



ARCTIC ACADEMY PROGRAMME
(ARCTIKO) 2014–2018



ACADEMY OF FINLAND

ARCTIC ACADEMY PROGRAMME (ARKTIKO) 2014–2018



ARKTIKO in brief

The Arctic region is undergoing a major climate, environmental, geopolitical, economic and sociocultural transformation. The Arctic Academy Programme (ARKTIKO, 2014–2018) aims to study the change factors affecting the development of the Arctic region; the transformation process; and the dynamics of change. The programme contributes to increasing knowledge and strengthening the position of Finnish Arctic research at the top of international rankings, and promotes the identification of novel research paths and, consequently, new solutions.

The interest in Arctic areas has increased significantly over the past few years. An important contributing factor to this has been climate change, which is predicted to cause major changes in northern regions in particular. The transformation in the Arctic region is linked also to the exploitation of natural resources and to land use, which are, at the same time, associated with the challenges caused by migration and an ageing population. The ongoing transformation relates extensively to changes in lifestyles, culture, identity and political life in the region. For example, the cumulative effects of climate change are a combined result of several components. Understanding these mechanisms and processes is a prerequisite for prospective remedying measures and drafting of adaptation strategies. Research data is needed for regional planning, land use planning, permit processes, legislation, economy, education, culture, services and health care. Data is also needed for issues relating to social living conditions and changes in the communities, and decision-making

in several forms, to ensure the management of regional development in accordance with the principles of sustainable development and justice. To obtain sufficiently comprehensive and diversified knowledge, multi- and transdisciplinary high-quality research is required in the long term. Finland has a strong tradition in Arctic research. Finland has also developed infrastructures for Arctic research that function well and have extensive exploitation potential. Finnish research expertise in the state of the environment and renewable natural resources monitoring; in assessment of environmental development; and in compilation of long-term research data is at the highest international level.

The Academy of Finland's Arctic Academy Programme contributes to increasing knowledge and strengthening the position of Finnish Arctic research at the top of international rankings, and promotes the identification of novel research paths and, consequently, new solutions. The timing is most opportune for such a programme, since it promotes



networking of researchers and cooperation with concurrent international projects. ARKTIKO consists of 20 national research projects and international collaborative joint research projects. The Academy of Finland's total funding for the programme is 15.7 million euros for 2014–2018.

Objectives

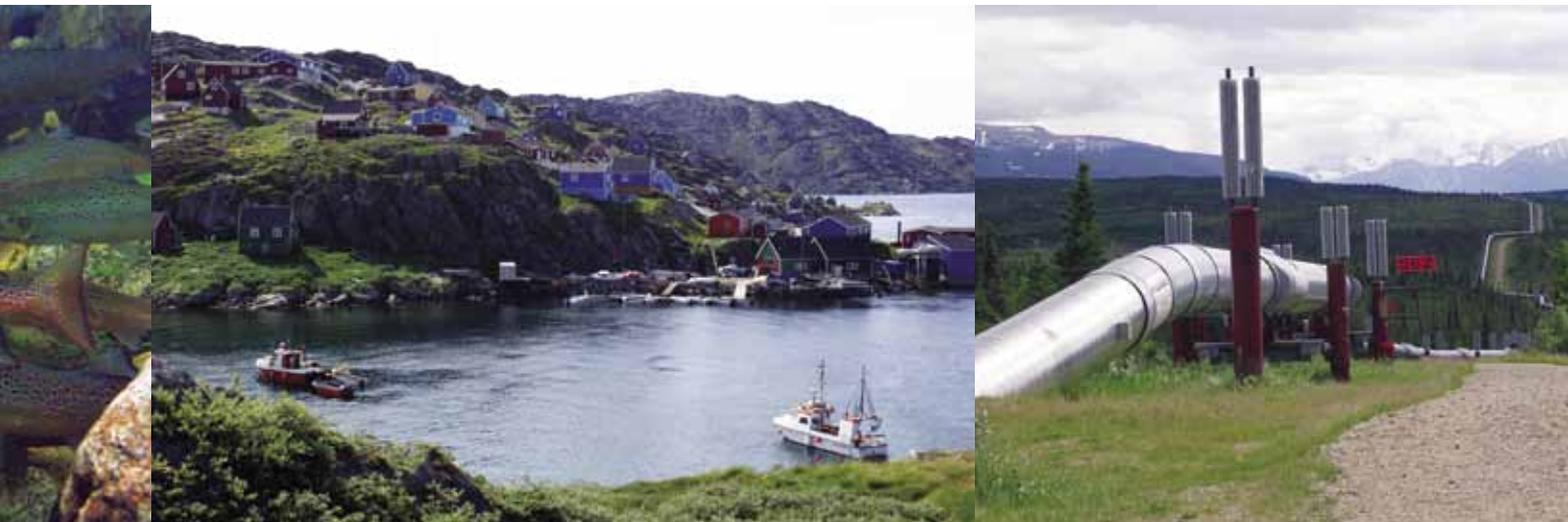
The Academy Programme aims to strengthen the transdisciplinary and multidisciplinary approach within the field of Arctic research in particular. The programme aims to generate new knowledge and approaches relating to the sustainable development of individuals and communities in terms of social life, health and culture; the sustainable exploitation of Arctic environments and natural resources; and the protection of sensitive Arctic ecosystems and securing the ecosystem services produced by them.

