



DEPARTMENT  
OF GEOGRAPHY  
**RESEARCH  
REPORT**

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GRADUATE STUDENT REPORT

**EMERGING  
TALENT**

*We live in and  
focus on Canadian,  
northern, and coastal  
environments*

# Message from the Department of Geography

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This report is the third in the series highlighting the breadth, scope, dynamics, and significance of research conducted by the Geography department at Memorial University. Geography focuses on people, environments, and their interactions from local to global scales, integrating numerous physical and social sciences. We study distributions and relationships among all natural and human features of Earth: climate, landscapes, populations, resources, and communities. Key questions that interest us include: Are we using resources sustainably? What are the impacts of changing environments on communities? How should we interpret the spatial distribution of economic, political and social activity? Memorial University of Newfoundland's Geographers are planners, researchers, educators, and decision makers focused on questions relevant to all life on Earth.

This year's report highlights work done in the five research clusters of Climate & Environmental Change; Globalization, Economy, & Resources; Health & Well-being; Society, Knowledge, & Values; and Sustainable Communities & Regions. Sample profiles of ten of the department's faculty and graduate student researchers are illustrated here. Our departmental ([www.mun.ca/geog](http://www.mun.ca/geog)) and Geography Research ([www.mungeographyresearch.org](http://www.mungeographyresearch.org)) websites provide constantly updated information on all our research efforts. We welcome researchers and visitors from around the globe, in our continuing efforts to highlight human-environment relationships and benefit communities and society worldwide.

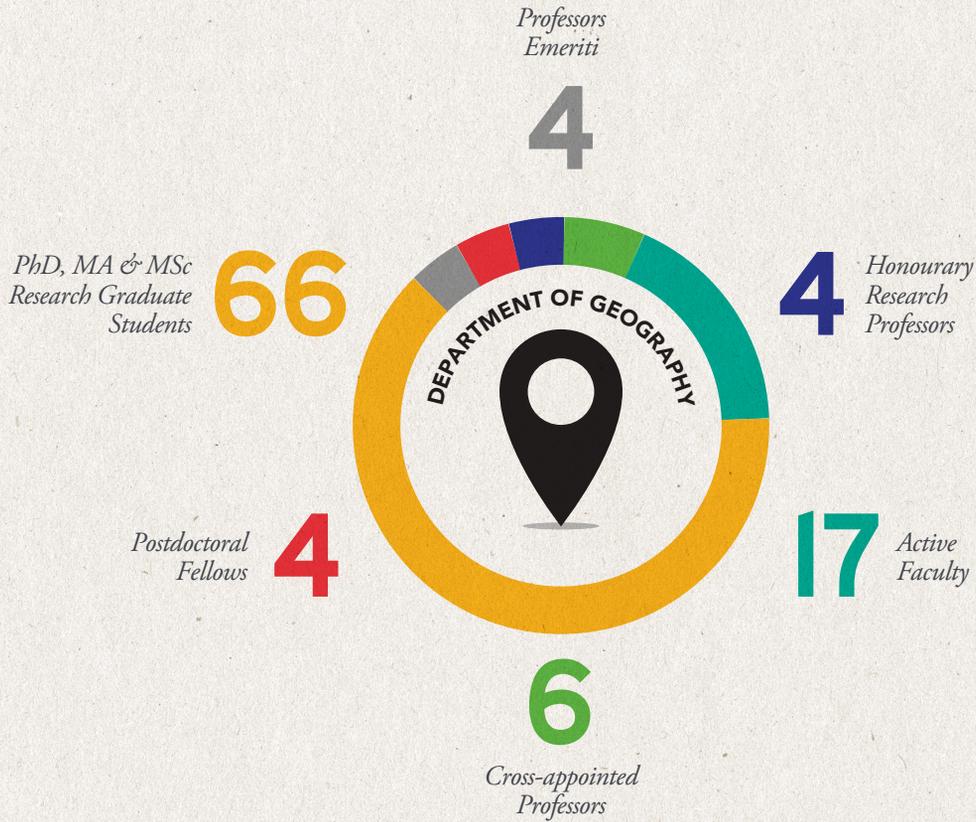
Cold Ocean Arctic Science, Technology, and Society (COASTS) is a major research focus of our department. During Geography Awareness Week in November 2015, undergraduate, graduate, and faculty researchers discussed their work with visitors, friends, and colleagues while standing on the giant Arctic floor map.

