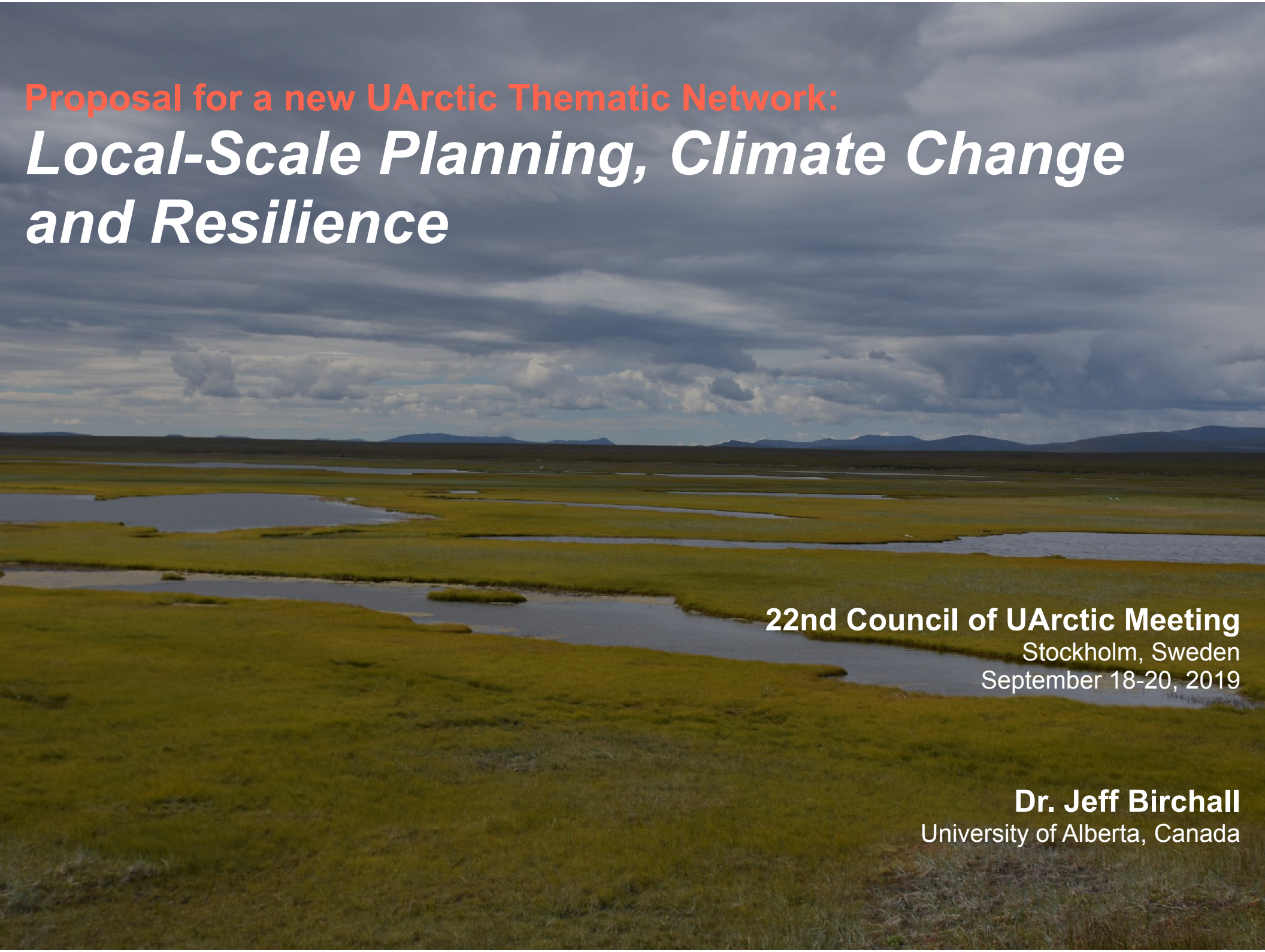


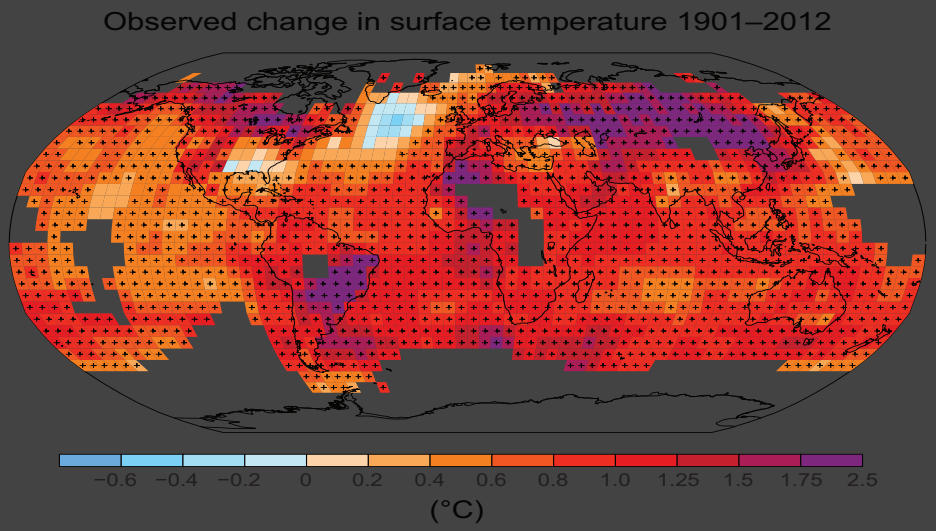
Proposal for a new UArctic Thematic Network:

Local-Scale Planning, Climate Change and Resilience

22nd Council of UArctic Meeting
Stockholm, Sweden
September 18-20, 2019

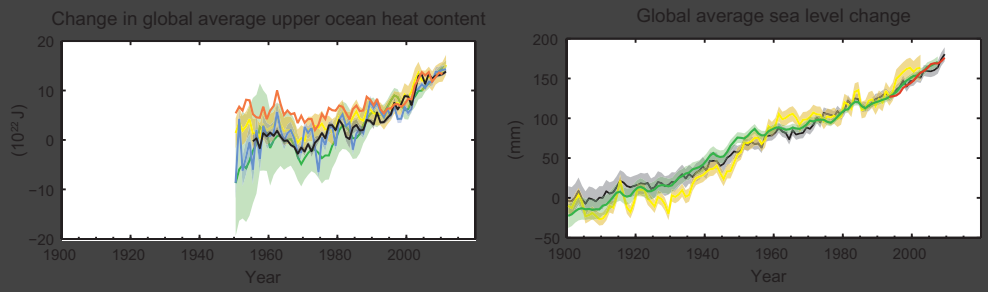
Dr. Jeff Birchall
University of Alberta, Canada

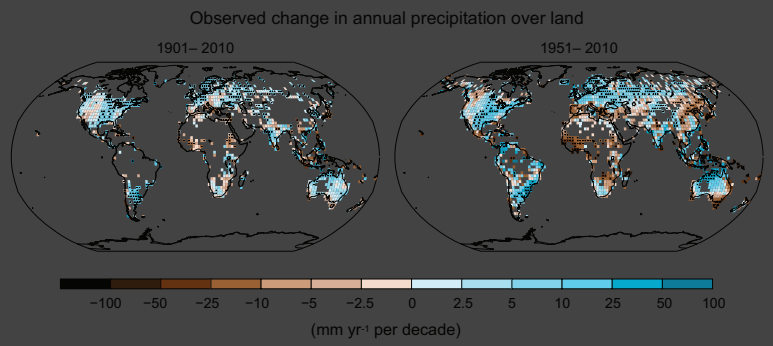
Global Climate Change Impacts



With warming temperatures observed around the globe…

- Ocean heat content has increased
- Rate of mean sea level rise has increased
- Heatwaves and wildfire have become more intense
- Glacial volume has decreased
- Precipitation has become more variable
- Weather extremes more frequent





(IPCC 2013; Vogel et al. 2019)

Climate Change Impacts in the Arctic

Impacts are even more pronounced in the Arctic, where temperatures are rising 2x the global rate…

As a result:

- Permafrost is more active
  = increased maintenance for buildings + utilities
- Sea-ice extent is reduced in the fall/ winter - resulting in larger ocean fetch and weaker shore fast ice
  = increased vulnerability to erosion + flooding
- Storm season has lengthened
  = increased exposure of assets + infrastructure
- Rain on snow events are occurring more frequently
  = increased occurrence of overland flooding

(IPCC 2013; Birchall & Bonnett 2019)

