they would like to understand the best approaches for integrating economic analysis into watershed planning so that these can be considered for analyses in support of future watershed plans.

The objectives of this focus area will be to conduct a best practice and methods review examining:

1. How ecological economic analysis has been incorporated into land use planning and decision support in other jurisdictions at different scales of land use planning and related impact analysis, including by municipalities, provincial and state governments, and resource management agencies.
2. How ecological economic analysis has been used to compare land use and management scenarios as a component of watershed planning or similar natural resource management planning activities.

The two Fellows will research and write two summary reports that assess approaches and best practices currently used to integrate ecological economic analysis into watershed planning and regional urban sustainability reporting. The scope of the reports would include approaches to compare and contrast both the financial (e.g. avoided costs) and social benefits (e.g. human health). The final deliverable will be a report summarizing the approaches could potentially be used to integrate ecological economic analysis into watershed planning and recommendations for the best approaches to apply to future watershed plans.

Urban Sustainability Reporting – The Living City Report Card

The Living City Report Card is a regional environmental sustainability report for the Toronto region that tracks six theme areas: carbon, air quality, water, waste, land use, and biodiversity. The current reporting framework focuses on the findings of ongoing monitoring and analysis of data and indicators related to each of these themes undertaken across the GTA. TRCA and partners intend to update the report card framework and develop it in to an ongoing evaluation and reporting tool that assess both actions and outcomes towards key sustainability objectives in the region. Integrating ecological economic analysis will be a component of this update. This objective of this focus area will be to produce a summary report of best practices and methods that could be used to integrate ecological economic analysis in to future versions of The Living City Report, in order to provide a more comprehensive picture of the benefits/costs of action/inaction related to the six current theme areas as well as other potential future theme areas.

The students will be supervised by TRCA staff, including the Manager, Watershed Planning and the Project Manager, Green Infrastructure. They will be mentored by Ryan Ness, Senior Manager Watershed Planning, Reporting & Strategy, who is an ELP workshop graduate.



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2. Federation of Ontario Cottagers Association (FOCA): Assessing Water Quality Impacts on Ontario Waterfront Real Estate Values

SNEEF Fellow: Trisha Cao

Building on considerable anecdotal information, and a number of quantitative and qualitative studies from a number of North American jurisdictions, FOCA seeks to compile an Ontario-centric perspective to characterize "the impact of lake water quality on proximate property values". This as part of their ongoing effort to articulate the fiscal aspects of protecting and retaining environmental (water) quality. Clearly communicating the results in an accessible manner is one of the goals of this undertaking.

This work will involve a literature review and synthesis of existing work from Minnesota, similar work from Maine, a Canada Water Network report on valuing water quality changes, and reports by Clapper and Caudill. The student will have access to waterfront property assessment value (MPAC) listed by Ontario municipality, information on water clarity and phosphorus from the Lake Partner Program, and some emerging geospatial work recently undertaken by Ryerson. If possible, some specific Ontario cases studies might be investigated and used as proxies, such as lake-specific financial impacts from cyanobacteria impacts on inland lakes such as Three Mile Lake or in the Algoma region.

FOCA's Executive Director Terry Rees, and Program Manager Frances Wilbur will work alongside the student at all stages of the placement.

3. Friends of the Greenbelt Foundation: An Economic Evaluation of Rural Green Infrastructure

SNEEF Fellow: Sohrab Pathan

The Friends of the Greenbelt Foundation is a charitable grant-making organization working to help keep farmers successful, strengthen local economies, and protect and grow natural features. Green infrastructure (GI) can contribute to all these outcomes. The Foundation is exploring this potential through a series of projects focused on GI in rural areas.

This project will provide an economic evaluation of Green Infrastructure for a rural settlement within Ontario's Greenbelt. It will seek to answer the question, "What are the financial opportunities and barriers associated with implementing a Green Infrastructure Master Plan for Mt Albert?" The work will build upon a previous project completed by a studio group from the University of Toronto that developed the GI Master Plan. The project will make a significant contribution to supporting rural municipalities take advantage of the benefits of Green Infrastructure.



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Initial project objectives relate to the conceptual GI Master Plan for Mt Albert and include:

- Evaluate the costs for GI installation
- Evaluate the maintenance costs for the designated GI
- Compare GI maintenance costs with existing infrastructure budgets (for comparable services)
- Assess the non-market ecological goods and services that GI would provide

Research is required to validate cost estimates provided in the literature for installation and maintenance of the types of GI identified in the master plan. Additional research will also be required into municipal financing and the 'down-stream' costs associated with services replaced by GI, e.g. water quality enhancements or erosion control. The results of the economic analysis will be set out in a report and presentation to Foundation staff at the end of the placement.

The placement supervisor is Tom Bowers, Research Manager and graduate of the ELP training.

4. Freshwater Future: Economic Policy Analysis of Cash Crops

SNEEF Fellow: Brianne Meikle

Freshwater Future hopes to secure a student to investigate the government programs and policies (federal and provincial) that affect the price of cash crops in Ontario? This could include any financial benefits that the governments provide to the agricultural industry (e.g., direct financial supports, tax rebates and other financial incentives) to promote the growing of cash crops.