Support from the Scholarship in the Arts initiative to produce this report is gratefully acknowledged.

Department of Geography Staff  
*Chris Hammond*

*Geography focuses on people, environments, and their interactions from local to global scales, integrating numerous physical and social sciences.*

THE DEPARTMENT OF GEOGRAPHY INCLUDES:



SINCE OUR LAST ANNUAL RESEARCH REPORT, WE HAVE:

PRODUCED MORE THAN



MADE



HELD



BEEN INVOLVED IN



# Research

Our areas of interest focus on northern and arctic research, coastal governance, fisheries communities and management issues, coastal, boreal, and northern landscape science, waste management, and evolving urban communities.

## OUR WORK IS FOCUSED IN FIVE CLUSTERS:



### Globalization, Economy, & Resources

Examples of ongoing research projects include study of Community and small-scale fisheries; Adaptation and Industrial Development in northern and Arctic Canada; International trade in Rubbish Electronics; and community rights to resources in Atlantic and Arctic Canada.



### Sustainable Communities & Regions

Examples of ongoing research projects include Building sustainable communities in the coastal subarctic; Complexity in Multiple-Use Coastal Areas; Value Chain Analysis of locally produced food; and Economic Impact Analysis developed for Atlantic Canada.



### Climate & Environmental Change

Examples of ongoing research projects include SMARTIce: Integration of Inuit Quajimajatuqangit in sea-ice monitoring and forecasting; Global Treeline Range Expansion and impacts of fire in boreal forests; Habitat and Environmental Impacts on Cold-water Corals; and Forecasting Grand Banks Fog.



### Society, Knowledge, & Values

Examples of ongoing research projects include analysis of Human dimensions in wildlife resources in boreal and northern regions; GIS Analysis of marine habitats and Marine Protected areas; study of Anti-immigrant sentiment; and Place-Based Science: monitoring marine plastics in extreme environments.



### Health & Well-Being

Examples of ongoing research projects include analysis of Anthropocene Impacts in marine and coastal regions, Community-Based Economic Development in Atlantic Canada, development of a Digital Epidemiology Chronic Disease Tool; and investigating relationships among Science, Technology, and Society.

FACULTY RESEARCH NOTES

# FROM THE FIELD

*MUN Geographers interact with people and environments throughout the world, both land and sea.*

# Achieving Conservation through Working with People

*Dr. Alistair Bath*

## CLUSTERS



Globalization,  
Economy &  
Resources



Society, Knowledge  
& Values



Dr. Alistair Bath in Kenya with Masai lion trackers

Much HD  
research involves  
large carnivores



Human Dimensions (HD) in wildlife resource management research explores human-wildlife interactions by understanding public attitudes, beliefs, values, behavioral intentions and behaviors. Our research helps to understand attitudes, identify beliefs and explore specific weaknesses in knowledge, leading to targeted messaging and more effective educational and communication campaigns. HD study can focus on identifying types of conflict, the first step toward conflict resolution. We explore behavioral intentions to support or oppose certain management actions, thus allowing managers to better understand viewpoints and levels of support. We study the motivations affecting behavior, helping to predict actual behavior.

I have focused much of my research on large carnivores, in India (tigers), Brazil (jaguars and pumas), and Europe (wolves, brown bears, and Eurasian lynx). Other work focuses on wood bison in Alaska and Germany, and moose, coyote, and pine marten in Newfoundland and Labrador.

In Canada's north, I have listened to our First Nations discuss caribou, disease in wood bison, and issues of creating national parks. Our goal is to better understand and address issues facing people and find solutions. Wildlife can be inspirations of beauty



Alistair Bath

and wilderness, cause damage to property, kill livestock, and in rare cases kill or injure people. HD research documents human perceptions and risk tolerance towards wildlife. I've been working with residents towards creating an international peace park in Armenia, Georgia, and Turkey, gaining consensus between Israeli and Palestinian authorities on issues of urban biodiversity in and around Jerusalem, and creating a Pan-Parks initiative for Europe.