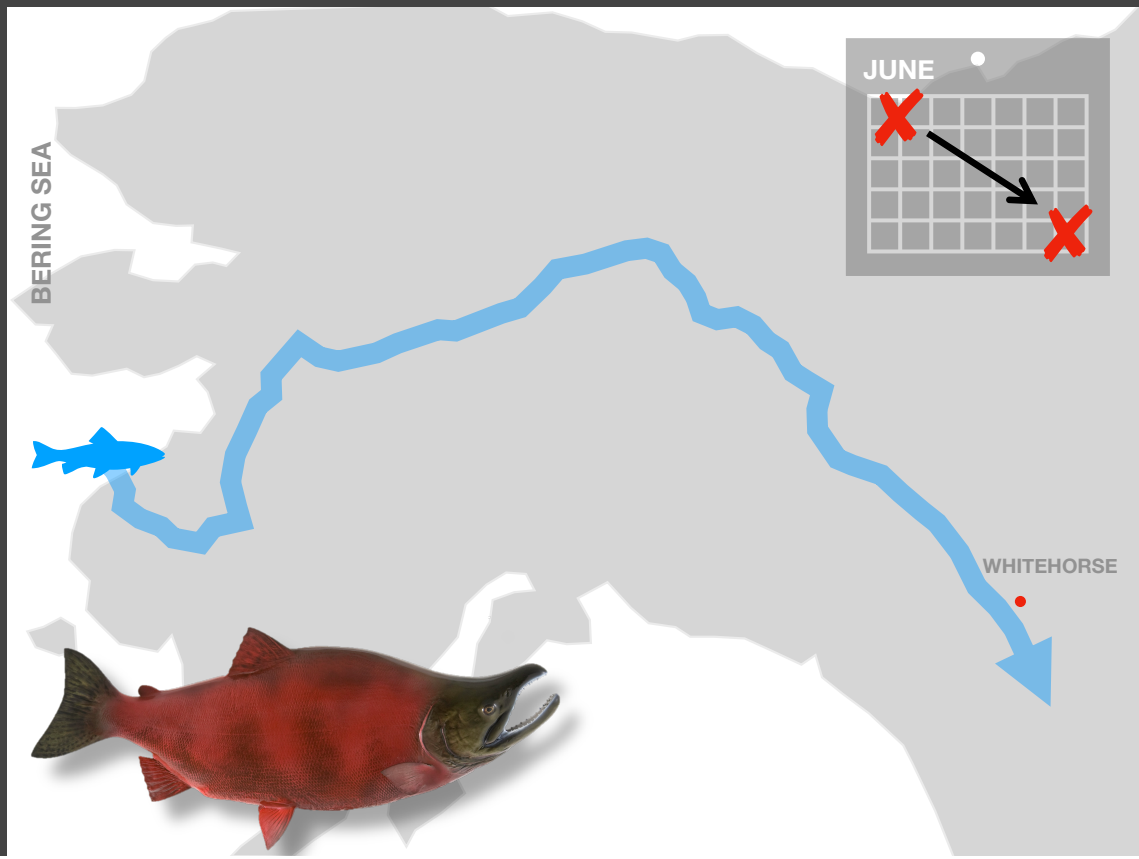
Cont.

Higher temperatures also mean…

- Vegetation zones are shifting north and up
- Wildlife populations are experiencing new challenges/ competition