At the core of the programme is the aim to study and understand the change factors affecting the development of the Arctic region; the transformation process; the dynamics of change in relation to the future of the Arctic region.

The main objectives of the Arctic Academy Programme are:

- to produce new research knowledge on the multidimensional change processes in the Arctic region and the factors affecting these
- to strengthen transdisciplinary and problem-based Arctic research in Finland in the long term
- to disseminate new research knowledge to support decision-makers and stakeholders and for public discussion.





Further goals:

- to collect scattered strategic research capacity, special expertise and data to be used for multi-disciplinary Arctic research
- to promote transdisciplinary cooperation in the field of Arctic research
- to boost international networking of Finnish Arctic research, thus also promoting the chances of researchers to put research infrastructures to efficient use
- to reinforce Finland's status as an internationally leading expert in Arctic issues
- to use and compile research data to respond to the identified grand challenges.

Thematic areas

- Good-quality life in the north
- Economic activity and infrastructure in Arctic conditions
- The northern climate and environment
- Cross-border Arctic policy

Cooperation

The Arctic Academy Programme is set to include collaboration with Tekes' programme Arctic Seas and with other national players and associations in the field of Arctic research. ARKTIKO has also international cooperation through the Academy's existing networks. The Academy of Finland co-funds the Nordic Centres of Excellence in Arctic Research initiative, which is coordinated by Nord-Forsk. Collaboration has also been planned with other international parties.

ISBN 978-951-715-879-4

Images: Timo Vihma, Timo Palo, Miska Luoto, Tomas Roslin, Jan Hjort, Florian Stammer, Panu Orell

Layout: Sole Lätti

SP-paino Oy, Helsinki 2015



ARCTIC ACADEMY PROGRAMME (ARKTIKO) 2014–2018

FUNDED PROJECTS

Arctic targeted call 2013: Sustainable economy and infrastructure in Arctic conditions

Understanding the Cultural Impacts and Issues of Lapland Mining: A Long-Term Perspective on Sustainable Mining Policies in the North
Vesa-Pekka Herva, University of Oulu

Kara-Arctic Monitoring and Operation Planning Platform (KAMON)
Mikko Lensu, Finnish Meteorological Institute
Jukka Tuhkuri, Aalto University

Towards Efficient and Sustainable Arctic Oil-Spill Response: Green Dispersing and Herding Agents Derived from Northern Bioresources (ARCRESPO)
Jouko Niinimäki, University of Oulu
Mika Sillanpää, Lappeenranta University of Technology

Governing Adaptive Change Towards Sustainable Economy in the Arctic (GovAda)
Jukka Similä, University of Lapland
Pasi Eilu, Geological Survey of Finland
Artti Juutinen, Natural Resources Institute Finland

Towards Better Tailored Weather and Marine Forecasts in the Arctic to Serve Sustainable Economic Activities and Infrastructure (TWASE)
Timo Vihma, Finnish Meteorological Institute

Strap-Down Sensing for Safe Material Handling and High-Performance Motion Control
Ari Visa, Tampere University of Technology

Arctic Academy Programme call 2014

Geomorphic Sensitivity of the Arctic Region: Geohazards and Infrastructure (INFRAHAZARD)
Jan Hjort, University of Oulu
Miska Luoto, University of Helsinki

Arctic Ark – Human-Animal Adaptations to the Arctic Environment: Natural and Folk Selection Practices (Arc-Ark)
Juha Kantanen, Natural Resources Institute Finland
Florian Stammer, University of Lapland

Keeping the Arctic White: Regulatory Options for Reducing Short-Lived Climate Forcers in the Arctic (WHITE)
Kati Kulovesi, University of Eastern Finland
Kaarle Kupiainen, Finnish Environment Institute
Kari Lehtinen, University of Eastern Finland

