

NORDFORSK

MAGAZINE 2018

"The Nordic University Hubs initiative has created a new momentum for Nordic affairs researchers"

Peter Stadius, University of Helsinki

"The Nordic region is a gold mine for education researchers"

Kirsti Klette, University of Oslo

"High academic quality along with the strength of Nordic research groups give the Nordic region a good starting point for becoming a leader in personalised medicine."

Jørgen Frøkiær, Aarhus University

**MIGRATION AND INTEGRATION:
OPPORTUNITIES AND CHALLENGES**

**LARGE-SCALE INITIATIVE IN
PERSONALISED MEDICINE**

**NORDIC REGISTRIES
– A TREASURE
TROVE FOR
RESEARCH**



NordForsk

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www.nordforsk.org

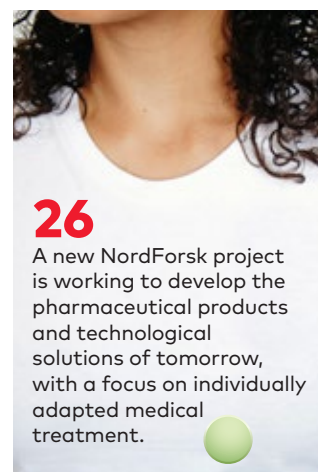
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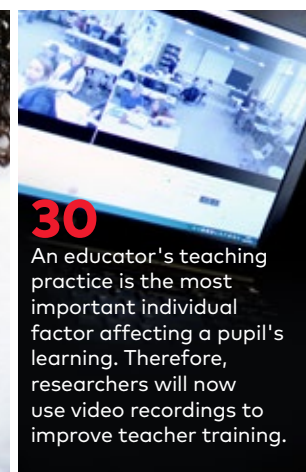


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The Swan ecolabel was established in 1989 by the consumer sector of the Nordic Council of Ministers.

TOGETHER WE ARE STRONGER

When I took on the role of Director of NordForsk in January 2018, I had many years of international research cooperation behind me. I looked forward eagerly to focusing on the Nordic region and the research cooperation that NordForsk supports.

After a year as NordForsk's leader, I am impressed and proud of what we achieve in conjunction with Nordic research funders. Together we encourage the implementation of research that would be impossible to carry out nationally and that is of great value for our combined population of 27 million. We deliver the critical mass needed to perform cost-effective research at the forefront of numerous disciplines, some of which you can read about in this magazine.

The Nordic countries are a stable region where we trust each other and our leaders. This trust is a cornerstone of our societies. It is a valuable resource we must protect, especially when the media resounds with false news. In Nordic research circles, it is a given that research is to be free, independent and of very high quality. We stand behind science and work continuously to make new knowledge accessible to all.

Cooperation in research allows us to share data, infrastructure and resources across national borders. Other benefits include closer collaboration between Nordic institutions, enhanced researcher expertise and increased regional mobility that facilitates the establishment of important networks. Together we conduct research that has an impact on our region through publications, new patents and products and heightened awareness of the Nordic countries and Nordic cooperation in the international arena.

For several years NordForsk has been working to promote Nordic research cooperation on registry data. The Nordic countries have been collecting information about their citizens in a variety of registries for centuries. When our researchers utilise Nordic register data it leads to higher quality, statistically stronger research results compared to what can be obtained based on national data alone.

I view the data registries as a Nordic gold mine with many entrances and strict gatekeepers. While it is good that the gates are closely guarded, we must create openings for our Nordic researchers that allow them easy, reliable access to this Nordic treasure. The Nordic registries are unique globally. They increase the appeal of collaboration with the Nordic region and enable us to be on the cutting edge of research. In this issue of our annual magazine you can read about the exciting collaborative work Nordic researchers are able to perform when granted joint registry access.

NordForsk's long-term goal is to support Nordic researchers so that the Nordic region will remain a global leader in research and an international player to be reckoned with. Together we are stronger.

Arne Flåøyen
Director, NordForsk

"The Nordic registries are unique globally. They increase the appeal of collaboration with the Nordic



region and enable us to be on the cutting edge of research."

Photo: Knut Gåse



Photo: timon-studler/unsplash

THE CHALLENGE FROM TERRORISM IN THE NORDIC COUNTRIES

Does the threat of terrorism lead to a rudier, more caustic political environment and an erosion of confidence in the authorities? This is what researchers in the NordForsk project "The Challenge from Terrorism in the Nordic Countries: An analysis of citizens' reactions, policy responses and legitimacy" will be trying to determine.

Written by: **Andreas R. Graven/NORCE**

Dag Arne Christensen of NORCE is leading the three-year project which was awarded nearly NOK 10 million in March 2018. The project is part of NordForsk's Nordic Societal Security Programme.

"Democracy as a form of governance is under pressure from terrorist acts and from the ever-impending danger of terrorism. There is a dilemma between providing security to the population and avoiding unnecessary infringement of people's freedom and privacy. We need to learn more about how democratic states can cope with this dilemma," says Dr Christensen.

High level of trust
For decades, the Nordic democracies have been characterised by a high level of internal trust and consensus. The question is whether this underpinning of stability, calm and predictability in society could be disrupted.

"We are interested in what happens when people are afraid and angry," he says. "The core of our new research project can be summed up as follows: we want to learn more about how terror affects people and how terror affects politics."

Why is it important to know what people perceive to be terrorism?

"When an incident is defined as an act of terrorism, stronger policy instruments are often applied in an attempt to prevent future attacks of a similar kind," says Sveinung Arnesen, another researcher at NORCE.

"The definition affects how the problem is approached. Fear of terrorist attacks can make politicians more open to allowing wider monitoring and intervention in the private sphere. It is important to find out what people think of the anti-terrorism measures being introduced and whether there is a correlation, a legitimacy in the relationship between risk and safety."

Nordic citizen panels
The project is unique because it includes collaboration on data from the citizen panels in Norway, Sweden and Iceland. Reykjavik University and the University of Gothenburg are partners in the project, along with the University of Bergen.

This is the first time the Nordic citizen panels are being used in such an extensive and sustained way

in a research project, ensuring high methodological quality and reliable results for the researchers:

"The citizen panels will provide solid data on people's attitudes towards anti-terrorism policy instruments, such as monitoring methods. We can follow the same people over time and see if their attitudes and opinions change," says Mr Arnesen.