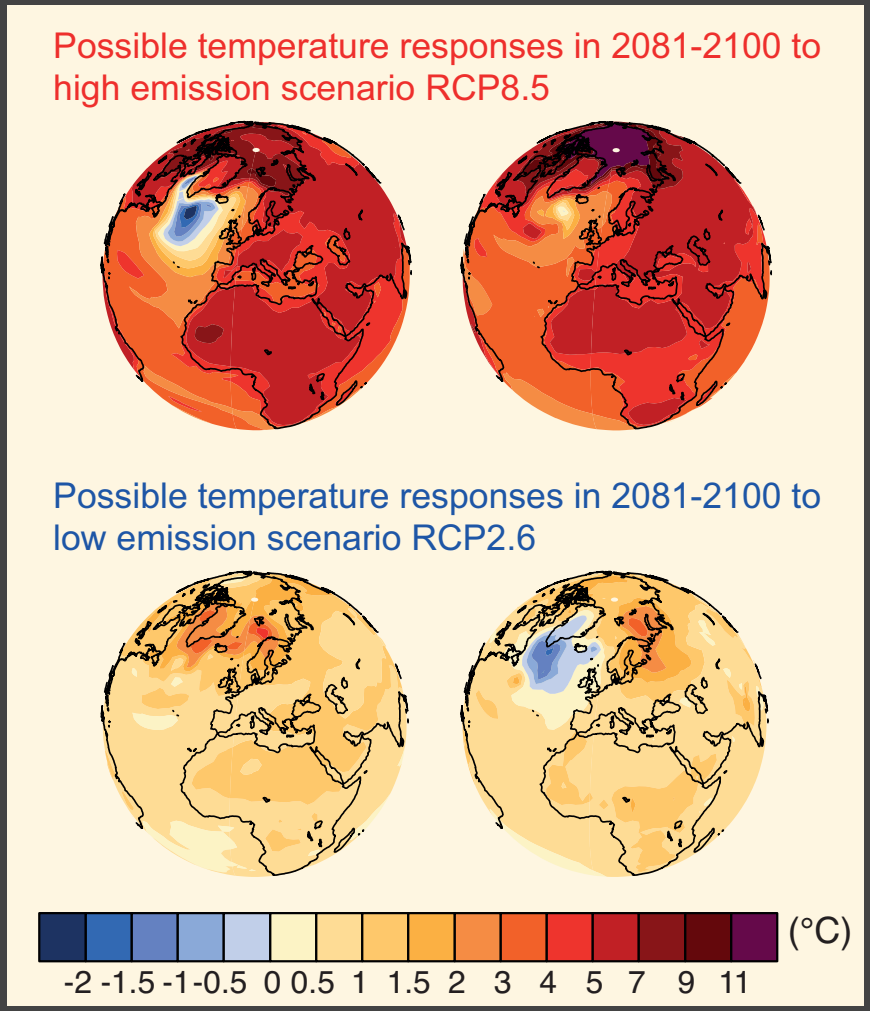
Influence on harvesting and related practices

Impacts on cultural and social wellbeing



Local Scale Planning

Arctic communities are used to environmental change…



(IPCC 2013; Arctic Council 2016)

However, with rising temperatures, the rate of change in the north is occurring faster

↓

Need for adaptation at the local scale is becoming immediate

Local decision-makers

=

Level of government closest to the impacts

+

People directly affected by the impacts

Yet

Local government actions on climate adaptation are *often* fragmented and reactionary:

- lack of buy-in/ mandate
- peripheral agenda
- displaced by other priorities
- problem for the future
- lack of capacity

Our Objectives

Empirical

- Establish a network of researchers with an eye on climate change and resilience/ adaptation policy in the Arctic
- Document how climate stressors manifest on a local scale
- Examine the enabling factors and barriers to resilience and transformation
- Acquire a better understanding of local expertise and needs
- Contribute to policy debates on resilience and action for sustainable livelihoods and local and regional economies

Practical

- Work collaboratively with local actors/ key stakeholders to identify current and future environmental challenges
- Work within and across scales from larger urban centres to small communities, including attention to Indigenous forms of community planning for climate resilience

Our Guiding Principles

The TN will centre its work on the following principles:

- Promote knowledge sharing and co-development of experience
- Facilitate inclusiveness and local stakeholder engagement
- Foster collaborative outcomes from engagement with various stakeholders as well as diverse academic disciplines
- Facilitate on-going learning

ALL informed and guided by:

Arctic Resilience Assessment Report's (2016) best practices on the meaningful engagement of Indigenous peoples and local communities.

Initial Participants

Confirmed Interest	Countries (Institutions)	Northern Research Areas
15	Canada United States Greenland Denmark Sweden Ireland Germany	Canada United States Greenland Denmark Finland Iceland Russia United Kingdom

- 10 researchers, from 8 different Universities; 4 UArctic-member Institutions
  - University of Alberta, Canada
  - University of Northern British Columbia, Canada
  - University of Greenland, Greenland
  - Aalborg University, Denmark
- 3 research centres
  - Arctic Institute of Community-Based Research, Canada
  - Greenland Climate Research Centre, Greenland
  - Nordregio, Sweden
- 1 town (Dawson City, Canada)
- 1 First Nation (Tr'ondek Hwech'in, Canada)

Cont.