The price of cash crops - especially corn and soy - is a significant factor in the competitiveness and viability of the agricultural sector globally, and especially in Ontario. In Ontario, the relatively high price of corn and soy has encouraged farmers to maximize output of these crops, which is resulting in a number of environmentally destructive practices including:

- Encroaching on or using marginally productive lands, including wetlands - often these lands are environmentally vulnerable
- Using excess fertilizer in hopes of maximizing output. Portions of the unused fertilizer (which includes phosphorus) runs off fields, enters watercourses and makes its way into lakes. This is especially problematic in areas such as western Lake Erie which is experiencing toxic algal blooms because of high levels of phosphorus entering the lake from tributary rivers, primarily from agricultural sources
- Removal of buffer strips to increase land available for production. Buffer strips offer important habitat, and capture nutrients before they runoff into watercourses
- Removal of land from conservation programs (such as ALUS) despite financial benefits offered for conservation



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Once we understand if and how provincial or federal policies are influencing the price of cash crops (namely corn and soy) in Ontario, we can investigate how the policies could be altered or removed to alleviate negative environmental externalities, how they may be adapted to encourage more sustainable practices, or how they may be shifted to support production of less environmentally damaging crops.

This information could also be used in public communications. Taxpayer dollars should not be encouraging unsustainable agricultural practices in the province (even indirectly). For instance - are we inadvertently encouraging the growth of corn for sugary, unhealthy foods over fresh produce? Are financial subsidies encouraging poor soil management and future capacity of the soil to grow food? This could also help us engage additional partners in our campaign (healthy food advocates). Information from this analysis could be used to justify policies that do not incentivize or support nutrient polluting behaviors.

The student will research similar studies done in the past and determine methodology e.g. fossil fuel subsidy research done by IISD, agricultural subsidy research in other jurisdictions (US, Europe). The student will also need to identify major government programs and policies that affect the price of cash crops in Ontario (e.g., crop insurance): quantify value of the subsidies, write a report that summarizes methodology, findings and includes summaries of raw data, and, work with the project supervisors to develop recommendations on how policies should change.

Nancy Goucher, Manager of Partnerships at Freshwater Future will be the lead supervisor of the student. However, the student will also have access to Tony Maas (Manager of Strategies) and Jill Ryan (Executive Director).

5. Toronto Region Conservation Authority (TRCA): Environmental Planning Intern

SNEEF Fellow: Warren Dusek

The intern will work with TRCA's Environmental Assessment (EA) Planning team, part of the Planning, Greenspace and Communications division. The primary theme will involve valuing natural capital and the economics of sustainability. Infrastructure projects, often being linear in nature, come with large disturbance footprints and pass through multiple jurisdictions, each with their own guidelines towards compensation. The result is a patchwork of compensation guidelines to follow, and adhering to the most stringent one to appease all parties is not always possible. TRCA is seeking a better way to evaluate the true natural value of, and adequate compensation for, these projects. The resultant model should go beyond traditional economic costs.



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Currently, TRCA has draft compensation protocol published on its web page, which is now receiving comment from our member municipalities. The intern will help quantify project specific compensation required for the infrastructure projects being built in TRCA's jurisdiction. The intern will advise on how ecological economics can better quantify losses and influence compensation protocols, and potentially, land use planning. The common question will be, how much is natural capital worth? The intern may undertake cost/benefit analyses, with an end goal of formulating an ecosystem approach to valuation. For example, if a natural feature is avoided, what are the benefits and costs associated with that decision? Literature reviews of scholarly journal articles, as well as liaising with TRCA staff, will comprise a large part of this assignment. The end goal is to produce a tangible model TRCA can use to influence compensation, which will be a great asset to TRCA, particularly as the compensation protocol is finalized.

The student will be supervised by TRCA staff, including Daniel Brent, Planner, Environmental Assessment Planning, and Beth Williston, Associate Director, Environmental Assessment Planning.

6. Ontario Nature: Protected Areas Intern

SNEEF Fellow: Andres Jimenez

The aim of this work placement is to build the economic case for government investment in protected areas in Ontario. The intern will assemble information on the economic benefits provided by protected areas, including a summary of the goods and services they provide and an analysis of the reasons why governments would choose/have chosen to invest in them. This research will support efforts by Ontario Nature and other conservation organizations who are calling on the Ontario government to reinvest in protected areas and commit to achieving the international Aichi target 11, endorsed by Canada and by the Ontario Biodiversity Council: "By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes."

Tasks:

- Research and prepare written summary of the economic benefits of protected areas. Include examples relevant to Ontario.
- Research and summarize reasons why governments would choose/have chosen to invest in protected areas.
- Research and summarize Ontario's investments in the establishment of new protected areas over the past 15 years.



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- Apply ecological economics concepts to an analysis of potential opportunities to expand Ontario's protected areas systems.
- Assist with preparation of materials to support communications of research results (e.g., point-form summaries, Powerpoint presentation, a blog, compilation of supporting images, etc.)

Dr. Anne Bell, Ontario Nature's director of conservation and education, will supervise and mentor the student. Joshua Wise, manager of Ontario Nature's Greenway Program and also an ELP workshop grad, will assist with supervision and mentorship.