Nordic Societal Security Programme

is a multidisciplinary research programme designed to generate new knowledge about what is required to ensure the safety and security of the Nordic countries' inhabitants. In 2018 the NordForsk Board allocated NOK 28.5 million in funding to three new projects under the call "The Underpinnings of Nordic Societal Security".

Funders: Academy of Finland, Icelandic Centre for Research - Rannís, Swedish Civil Contingencies Agency, Norwegian Directorate for Civil Protection, Research Council of Norway and NordForsk.

Budget: approximately NOK 121 million.

nordforsk.org/societal-security

Country/Entity	Budget (NOK million)
NordForsk	35.0
Norway	25.0
Sweden	20.0
Finland	18.9
United Kingdom	14.0
Netherlands	7.2
Iceland	1.3

Total budget: NOK 121.3 million

NORDIC COUNTRIES TAKE THE LEAD IN eSCIENCE

Nordic cooperation in eScience is bearing fruit. Better screening for cervical cancer is one concrete result, and more are on the way.

Written by: Karin Montgomery

The Nordic eScience Globalisation Initiative (NeGI), designed to promote the Nordic region as a leading force in eScience research, is now in its final phase. One of the research centres under the NeGI is the Nordic Information for Action eScience Centre (NIASC), which works to design new tools for research and the development of better cancer screening programmes. The centre's activities have paved the way for new cooperation between three fields of research.

"Before this there was virtually no collaboration between the fields of cancer screening, population-based research and technology-oriented research, and most research projects encompassed only a single Nordic country," recalls Professor Joakim Dillner, Project Leader for NIASC. "Today, we have effective cooperation across this research field as well as across national borders." Centre activities have focused on developing personalised screening programmes for different cancer types.

"We have been working with a variety of cancer types and reached our goal with cervical cancer, where individual screening programs are now offered through targeted mailings to women at high risk in Sweden and Norway," the professor states. He sees many advantages of Nordic collaboration within eScience.

"The Nordic countries are small on their own, but together they have about 27 million inhabitants. Cooperation gives the research greater statistical power."

He also believes cross-border cooperation provides a good opportunity to test whether results are transferable.

"We often think along the same lines, but our solutions are not identical, so collaboration makes research results more universal. The Nordic countries have many research groups for specialised areas, but it takes knowledge in all the relevant areas to achieve more broadly applicable results. Working together gives the Nordic countries access to the full range of expertise needed." Efforts to develop screening programmes for more types of cancer are ongoing. In five to ten years, Professor Dillner believes, individualised cancer screening will be widespread.

"People at different risk levels for cancer will have access to the right amount of screening called for, neither too much nor too little. Currently, some groups are screened too much and some too little, which is both costly and means that some miss out on the opportunity for targeted care."

NIASC is now armed with valuable experience and advanced technology.

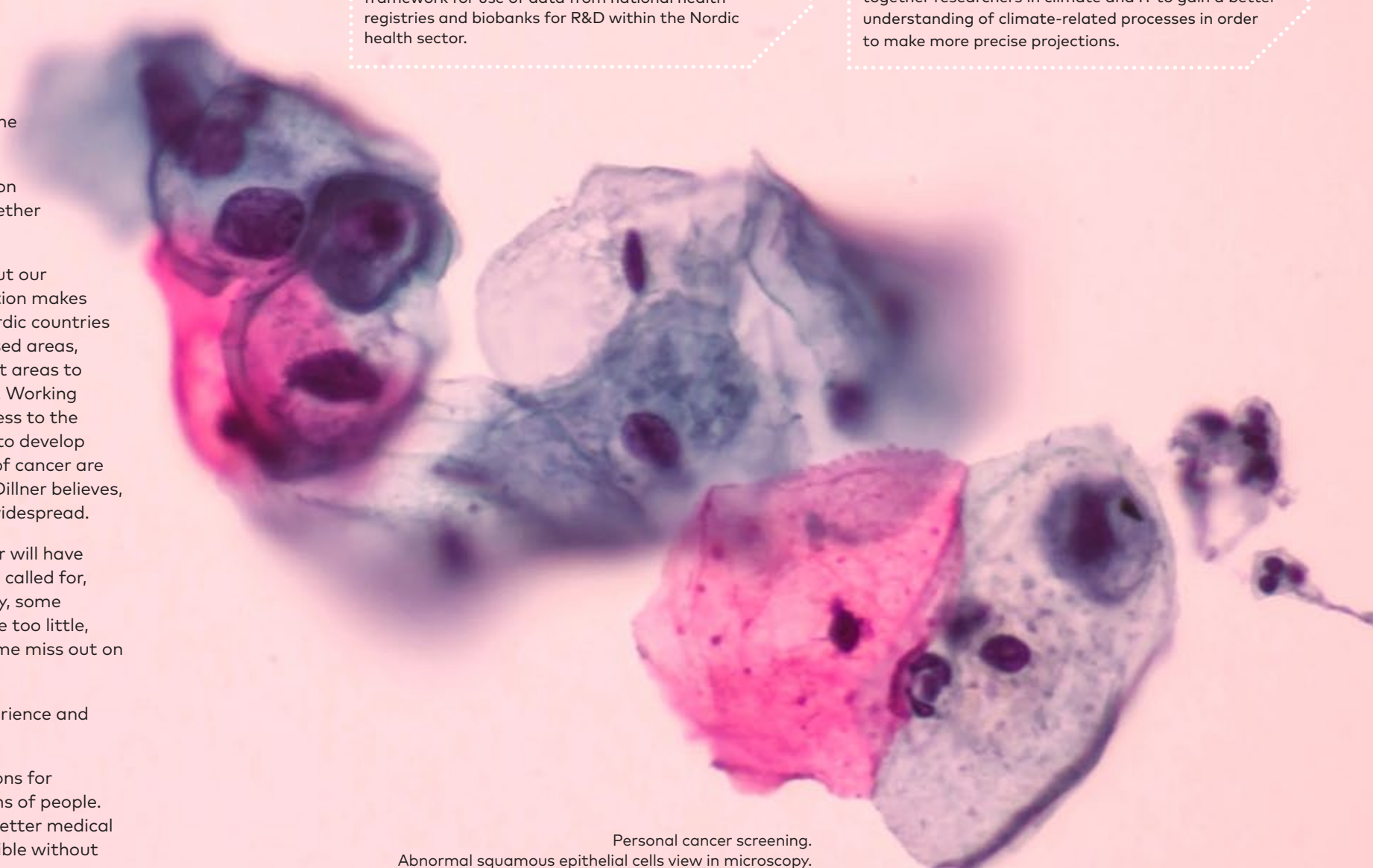
"Today, for example, we have the solutions for obtaining informed consent from millions of people. This makes it possible to conduct ever better medical research and would not have been possible without Nordic cooperation."

