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University of Oulu

Thule Institute

Northern environmental expertise in research, education and innovation

Kari Laine, Director, Professor

Thule Institute is a multidisciplinary research centre at the University of Oulu, which

- founds its research on the three research programmes Global Change in the North, Northern Land Use and Land Cover and Circumpolar Health and Wellbeing.
- Develops and realizes University's multidisciplinary research and educational co-operation in the field of environmental and northern issues and natural resources.
- takes part in national and international networks.

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Northern and Environmental Issues

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Units:

NorNet **NorTech** **Center for Arctic Medicine** **Oulanka Research Station**

Research programmes
Education (M.Sc and Ph.D. “schools”)
Interaction with society

NORNET
NORTHERN ENVIRONMENTAL RESEARCH NETWORK

- **about 200 researchers in Northern Finland + other staff ~ 600 persons**
- **about 20 different research stations or units in Northern Finland**

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Sectoral research institutes:

SYKE — Finnish Environment Institute SYKE

METLA — Finnish Forest Research Institute METLA

RKTL — Finnish Game and Fisheries Research Institute RKTL

MTT — MTT Agrifood Research Finland

EELA — EVIRA

Finnish Meteorological Institute

Research stations in the nort

University of Helsinki

University of Turku

University of Oulu

Research programmes

- **Global Change in the North** looks at how predicted changes in northern areas are reflected in nature and the prerequisites for human operation.
- **Northern Land Use and Land Cover** focuses on changes in land cover and land use, and factors affecting them and its impacts on environment.
- **Circumpolar Health and Wellbeing** studies human health, wellbeing and adaptation to the northern environment.
- **Environmental Technology** focuses on issues such as water technology, water in processes, sustainable energy, air pollution control and material efficiency
- **Human-Environment relations in the North** – Resource Development, Climate Change and Resilience (FiDiPro programme)
- **Environmental and Resource Economics** Economy-wide material flow accounting and analysis (MFA) combined with the input-output analysis of the product flows of the economy.

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Education in the Thule Institute

Thule Institute arranges multidisciplinary courses, seminars and guest lectures relating to northern and environmental issues for master's and postgraduate students.

Some education is also organised in collaboration with the faculties of the University of Oulu, and with both national and international actors in the field.

Thule Institute's research programmes form the basis of **postgraduate education** in the Institute (**ThuleEDU**). Thule Institute co-ordinates the VALUE Doctoral School.

Thule Institute is responsible for the co-ordination and development **of the international master's programmes** Health and Wellbeing in Circumpolar Area and Barents Master's Program on Environmental Engineering.

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Environment and Energy – Innovation Unit / Network

Centre of Expertise in

- Water technology and processes
- Energy and air technology
- Material efficiency

Eco-innovations

- *environmental technologies across all sectors*

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Key questions and tools

- How do modern technological cycles operate, and what are the environmental implications?
  - Material flow analyses, Design for the Environment, Life Cycle Assessment
- How do the resource-related aspects of human cultural systems operate and what are the environmental implications?
  - Environmental management, consumption analysis
- What is the future of the technology-environmental relationship ?
  - Scenario development, global climate models
- How can we operationally define and address sustainability, as contrasted with responsible environmental performance?
  - System analyses

Green growth ?

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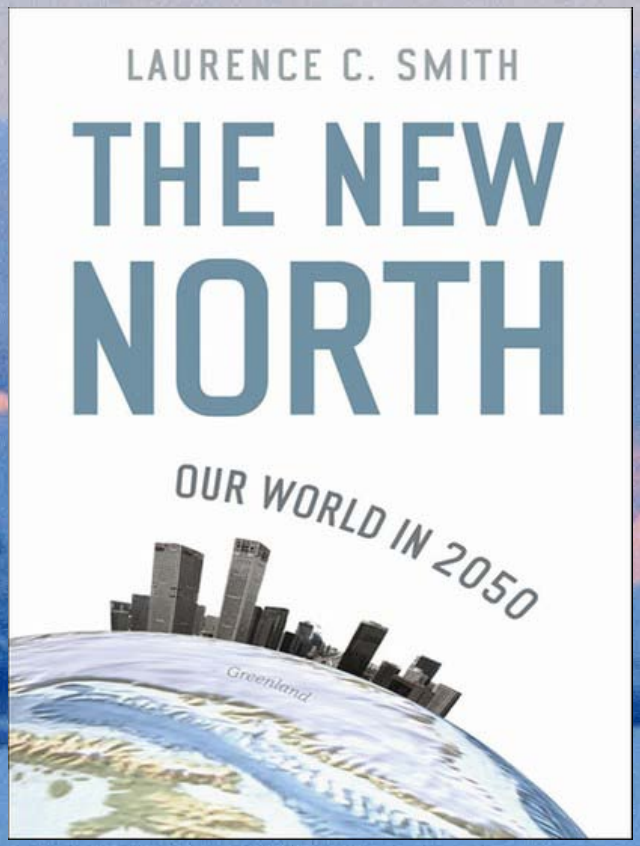

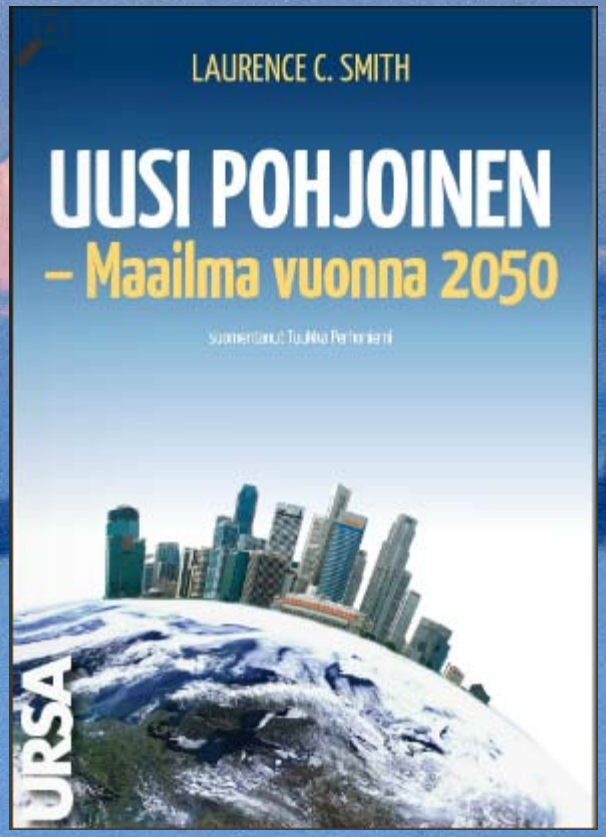

Go north, young man !

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http://thule.oulu.fi

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