HD research provides managers with insights, but doesn't actively resolve challenges. Applied HD works toward solutions. While there is unanimous agreement that key interest groups need to be engaged, there are few examples where conservation managers are truly willing to take the time to effectively engage groups, gain trust and build management plans through consensus. Too often, public consultation involves a single meeting to discuss a species management plan that has already been unilaterally created by the wildlife agency. It should not be a surprise when such plans are not successfully implemented and challenges continue to occur. Building a management plan without preconceptions, gaining a common vision, and agreeing on principles, biological data, and threats requires a process. Our applied human dimension facilitated workshop approach has been implemented successfully to achieve 100% consensus on management plans in Croatia and Bulgaria, and is currently being employed in Slovakia, and in Canada, as First Nations and various governments strive to understand and address the key issues facing the Bathurst caribou herd.

# Alternatives to Managerial Relationships in Fisheries

Dr. Dean Bavington



Round Harbour, NL



Fisheries communities involve much more than fish

## CLUSTERS



Health & Wellbeing



Society, Knowledge & Values

My research draws on theoretical and empirical material from environmental, historical, economic and cultural geography, critical management studies, political ecology, anthropology, and history. I am focused on understanding how, why, and when scientific management entered into cod fisheries in Newfoundland and Labrador and other fisheries around the world; the implications for various actors (human and nonhuman) of managerial interventions; and alternatives to managerial relationships in the face of unprecedented human-induced environmental change.

*Managed Annihilation* (UBC Press 2010) explores the history of managerial interventions into the Newfoundland and Labrador cod fisheries. It traces the history of when, why and how the cod fisheries became constructed as a problem amenable to managerial solutions. I describe how representations of the fishery as a manageable object were constructed from the knowledge of fisheries scientists, and detail the restructuring of Canadian fisheries management in the wake of the dramatic collapse of cod stocks and the subsequent moratorium



Dean Bavington

on cod fishing in 1992. Current research builds on themes and questions raised in the book. My students, other co-researchers and I continue to explore the rise of managerial thinking in marine fisheries. We are now focused on aquaculture development along with fresh water fisheries, angling and recreational fisheries.

*Subsistence Under Capitalism* (McGill-Queen's 2016), with James Murton and Carly Dokis, presents research into subsistence economies and ecologies and vernacular environmental histories, focusing on the study of food provisioning and production. It brings together essays from diverse disciplines to reflect on the meaning of subsistence in theory and in practice, in historical and contemporary contexts, in Canada and beyond. Local food systems have been relegated to the shadows by the drive to establish and expand capitalist markets. Considering fishing, farming, and other forms of subsistence provisioning, we have documented the persistence of these practices despite government policies that actively seek to subsume them. Presenting viable alternatives to capitalist production and exchange, our work explains the critical interplay between politics, local provisioning, and the ultimate survival of society and lives worth living on a rapidly transforming earth.

# Without People, Hazards are Mere Phenomena

Dr. Norm Catto



Coastal Erosion results from increased wave and storm activity



Flooding is a concern in many NL communities

CLUSTERS

Climate & Environmental Change

Health & Wellbeing

Atlantic Canada is commonly perceived by both its residents and other people to have relatively few natural hazards. The reality is a little different: hurricanes, extra-tropical transitions (such as Igor), late autumn and winter storms, ice storms, extremes of heat and cold, droughts, blizzards, slope failures, coastal erosion, avalanches, tornadoes, earthquakes, and tsunami have all affected our region. Excluding Igor, estimated direct economic costs resulting from natural hazards in NL between 2000 and 2015 exceeded \$180 million, with indirect costs in excess of \$750 million. The estimated financial impact of Igor exceeded the total for all other events since 2000.