The Nordic Information for Action eScience Centre (NIASC)

The Nordic Information for Action eScience Centre (NIASC) is a Nordic Centre of Excellence under the NeGI. The centre comprises 16 partners from Denmark, Estonia, Finland, Iceland, Norway, Poland and Sweden. Its objective is to develop IT tools that enhance research and development on cancer screening. In addition, the centre will promote a more flexible framework for use of data from national health registries and biobanks for R&D within the Nordic health sector.

Tools for Investigating Climate Change at High Northern Latitudes (eSTICC)

eScience Tools for Investigating Climate Change at High Northern Latitudes (eSTICC) is also a Nordic Centre of Excellence under the NeGI. The centre comprises 13 different research institutions from Denmark, Finland, Greenland, Norway and Sweden. eSTICC brings together researchers in climate and IT to gain a better understanding of climate-related processes in order to make more precise projections.



Personal cancer screening.
Abnormal squamous epithelial cells view in microscopy.
HPV criteria for pap smear slide cytology.
Komsan Loonprom/shutterstock

NORDIC COUNTRIES TAKE THE LEAD IN ESCIENCE

Strengthened the reputation of Nordic research

Associate Professor David Wallom of Oxford University is a member of the Scientific Advisory Board for NIASC and another NeGI-funded Nordic Centre of Excellence: eScience Tools for Investigating Climate Change at High Northern Latitudes (eSTICC). The objective of eSTICC is to enhance understanding of climate-related processes in order to make more precise climate projections. Professor Wallom highlights collaboration between researchers as one of the main benefits of NeGI activities.

"Researchers tend to build networks and cooperate with people they know. These researchers will look to international collaboration where research activities might otherwise have remained local."

He also emphasises that the project has strengthened the reputation of Nordic research internationally.

"This is globally leading work taking place thanks to Nordic cooperation, and it has definitely influenced how research is conducted outside the Nordic countries as well. The sum here is larger than the individual parts."

He predicts rapid advances in eScience in the future.

"The current standard was the very latest development just six years ago, and today's

innovations will soon be the new norm. We will have data that can be applied in all areas of society," says Professor Wallom, who points to the health-related information from workout phone apps by way of an example.

"If I could link all the data contained in my phone and apply it in a larger system, I would be able to monitor my own health and well-being."

Professor Dillner also stresses the important role that NordForsk as an organisation plays in promoting research collaboration.

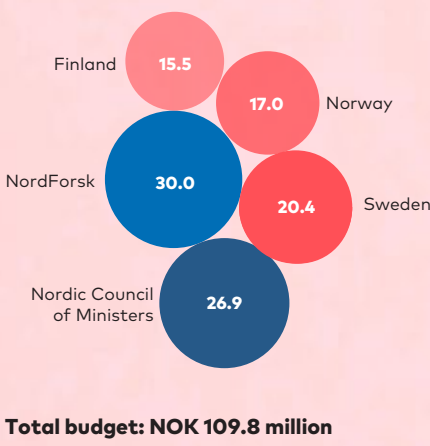
"NordForsk has enabled us to accomplish vastly more together than we would as individual institutes. It's a very effective way to make progress, and NIASC is one of the most enjoyable projects I've ever worked on."

Nordic eScience Globalisation Initiative (NeGI)

The objective of the NeGI was to further advance the Nordic region as a leader in eScience research. The initiative was launched in the wake of the Nordic eScience Action Plan from 2008.

Funded by: The Academy of Finland, NordForsk, the Nordic Council of Ministers, the Research Council of Norway and the Swedish Research Council.

Budget: NOK 110 million.
nordforsk.org/negi



EDUCATING A NEW GENERATION OF NEUTRON USERS ONLINE

The Nordic Neutron Science Programme is working to update learning material within neutron scattering to help educate a new generation of neutron users.

Written by: Iiris Tarvonen

A call for organising a Massive Open Online Course (MOOC) on neutron scattering techniques was launched by NordForsk in August 2018. The aim of the call is to promote excellence and capacity-building through the education of a new generation of neutron users and specialists through new learning material.

"There is a real need for an update. As far as I can see, we are lacking a ground-level book about neutron scattering that would deal with the subject in depth and that could be used by the students in the beginning of their PhD studies. There is only one textbook available. It was written in 1978, and is written so that

only physicists can truly understand it," says Kim Lefmann, leader of Nordic Neutron School: Theory, Experiment, and E-learning, one of the projects currently funded under the Nordic Neutron Science Programme.

The learning material will take the form of a Massive Open Online Course (MOOC), available on an internationally recognised platform. MOOCs focus

on producing interactive eLearning material, often in the form of video lectures and other self-study materials with the help of professionals in content, design, script and technique. MOOCs are free and open to anyone to join.

"The MOOC will offer an exciting and challenging experience by integrating new technologies, and mixed approaches to learning. In addition, the

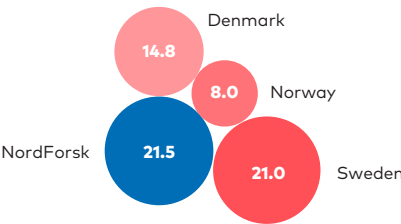
MOOC will significantly increase the visibility and potential impact of the Nordic Neutron Science Programme", says Kyösti Lempa, Senior Adviser at NordForsk.