Thematic Network Lead

Dr. Jeff Birchall
Assistant Professor, School of Urban and Regional Planning (University of Alberta, Canada)

Lead, Climate Adaptation and Resilience Lab

Thematic Network Collaborators

Dr. Mark Nuttall
Professor + Henry Marshall Chair of Anthropology (University of Alberta, Canada)

Affiliated Professor (University of Greenland + Greenland Climate Research Centre, Greenland)

Dr. Rob Shields
Professor + Henry Marshall Chair of Sociology (University of Alberta, Canada)

Dr. Mark Groulx
Assistant Professor, School of Environmental Planning (University of Northern British Columbia, Canada)

Dr. Martin Lehmann
Associate Professor, Department of Planning (Aalborg University, Denmark)

Dr. Liette Vasseur
Professor + UNESCO Chair in Community Sustainability (Brock University, Canada)

Dr. Kristof van Assche
Professor, School of Urban and Regional Planning (University of Alberta, Canada)

Research Fellow, ZEF/ Institute for Development (Bonn University, Germany)

Dr. Tristan Pearce
Associate Professor + Canada Research Chair in Cumulative Impacts of Environmental Change (University of Northern British Columbia, Canada)

Dr. Timothy Heleniak
Senior Research Fellow (Nordregio, Sweden)

Dr. James Fitton
Postdoc Fellow, Marine and Renewable Energy Ireland (University College Cork, Ireland)

Dr. Cynthia Rosenzweig
Senior Research Scientist, NASA Goddard Institute and Centre for Climate Systems Research (Columbia University, United States)

Cont.

Research Scope/ Interests (current collaborators)

- Impacts of urbanization on the Arctic and its governance
- Evolution and innovation in governance, with focus in spatial, environmental and development policy
- Vulnerability and adaptation of communities and socio-ecological systems to climate change
- Community-based ecosystem management and resilience
- Importance of community engagement and placemaking in effective collaborative planning
- Human-environment relations (climate change, locality, industries, geopolitics)
- Sustainable and socially just approaches to increase resilience
- How coastal communities are affected by climate variability, and the decision dynamics around how adaptation is incorporated into strategic planning

Anticipated Outputs

Near-term (year 1)

- Special Session, Arctic Science Summit Week (Iceland, Mar/Apl 2020)
  - Theme: *Climate change stressors and local response*
  - Purpose: Stimulate discussion; facilitate research collaborations
  - Aim to co-host with the Icelandic Centre for Research and the University of Akureyri

- Workshop (Alberta/ Yukon, July 2020)
  - Theme: *The influence of climate change on the individual and their daily activities*
  - Purpose: Understand how climate change affects different stakeholders; nurture/ facilitate collaborative research agenda for local scale climate resilience
  - Participants: researchers, students, public sector, Indigenous communities, stakeholders

- Seminar, UArctic Congress (Iceland, Oct 2020)
  - Theme: *Arctic resilience and ways of preparing for rapid environmental change*
  - Purpose: provide forum to discuss broad aspects of Arctic resilience; facilitate research collaborations
  - Aim to co-host with local researchers from Iceland and network collaborators

Longer-term

- Massive Open Online Course
  - *Arctic resilience - community planning and development* (in a changing climate)
  - University of Alberta + Tromso University
- Visiting scholar, School of Urban and Regional Planning, University of Alberta
  - delivery of an intensive course on planning and resilience in the Arctic
  - foster research collaborations
- Graduate student co-supervision and exchange w TN members
- Journal Special Issue
  - planning for resilience in the Arctic
- Information toolkit for local decision-makers

Next Steps

- Confirm a Vice-lead (*non*-Canadian collaborator)
- Confirm a Russian collaborator (North-Eastern Federal University, Siberian Environmental Center, Russian Academy of Sciences)
- Expand the TN:
  - Expand network of UArctic members (increase circumpolar representation)
  - Engage the research networks of our collaborators
  - Engage with communities (municipal, Indigenous) where our collaborators are active
  - Explore existing TNs for further cross-linkages (*Arctic Northern Governance; Natural Hazards; Arctic Sustainable Resources and Social Responsibility*)
- Realize the near-term outputs
- Apply for grants to facilitate longer-term outputs

Summary

This TN is unique in it's…

scale of interest (local government)

+

scope of research (community planning, local actors)

↓

Through an interdisciplinary team of collaborators, this TN will…

- Advance knowledge on local-scale planning, climate change and resilience in the Arctic

Thanks for your time!

For further discussion, please contact me at:

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Climate Adaptation + Resilience Lab
School of Urban and Regional Planning
Department of Earth and Atmospheric Sciences
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Canada

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