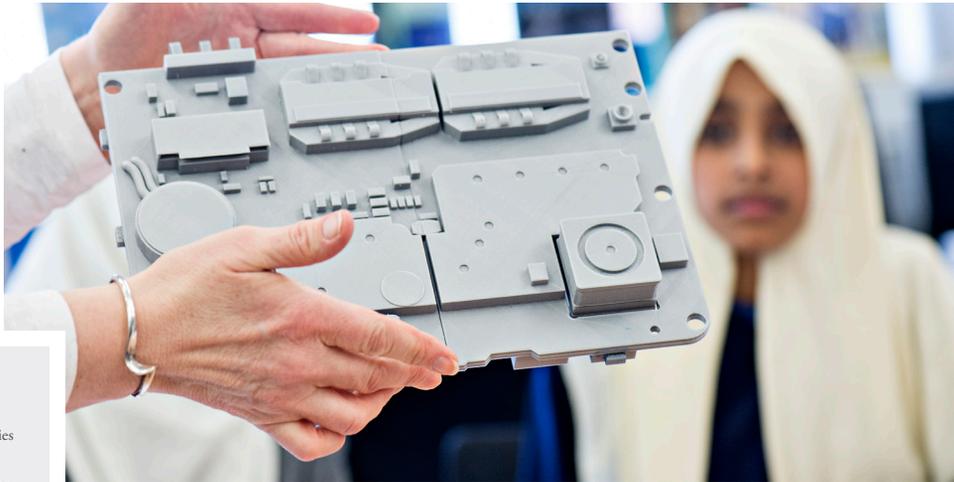
Norm Catto

The perception that we in Atlantic Canada are relatively untouched by natural hazards thus does not accord with reality. This perception, however, has consequences in terms of our identification and assessment of, preparedness for, and effective response to natural hazards, both those commonly anticipated (such as hurricanes and winter storms) and those that are less frequent (such as tsunami).

Study of natural hazards involves a mixture of both 'scientific and technical' knowledge (such as the dynamics of river flow) and 'cultural and socio-economic' concepts (such as the impacts of flooding on communities, or suggested measures to reduce the impacts). If there are no people involved, or if an event occurs without negatively affecting or inconveniencing anyone, then there is no hazard.

# The Future is Circular

*Dr. Nick Lynch*



Planning for the Circular Economy

The future is circular. That's the message at the heart of the European resource efficiency agenda, which many simply call the 'Circular Economy'. Closing manufacturing loops, extending product life cycles, virtualizing services, and encouraging product sharing and repairing represent just the tip of the Circular Economy iceberg.

At face value, such programmes are good news considering the growing concerns about resource (in)security, the over-use of virgin materials in production, and prevailing linear production-consumption-waste processes. Even with some successes in improving recycling uptake as well gains in energy efficiency measures, demands for resources are set to continue increasing into this century alongside rising global population, increased urbanisation and proliferating consumerism. As such, ideas of the Circular Economy are arguably necessary if we are to circumvent what some see as a looming resource and ecological crisis. Invariably, such large-scale transformative frameworks raise many questions, including: what constitutes an optimal Circular Economy; what form could and should circular institutions, norms and shared practices take; and what processes values and actors will get us there?

My work probes these key questions through an exploration of three Circular Economy projects in Western Europe: the Old Oak and Park Royal neighbourhood in London, the redevelopment of Buiksloterham in Northern Amsterdam, and the revitalization of neighbourhoods around the Rotterdam port area. Located on



Nick Lynch

post-industrial sites, these 'living labs' are testing neighbourhood and regional circularity through such things as integrated closed loop domestic waste systems, sharing and repair cafes, and even Do-It-Yourself (DIY) housing. These three sites offer the most advanced cases of how circular thinking is not only being incorporated into local planning initiatives but also how it potentially offers a wider paradigm shift in neighbourhood life and regional economies.

I believe that key aspects still need to be considered: "most research in the field thus far has focused on economic, technical and engineering dimensions of building a circular economy and in doing so are concerned with technical 'problem solving' and economic optimizations that, while clearly important, typically fail to acknowledge the social, cultural and political contexts associated with transitions to the Circular Economy. We need to explore how these new technologies transform or challenge existing neighbourhood life, or, more fundamentally, if the Circular Economy and its largely technological approaches lead to a decoupling of environmental degradation from economic growth as many of its proponents argue.