The Nordic Neutron Science Programme

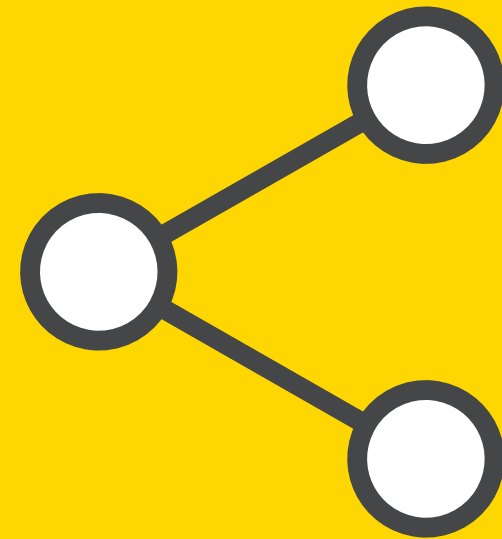
aims to increase the number of Nordic-region researchers skilled at utilising neutrons in scientific analysis, as well as raise the competency level regarding neutron scattering, particularly among younger researchers and other groups without extensive experience in this field. The programme is designed to support long-term use among the Nordic countries of the European Spallation Source (ESS), which will become operational in 2019.

Funders: Danish Ministry of Higher Education and Science, Swedish Research Council, Swedish Foundation for Strategic Research, Research Council of Norway and NordForsk.

Budget: approximately NOK 65 million.
nordforsk.org/neutronresearch



NEW NORDIC PLATFORM FOR OPEN SCIENCE



The Nordic e-Infrastructure Collaboration (NeIC) is seeking to build a Nordic platform for open science and to serve as a link between Nordic and European level collaboration.

Written by: Iiris Tarvonen

Open Science is a broad concept which entails that collected data, methods, software and educational resources, for example, will be made freely available to researchers and the public. In addition, Open Science aims to make the scientific data actionable for machines and interoperable between various systems.

"It's about maximising the public investments put into research. Opening up data for other researchers, perhaps with a different background, enables them to look at it with new eyes, and therein lies the potential to learn more", says Gudmund Høst, Director of the Nordic e-Infrastructure Collaboration (NeIC).

"In addition, researchers often receive public funding to collect data that they, in the end, never have time to analyse. The traditional way of dealing with this would be to put the data set "in a drawer" to wait for a suitable time — which often never comes. Open access to data allows others to do the analysing and thus

ensures that taxpayers' money won't go to waste", Dr Høst continues.

The EU has a vision of creating a platform to enable Open Science at a European scale. To realise the vision, the European Commission has launched a call under Horizon 2020 to support coordination of national initiatives that are relevant for the European Open Science Cloud (EOSC). NeIC has endorsed the general principles of the EOSC declaration and has been encouraged by its national partners to coordinate a Nordic proposal in response to the call.

"Several NeIC projects align with the aims of EOSC and are already planning to carry out at Nordic level much of what EOSC is trying to do on a European scale", says Kine Nordstokkå, adviser for NeIC.

Alongside preparations for the call, NeIC is also exploring opportunities within the framework of a Nordic Open Science

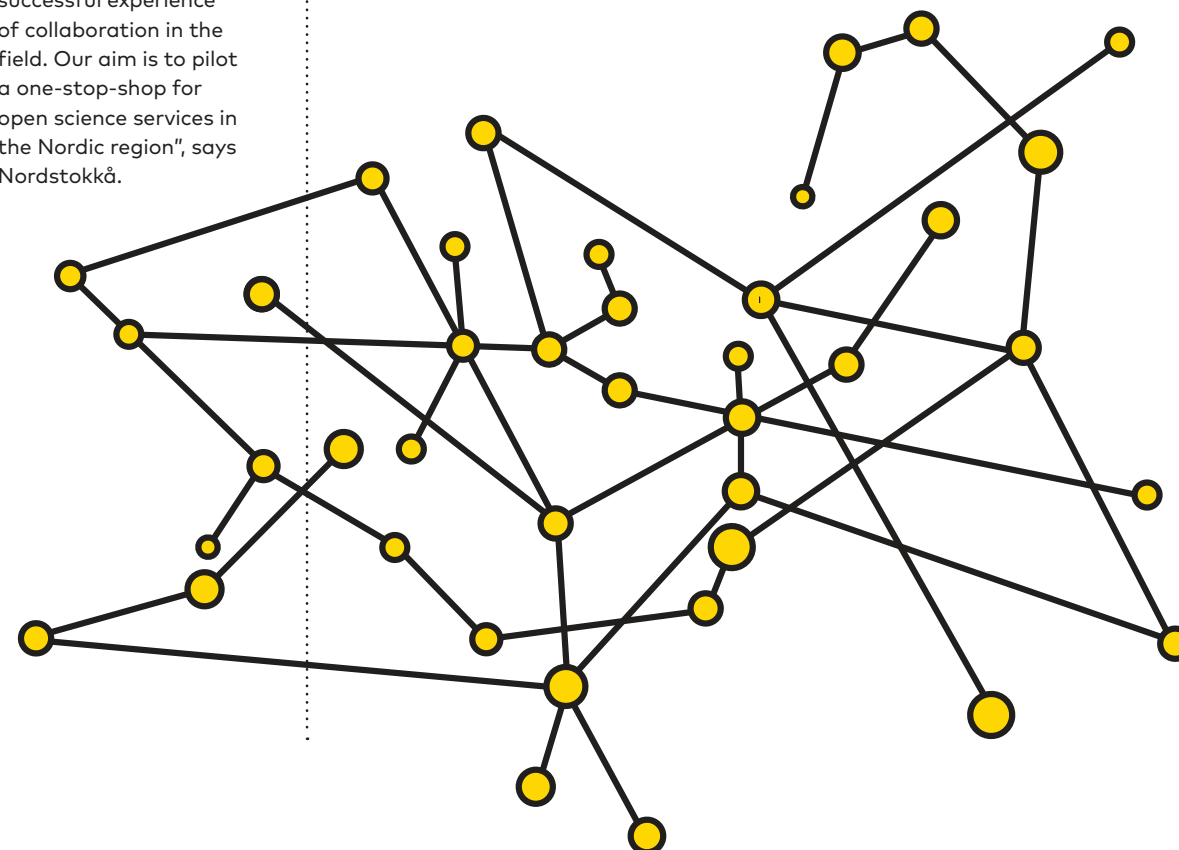
Cloud (NOSC). By taking part in the European level collaboration, NeIC can continue its ongoing efforts while at the same time offering a link to EOSC and a convergence point for Nordic efforts.