Domestication of Indigenous Discourses and Processes of Constructing Political Subjects in Sápmi
Veli-Pekka Lehtola, University of Oulu

Wastewater Treatment by Natural Freeze Crystallization and Ice Separation (WINICE)
Marjatta Louhi-Kultanen, Lappeenranta University of Technology
Pentti Kujala, Aalto University
Aki Mikkola, Lappeenranta University of Technology

Cooperative Heavy-Duty Hydraulic Manipulators for Sustainable Subsea Infrastructure Installation and Dismantling (Seaspider)
Jouni Mattila, Tampere University of Technology
Ville Kyrki, Aalto University

Oil Production Networks in the Russian Arctic: Societal Impacts and Potential for Partnerships
Soili Nystén-Haarala, University of Lapland

Towards More Efficient Arctic Research Using Dominant Betula Species, Spectromics and Genomics (BETUMICS)
Elina Oksanen, University of Eastern Finland
Juha Mikola, University of Helsinki
Kaisa Nieminen, Natural Resources Institute Finland

Integrative Science for Adaptive Co-Management in the Arctic: Teno Atlantic Salmon as a Model System (ISAMA)
Craig Primmer, University of Turku
Jaakko Erkinaro, Natural Resources Institute Finland
Timo Pauli Karjalainen, University of Oulu

Carbon Balance under Changing Processes of Arctic and Subarctic Cryosphere (CARB-ARC)
Jouni Pulliainen, Finnish Meteorological Institute
Timo Vesala, University of Helsinki

Long-Term Effects of Fire on Carbon and Nitrogen Pools and Fluxes in the Arctic Permafrost and Subarctic Forests (ARCTICFIRE)
Jukka Pumpanen, University of Helsinki

Exposing the Long-Term Change of Arctic Ecosystems Using Novel and Multidisciplinary Techniques
Tomas Roslin, University of Helsinki

Assessing Intermediary Expertise in Cross-Border Arctic Energy Development
Veli-Pekka Tynkkynen, University of Helsinki

Ice Clouds and Ice Nucleation in Arctic (ICINA)
Hanna Vehkamäki, University of Helsinki
Jorma Keskinen, Tampere University of Technology
Sami Romakkaniemi, Finnish Meteorological Institute
Annele Virtanen, University of Eastern Finland

International Network Projects: Joint Programming Initiative (JPI) - Climate Joint Call 2013

Constraining Uncertainties in the Permafrost-Climate Feedback
Christina Biasi, University of Eastern Finland
Tarmo A. Virtanen, University of Helsinki

Social-Ecological Transformations: HUMAN-ANIMAL Relations Under Climate Change in Northern Eurasia (HUMANOR)
Bruce Forbes, University of Lapland



MORE INFORMATION

ACADEMY OF FINLAND

Tuula Aarnio

Programme Manager, PhD
tuula.aarnio@aka.fi

Mikko Ylikangas

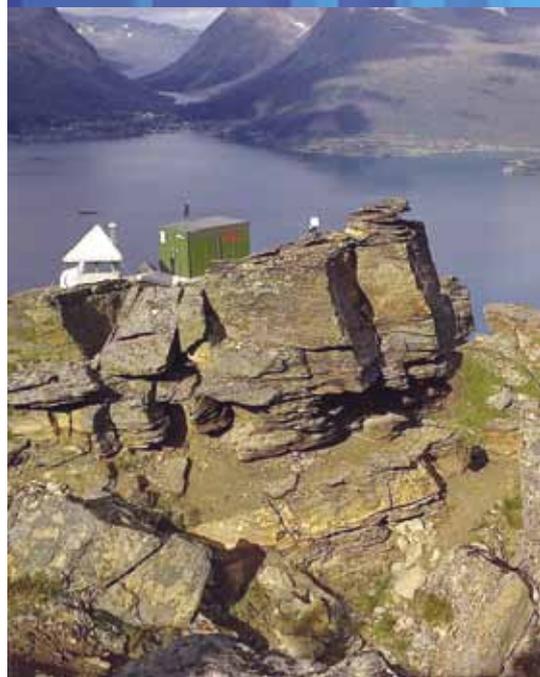
Programme Manager, PhD
mikko.ylikangas@aka.fi

Sanna Hytönen

Project Officer
sanna.hytonen@aka.fi

Academy of Finland, tel. +358 295 335 000

Programme website: www.aka.fi/arktiko



ACADEMY OF FINLAND

Hakaniemenranta 6 • POB 131, FI-00531 Helsinki, Finland
Tel. +358 29 533 5000

www.aka.fi/eng