# Immigration and the Mid-sized City

Dr. Yolande Pottie-Sherman



CLUSTERS

- Sustainable Communities & Regions
- Society, Knowledge & Values

Geographical studies involving refugees are of increasing importance worldwide

While most immigrants to Canada and the United States continue to settle in the major gateways, a rising share are moving to mid-sized destinations. As municipal planners in smaller, post-industrial cities seek new strategies in job creation, their growth coalitions are pointing to immigration as the key to reviving dormant entrepreneurial spirits. This trend is evident in a string of new initiatives aimed at encouraging immigrants to settle in the 'Rust Belt' region, most of which do not otherwise attract significant numbers of newcomers. These welcoming projects are the focus of new SSHRC-funded research that places immigration at the foreground of cross-national comparative analysis of urban change in the Rust Belt.

Mid-sized cities face particular challenges in attracting and retaining immigrants due to limited job opportunities, services, and housing. These challenges can also serve as barriers to the social and economic integration of immigrants in smaller urban centres. In the context of austerity urbanism, cities are increasingly relying on superficial economic revitalization initiatives (such as diversity branding), without the corresponding material resources to see them through. The emergence of immigration-centred urban growth coalitions is a recent development in urban austerity responses in the Rust Belt, yet to date, there has been no systematic

study of the policy model that examines their underlying logic and their impact on immigrants.

My goal is to trace the interurban evolution of this policy model by comparing two recent initiatives to attract and retain immigrants in Ohio and Ontario: the 'Global Cleveland' and 'Global Hamilton' initiatives. These are very different contexts. Deindustrialization had profound but highly unequal effects on the urban social geography of cities in the Canadian and U.S. Rust



Yolande Pottie-Sherman

Belt. Hamilton appears to be on the eve of economic resurgence, while Cleveland reels from the 2008 subprime mortgage crisis. Yet, analogous multi-sector, pro-immigration growth coalitions have emerged in both of these former steel cities. What factors lead cities to adopt immigrant attraction initiatives? How are these initiatives reconstructing the identities of Rust Belt cities and disinvested neighbourhoods? With what impact on the socio-economic inclusion of newcomers in these contexts?

# Catch-on to the Arctic

*Dr. Michelle Slaney*



A snowmobile parade in Makkovik to celebrate the 100<sup>th</sup> day of the school year

## CLUSTERS



Sustainable  
Communities  
& Regions



Climate &  
Environmental  
Change

As the Arctic Regional Representative of Future Earth Coasts and Coordinator of an international knowledge network, I want to expand our reach so that even more communities can contribute to and benefit from being part of a collaborative community that is driving sustainability in northern coastal communities. The Arctic region is under increasing cultural, socio-economic, environmental and climatic pressures, which are having profound impacts on health, well-being, food security, demographics, safe housing, community services, and cultural vitality. Communities across the entire Arctic region share common challenges, so why not also share solutions and experiences with addressing them? What lessons can be learned from resilient northern coastal communities that have overcome rapid change and challenges, and how can these 'bright spots' and critical knowledge be shared and exchanged with other communities that continue to struggle with similar issues in the circumpolar region?



Michelle Slaney

CACCON ("Catch-on"), the Circum-Arctic Coastal Communities Knowledge Network, is a pan-Arctic network sharing information, ideas and processes supporting adaptation and strategies



for moving toward ideal futures. It is a network of communities, researchers, community groups, Traditional Knowledge holders, and decision makers, at various governance levels.

Our philosophy and approach to research is collaborative and holistic (recognizing the interdependence of issues), and enhances local empowerment and sustainability through focusing on community-identified priorities and issues of importance, producing solutions for adaptive planning and sustainable development. Inuit Knowledge is an essential component of the work, shaped by Inuit values. Our aim is to facilitate exchange and enhance community knowledge capacity and inter-regional, peer-to-peer cooperation on issues of common interest to circumpolar coastal communities. A research agenda that is co-designed, co-produced, and pursued with the goal of finding solutions and creating knowledge for effective decision-making can be a powerful tool for northern sustainability and thriving Arctic communities.

CACCON's activities support the Global Coastal Futures initiative of Future Earth Coasts. Our solutions-oriented, trans-disciplinary, co-design approach to the challenges facing coastal communities embodies the core philosophy of Future Earth and is relevant globally.