"The benefit of a Nordic-level project will be the similarity in culture and successful experience of collaboration in the field. Our aim is to pilot a one-stop-shop for open science services in the Nordic region", says Nordstokkå.

Currently, NeIC is working to map out the state of Nordic Open Science and increase knowledge about Open Science principles and techniques in the Nordic region.

"EU-funding would of course provide a major boost, but we want to implement something like

this in any case. The main thing here is to simplify the everyday life of an ordinary researcher in the Nordic region", Gudmund Høst concludes.



European Open Science Cloud

The European Open Science Cloud (EOSC) is a European initiative aimed at enabling Open Science by creating a platform supporting researchers in storing, managing, analysing and re-using data for research, innovation and educational purposes.

Nordic Open Science Cloud

The Nordic Open Science Cloud (NOSC) is a Nordic initiative coordinated by NeIC. It aims to create a Nordic platform for Open Science linked to EOSC.

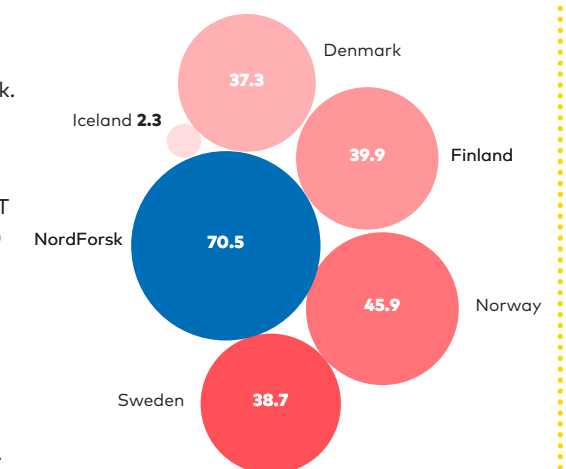
Nordic e-Infrastructure Collaboration (NeIC)

NeIC facilitates development and operation of high-quality e-Infrastructure solutions in areas of joint Nordic interest. The organisation is hosted by NordForsk. The strategic partners of NeIC are the national e-infrastructure provider organisations CSC (Finland), SNIC (Sweden), UNINETT Sigma2 (Norway), DeIC (Denmark) and RH Net (Iceland).

Funders: Academy of Finland, DeIC - Danish e-Infrastructure Cooperation, Icelandic University Research Network (RHnet), NordForsk, Research Council of Norway, Swedish Research Council.

Budget: NOK 234.6 million.

nordforsk.org/neic



Annual budgets 2014 – 2018:
NOK 234.6 million

LARGE NORDIC- BRITISH RESEARCH INITIATIVE ON MIGRATION AND INTEGRATION



The significant increase in forced and voluntary human migration in the recent decades has had economic, socio-political and cultural impacts on all of Europe. The Nordic countries and the UK have therefore joined forces in a new, large-scale research programme to address both the challenges and the opportunities associated with migration and integration.

Written by: Jakob Chortsen

"The debate over migration, integration and their impacts on society is something the Nordic countries and the UK have in common. That debate has intensified in recent years. Brexit and the largely negative debate in the British press have made it hard for British researchers to offer an alternative, more evidenced view of the positive net benefits of migration, whether economically, socially or even politically. Lots of it has been anecdotal, it's been biased, it's been irrational," says Jeremy Neathey, Deputy Director of the UK's Economic and Social Research Council (ESRC).

Uncertainty about Brexit and its consequences is one reason he looks forward to the project with NordForsk:

"We're unsure what the UK's future funding model in the European context will be. If the UK ends up outside the processes for accessing European research funding, it is unclear what will happen. One thing driving us is therefore to look for alternative means of maintaining cooperation with the European partners that we value, also after Brexit. NordForsk is an example of a partner we have worked with previously, have a good working relationship with, and want to continue working with," he explains.



LARGE NORDIC-BRITISH RESEARCH INITIATIVE ON MIGRATION AND INTEGRATION

Jeremy Neathey believes that the Nordic countries and the UK have a lot to offer one another.

"What we in the UK can contribute is high-quality research from a long tradition of migration research. The Nordic region also brings a very high level of expertise in the field. So through comparative analysis and projects, we will be able to strengthen the scientific foundation and make it easier for researchers to present evidence-based data showing the actual impact of integration on the welfare states," he explains, then elaborates:

"For me, the most important thing is to provide evidence-based research needed for a balanced view of migration, including the challenges and the benefits. The goal is for the programme to become a platform that will help in choosing the right policy responses based on research, not emotions."

Nordic-British cooperation has a greater impact than national research

Maria Lähteenmäki, the Chair of NordForsk's Programme Committee for the Joint Nordic-UK Research Programme on Migration and Research, concurs that researchers in the new Nordic-British programme should not focus exclusively on problems and challenges associated with migration.

"Like our British colleagues, we also want to explore the benefits related to increased migration by examining, for example, the migrants' backgrounds, cultures and educational levels and the potential these may represent at the Nordic, British and national levels. We are seeking to conduct research before the challenges arise," she says.

She adds: "The Nordic-UK research programme was established on the premise that collaboration between our researchers can produce results of far greater value to the countries involved than is possible through national activities alone. The UK has carried out research in this area over many years and has amassed a great deal of knowledge. The Nordic countries have large amounts of data to contribute with and working together will enable us to create something altogether new."



Photo: Yadid Levy / norden.org

"The aim is for collaboration between researchers in the Nordic countries and the UK to lead to results of far greater value to the countries involved than is possible through national activities alone."

Maria Lähteenmäki,
University of Eastern Finland



Photo: Yadid Levy / norden.org

"Collaboration between the UK and NordForsk can provide us with evidence-based data showing the actual impact of migration and integration on the welfare states."

Jeremy Neathey,
UK's Economic and Social Research Council



Photo: norden.org

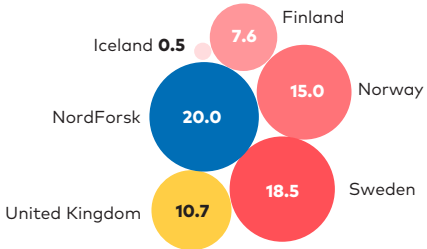
Joint Nordic-UK Research Programme on Migration and Integration

Nordic and British researchers will investigate opportunities and address challenges associated with migration and integration.

Funders: NordForsk, Economic and Social Research Council (part of UK Research and Innovation), Academy of Finland, Swedish Research Council, Forte, Research Council of Norway and Icelandic Centre for Research (Rannís).

Budget: NOK 72.4 million

nordforsk.org/migrationandintegration



Total budget: NOK 72.4 million

A TREASURE TROVE OF INFORMATION

For several centuries, the Nordic countries have collected information on each of their citizens. There are registries in the region dating to the 1700s, with information on birthplaces, marriages and deaths, among other particulars.

Written by: Tor Martin Nilsen

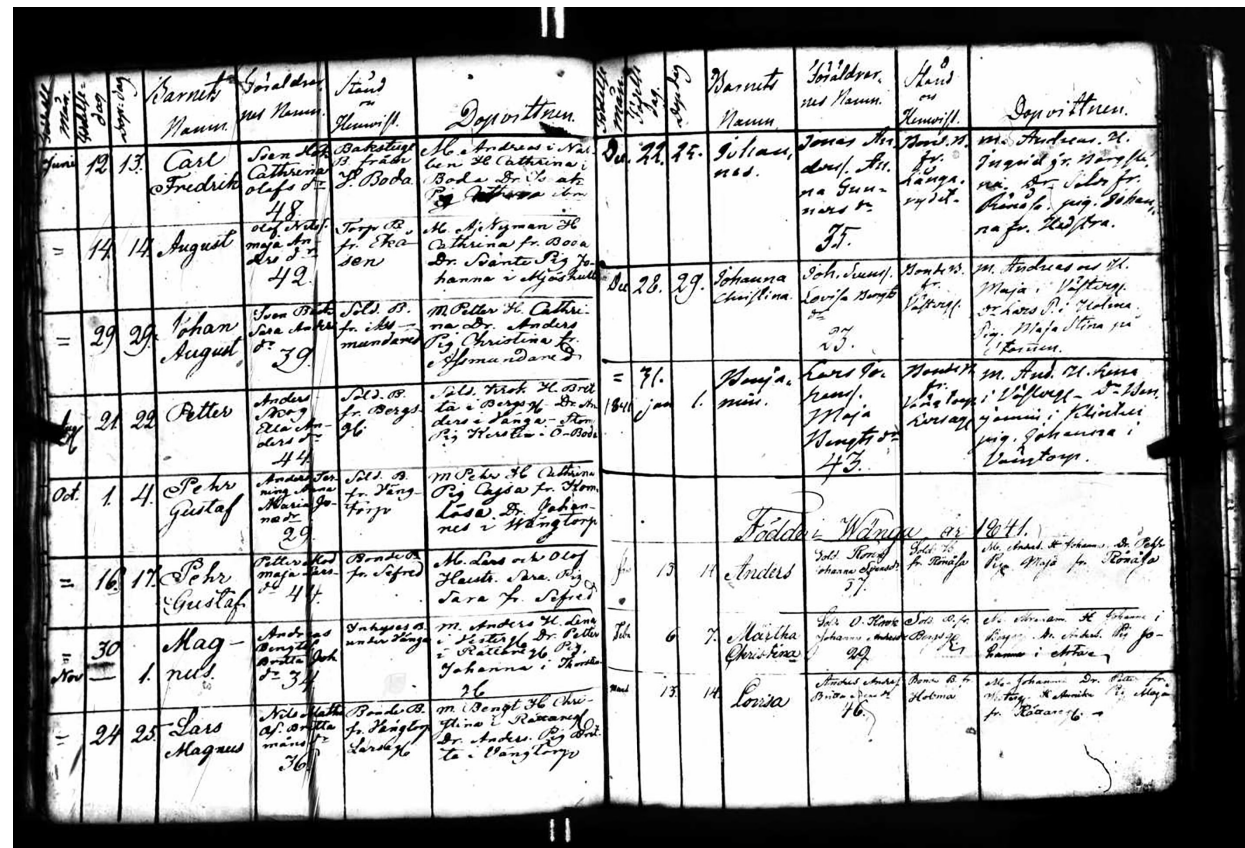
Today there are even more registries, and linking their data together can provide a detailed record of each individual's journey through life. This treasure trove of information could be a unique source of insight for Nordic researchers, but many obstacles still prevent the easy exchange of registry data among the Nordic countries. NordForsk has given this topic high priority for several years and has invested heavily in efforts to promote Nordic research cooperation based on registry data.

NordForsk's Nordic Programme on Health and Welfare was launched in 2014 and has a budget of more than NOK 445 million. To date the programme has issued seven calls for proposals and funded more than 20 projects, many of which address opportunities and challenges related to registry research. In 2018, NordForsk introduced a new initiative for projects that use health data for personalised medical treatment.

"Many of the obstacles to expanding and improving health and welfare cooperation across borders are the same, whether we're talking about biobanks, population registries or clinical studies," says Special Adviser Maria Nilsson of NordForsk. "Several of our projects look at how to surmount the challenges posed by legal, technical and organisational bottlenecks so that data can be shared across national borders."

Highly time-consuming

The biggest challenge, she points out, is practical in nature, as accessing data in other Nordic countries is highly time-consuming for researchers.



"Today, researchers must apply for ethical approval and access to data in each individual country, then wait for the different institutions to grant permission," Dr Nilsson explains. "If you want access to data from multiple registries, the waiting time can be many months, or even years. A Nordic project using data from different countries often becomes too complex and time-consuming, so many researchers stick to national data and thus forego new insights. Researchers today also spend a lot of time figuring out whether the variables can actually be used to address their research question."

Dr Nilsson thinks part of the solution lies in closer Nordic cooperation on relevant processes and regulations. The personal privacy of inhabitants and public trust in the authorities and researchers must

be maintained at today's high levels, however, high-quality metadata (information describing other data) is also necessary to make it easier for researchers to interpret the content of registries and determine whether they are comparable.