## Changing Environments on the Arctic Ocean Floor

*Benjamin Misiuk*

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Arctic seabed habitats are undergoing rapid change due to human impacts and changing climate, but we have precious little information on the current and past states of these ecosystems. By applying the most recent marine mapping techniques, seabed habitats can be mapped to a high degree of accuracy. I am working on mapping Arctic seabed habitats and refining statistical techniques used to predict sediment distributions and bottom conditions in unsampled locations. This information will be important to marine conservation planning and baseline assessment of ecosystems amidst changing Arctic marine conditions.

## GRADUATE STUDENT REPORT

*Here's some information on the  
research being undertaken by our  
graduate students in Geography*

# Emerging Talent

## Mapping Risk Perceptions of Mining Pollution in Yellowknife, NT

*Amanda DeGray*

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Twentieth-century gold mining activities in Yellowknife, NT had profound effects on the landscape and on the Yellowknife's Dene First Nation's (YKDFN) traditional land-use activities. Giant Mine, in particular, left a toxic legacy of 237,000 tonnes of buried arsenic trioxide and widespread environmental contamination. Mining pollution contaminated and fragmented many sites traditionally used by the YKDFN for hunting, fishing, collecting drinking water, and harvesting medicinal plants. As a way of addressing the unequal distribution of environmental harms, my research is documenting the ways in which historic mining pollution changed Dene traditional land-use activities around Yellowknife Bay. In particular, my research is documenting how mining contamination is perceived and experienced in the everyday lives of the YKDFN.

# Mining Impacts in the North

*Caitlyn Beckett*



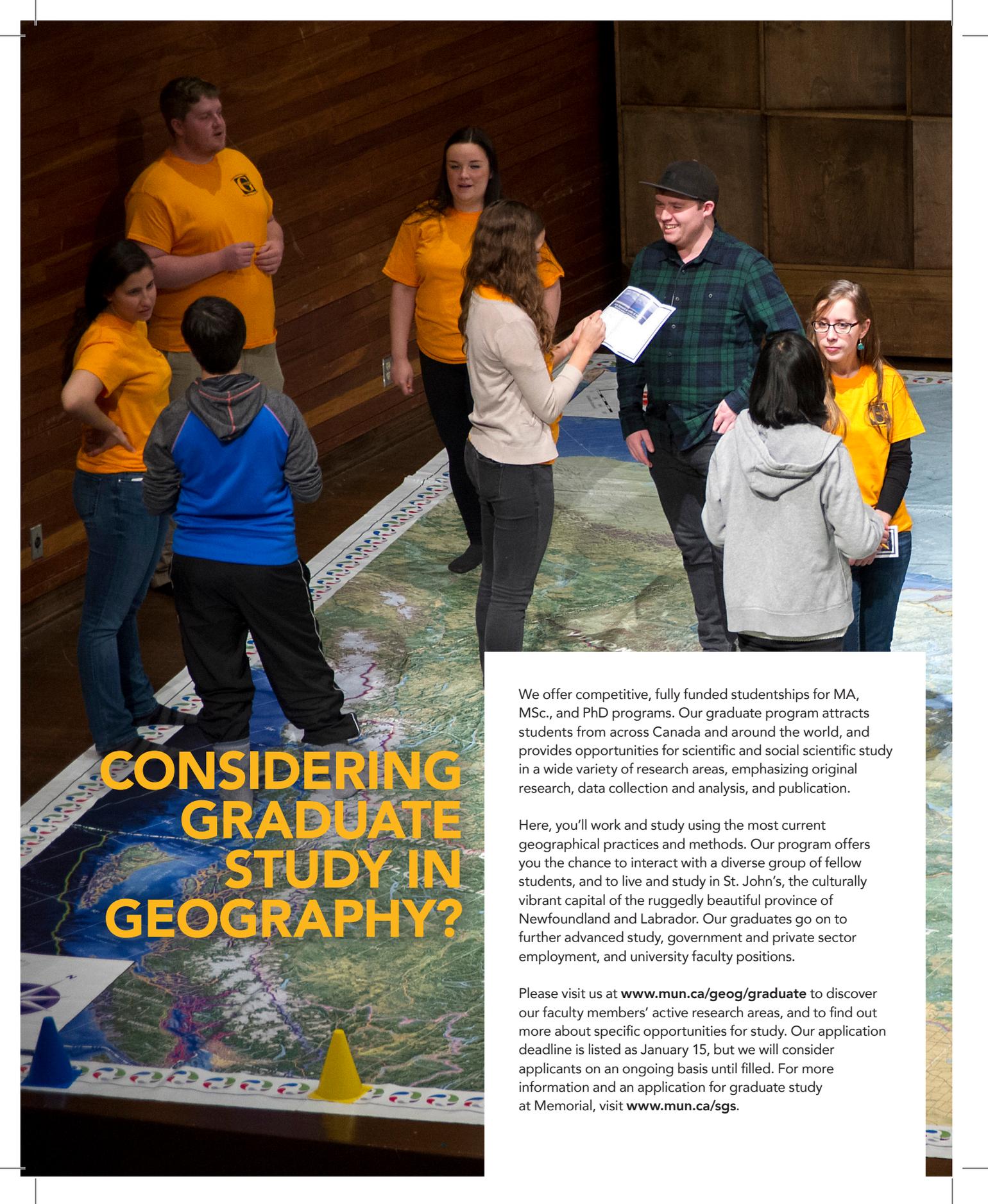
Substantial research has analyzed the social, economic and environmental effects of mines in northern Canada during their operational phases. After closure these mines do not simply disappear and without remediation they can bring about persistent environmental problems. Remediation itself can be dangerous due to the permanent containment of toxic materials and the mobilization of pollutants. Research on mine remediation has focused on its scientific and economic aspects; little is known about remediation as a political, social and environmental force across the north. Recognizing this, my research will ask: What are the wider social costs and benefits of remediation? Can local Aboriginal historical and ecological knowledge be used to assess and manage remediation plans? How can approaches to mine remediation emphasize community remediation in addition to site containment? Through online archival study, literature reviews, key informant interviews and participant observation, I will use the Giant Mine in Yellowknife, NWT as a case study in comparison to other mine remediation sites across the North such as the Faro, Colomac and Port Radium mines. Using these cases, my research will investigate how effectively assessments of these mines have included local knowledge and community concerns in remediation planning; this is critical for understanding the broader issues of resource development and environmental justice across northern Canada. This research will benefit Aboriginal partner organizations and will contribute to a broader understanding of the social dimensions of mine remediation and the development of best practices for community engagement during mine closure.