"When investigating the correlation between the life and health status of the inhabitants, it makes an enormous difference to have source data from 27 million Nordic individuals rather than five million Danes," she says. "It means we can extract more information about the factors that shape our lives – the education we choose, the diseases we get and what we die of. Increased cross-border data exchange could improve quality of life and health for people across the Nordic region."

"The Nordic countries have gained momentum in registry research, but the train is about to leave the



station and unfortunately this is the last train."

Maria Nilsson,
NordForsk

Photo: Terje Heiestad

The Nordic church books contained information about baptisms, confirmations, marriages and funerals. Photo: majorbonnet/flickr

Dr Nilsson adds:

"But this does not entail weakening the protection of personal privacy. The Nordic countries have similar approaches to legal, technical and ethical issues, so it ought to be possible to achieve better coordination. The Nordic registries are unique in the world, offering an advantage that must be given priority before it's too late."

Vast potential for Nordic added value

She believes there is vast potential for Nordic added value if a good framework is put in place to accelerate the data exchange processes for research across the Nordic region.

"Once upon a time it was the church authorities that collected information on residents, but today the collection of such data is an integral part of the Nordic welfare society with the help of large-scale data banks and a variety of registries. The combination of this data with national ID numbers for individuals presents unique opportunities to study all kinds of correlations across the Nordic region, such as the late effects of medical treatments or the link between health status and occupation," says Dr Nilsson, before elaborating:

"The NordicWelfAir project, for example, is studying the health effects of air pollution. Researchers will identify which emissions are most harmful to health, where the emissions occur and, with the help of Nordic registries, which diseases they can induce in the population. The results are scheduled to be completed by 2020 and will hopefully contribute to good political decision-making that leads to a decrease in Nordic air pollution levels and reduces the frequency of associated deaths or illness."



"Childhood cancer survivors are just as likely as anyone else to have healthy children."

**Professor
Jeanette Falck
Winther,
SALiCCS**

Photo: Magnus Fröderberg / nordnorge.org

LIFE AFTER CHILDHOOD CANCER

The number of cancer survivors among children and young people in the Nordic region has never been greater, but little is known about the challenges this patient group faces in the aftermath of cancer treatment. Survivors of childhood cancer may experience difficulty concentrating, fatigue or depression due to various late effects from the disease and the treatment, and also have an increased risk for a wide array of other diseases. More knowledge is needed about the impacts of childhood cancer on subsequent education, working life and family life. With the help of Nordic health registries, the NordForsk-funded SALiCCS project is taking steps to learn more.

Written by: Tor Martin Nilsen

"We do not know enough about the adult lives of those who survive serious cancers as children," says Professor Jeanette Falck Winther of the Danish Cancer Society Research Center in Copenhagen and Aarhus University. "Do they have a harder time in life than other people? Do they pursue education, find their place in the labour market, start a family? The registries found in the Nordic region can provide unique insights, and this will enable us to determine where to implement measures to improve their quality of life." Professor Winther heads the research project "Adult Life after Childhood Cancer in Scandinavia (SALiCCS): Socioeconomic consequences of long-term survival", which in 2015 was allocated NOK 10 million under NordForsk's Nordic Programme on Health and Welfare.

Fortunately, children comprise only a very small percentage of people diagnosed with cancer in the Nordic region, but the toll on those who experience it is great. Leukaemia, brain tumours and lymphoma are the main paediatric cancer types, and over 80 percent of children survive cancer. Since childhood cancer is relatively rare, it is a difficult field to study

at a national level. Using data from several Nordic countries expands the number of cases exponentially, however, and increases the likelihood of drawing solid conclusions.

"The SALiCCS project," continues Professor Winther, "is an extension of the Adult Life after Childhood Cancer in Scandinavia (ALiCCS) project launched in 2010, which studied nearly 44 000 Nordic childhood cancer patients diagnosed from the 1940s until 2008. That project primarily focused on somatic late effects in childhood cancer survivors, but the SALiCCS project adds socioeconomic data as well. It is exceptional to be able to consider both somatic and psychiatric disease burdens when looking at how these patients cope in life. If, for example, someone has a heart problem or suffers from depression when young, it affects their education and subsequently their ability to work"

Challenges in research using registry data

Originally, Professor Winther hoped the project would include registry data from the five Nordic countries. However, the number of technical, organisational and

ethical obstacles connected to the exchange of data across national boundaries was such that only three countries are participating.

"The legislation in the Nordic countries is not in itself a problem, but problems arise when those who are responsible for the registries in the different countries interpret the legislation differently. In some Nordic countries, certain types of data, such as data related to mental illness, are considered particularly sensitive personal information that cannot be shared across national borders. Such differences between the countries, along with the degree of data accessibility needed to address the research questions posed in the SALiCCS project, are what determined which countries were included in the project. SALiCCS ended up as a collaboration between Finland, Sweden and Denmark, but is nonetheless the largest population-based study in childhood cancer within this research field."

"Research at the Nordic level takes time," adds Professor Winther, "and it takes an especially long time to obtain permission to transfer data between the countries. There are many parties involved, often within each country, and we appreciate NordForsk's efforts over many years to draw attention to the challenges related to data exchange in the Nordic region. Currently, for instance, the SALiCCS project is waiting to see what Statistics Denmark decides in relation to our project and the ability to collect and analyse data from three Nordic countries under one roof. We just have to be patient."

The Nordic region is a unique platform for research

Professor Winther believes the SALiCCS project is a good example of research collaboration with potentially great Nordic added value.

"The use of personal identity numbers and the many registries give us fantastic research opportunities in the Nordic region. This unsurpassed level of detail enables us to track the population from cradle to grave, and merging the data from the Nordic countries gives the analysis statistical strength. This combination creates a platform for research envied by the rest of the world. In addition, Nordic researchers' access to the registries makes us attractive as partners in international studies. I have no doubt that SALiCCS and other projects that make use of Nordic registries generate the highest grade of Nordic added value – because no one else can do what we can," she says with enthusiasm.

High expectations

Although the SALiCCS project is still waiting for data, the researchers have prepared themselves for the time ahead. Variables between the countries have been compared, a review article has been drawn up and published, and Professor Winther reports that the entire team is eager to begin analysing. Expectations are high.