# E-waste from Israel to Palestine

*John-Michael Davis*



Can imported electronic waste (e-waste) improve livelihoods in marginalized populations? John-Michael's research encounters this question in an informal e-waste hub in South-West Hebron, Palestine that has imported and processed the bulk of Israeli e-waste for over two decades. Through community-based participatory research, John-Michael aims to better understand local perceptions of imported e-waste practices, the complexities of income generation vs. environmental degradation, and imagine new ways to organize this cross-border economy. Built into his research is a strong advocacy for change combining top-down policy reforms and regulations on both sides of the Palestinian-Israeli border with bottom-up creative business models that can provide continued opportunities for much needed livelihoods, while reducing damaging environmental and health consequences resulting from crude e-waste dismantling processes.



# CONSIDERING GRADUATE STUDY IN GEOGRAPHY?

We offer competitive, fully funded studentships for MA, MSc., and PhD programs. Our graduate program attracts students from across Canada and around the world, and provides opportunities for scientific and social scientific study in a wide variety of research areas, emphasizing original research, data collection and analysis, and publication.

Here, you'll work and study using the most current geographical practices and methods. Our program offers you the chance to interact with a diverse group of fellow students, and to live and study in St. John's, the culturally vibrant capital of the ruggedly beautiful province of Newfoundland and Labrador. Our graduates go on to further advanced study, government and private sector employment, and university faculty positions.

Please visit us at [www.mun.ca/geog/graduate](http://www.mun.ca/geog/graduate) to discover our faculty members' active research areas, and to find out more about specific opportunities for study. Our application deadline is listed as January 15, but we will consider applicants on an ongoing basis until filled. For more information and an application for graduate study at Memorial, visit [www.mun.ca/sgs](http://www.mun.ca/sgs).





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