"The results from the SALiCCS project will be worth waiting for since they will be the most wide-ranging and detailed in their field. We hope our research will make a difference for survivors of childhood cancer as it should help us to identify specifically where measures are needed, such as special education at the primary and lower secondary school level, or steps to prevent depression. The entire team believes that the results of this largest and most comprehensive study to date will lead to international recognition in the field of childhood cancer."

At the same time, Professor Winther then adds, "it is important for me to stress that there is no catch-all solution. Cancer types such as leukaemia and brain tumours require different treatments and cause different late effects so the needs for follow-up will differ. First we will look at all childhood cancer survivors before we go deeper into the data and carry out specific studies of the most common childhood cancers. It is also important to remember that very many childhood cancer survivors cope perfectly well and do not need special help in subsequent years. This is something we always want to emphasise."

The way forward

Jeanette Falck Winther is optimistic about the continued activities under the SALiCCS project and recognises the importance of NordForsk's activities to highlight Nordic registry-based research.

"It was a big day for us when we found out about the NordForsk call under the Nordic Programme on Health and Welfare. It is fantastic to have an organisation that helps scientists and clinical researchers at an overall level and facilitates Nordic research cooperation. Being able to help children affected by cancer and their families is close to my heart, and I am thankful that NordForsk has helped make that possible."

"The research and results are important," she goes on to explain, "but what that research can lead to is even more important. The knowledge we generate benefits those who survive cancer, their families, physicians and the health care community. One of the most valuable things research can do is help to raise awareness about an issue and dispel prejudices or ease concerns. For example, it is important that physicians can tell childhood cancer survivors that they are just as likely as anyone else to have healthy children – which is vital knowledge documented in one of my previous international projects. I hope the results from the SALiCCS project can help in similar ways," concludes Professor Winther. "If we can produce results that really matter to someone, then we will have truly succeeded."

nordforsk.org/saliccs

LIFE AFTER CHILDHOOD CANCER

Professor Jeanette Falck Winther, Project Leader for the SALiCCS project, hopes the research results will determine where to implement measures to improve the quality of life of childhood cancer survivors.

Photo: Trine Bukh



HISTORIC BOOST FOR NORDIC PAEDIATRIC CANCER RESEARCH

Every year, several hundred children and young people in the Nordic countries are diagnosed with cancer, and new knowledge is needed to continue to develop effective treatment. NordForsk, the Norwegian Cancer Society and the Research Council of Norway have therefore issued a joint call for proposals with a total of NOK 38 million available for personalised cancer treatment for children. The call is one of several NordForsk-funded activities to promote Nordic cooperation within personalised medicine.

Written by: Tor Martin Nilsen

The number of children surviving cancer is steadily rising, but in addition to increasing survival rates it is important to ensure that children live long, good-quality lives after they have completed their treatment.

"Personalised treatment is emerging as a clear trend in the Nordic countries," says Arne Flåøyen, Director of NordForsk. "This involves giving each patient treatment that is more specifically customised to his or her individual biological characteristics. Not everyone with the same type of cancer should necessarily be given the same treatment – instead, the biological conditions will determine the treatment regime. We are excited to follow the projects being financed and we look forward to their results."

"Each year about 150 children in Norway are diagnosed with cancer," says Anne Lise Ryel, Secretary General of the Norwegian Cancer Society. "Even though cancer treatment has become effective, not

all children survive. Every child who dies is one too many."

Ms Ryel points out that personalised treatment is playing an increasingly important role in cancer treatment, helping to raise survival rates and reduce late effects.

"However, when treatment is more personalised," she continues, "the patient groups become smaller. As a result, each Nordic country on its own often has too small a patient base to conduct national trials. Cooperation across national borders can provide much-needed insight in this context."

Bent Høie, Norwegian Minister of Health and Care Services, welcomes the Nordic call.

"This new initiative on paediatric cancer paves the way for high-quality research conducted across the Nordic countries," he says. "It will yield major benefits for health care services, research groups, and most importantly for the patients themselves."

Nordic Clinical Trial Projects on Paediatric Cancer Treatment

The call for proposals in paediatric cancer research is an activity under the Nordic Trial Alliance within NordForsk's Nordic Programme on Health and Welfare. The objective of the Nordic Trial Alliance is to increase the number of clinical trials carried out in the Nordic region.

Budget: 38 million NOK. Each project may seek a maximum funding amount of NOK 10 million

Anne Lise Ryel, Secretary General of the Norwegian Cancer Society, and Bent Høie, Norwegian Minister of Health and Care Services.



"Each Nordic country on its own often has too small a patient base to conduct national trials. Cooperation across national borders can provide much-needed insight in this context."

Anne Lise Ryel
Norwegian
Cancer Society



NORDFORSK LAUNCHES LARGE-SCALE INITIATIVE IN PERSONALISED MEDICINE

Photo: drop-the-label-movement/unsplash

Personalised medicine is an interdisciplinary research field that will occupy a high place on the Nordic research and innovation agenda in the coming years. NordForsk has therefore joined with a number of Nordic stakeholders on a joint call for proposals to fund Nordic projects targeted towards expanding the use of personalised medicine. The call "Innovations in Personalised Medicine: Towards implementation of personalised medicine in healthcare" has a budget of EUR 15 million and is one of several NordForsk-funded activities to promote Nordic cooperation within personalised medicine.

Written by: Tor Martin Nilsen

"The call will promote the development of innovations related to the implementation of personalised medicine for Nordic citizens and health care systems," says Arne Flåøyen, Director of NordForsk. "There are many issues that pose obstacles to such implementation, for instance in restrictions set out in the regulatory framework. Overcoming these obstacles will require close cooperation between the research community, industry and the health care sector – as well as cross-border, cross-disciplinary innovation networks.

Personalised medicine is more relevant than ever before. New knowledge will make it possible to provide the individual patient with more precisely targeted diagnostics and treatment. Professor Jørgen Frøkiær, head of the Department of Clinical Medicine at Aarhus University and chair of the programme committee for the call, explains that personalised medicine opens an entirely new door for the medical treatment of patients.

"The concept of personalised medicine has existed for many decades, but now the revolutionary breakthroughs in molecular biological methods have paved the way for completely new opportunities in targeted medical treatment. We can customise the medicine for each individual patient. Personalised medicine will also make it possible to minimise unnecessary and ineffective treatment, with fewer side effects for each patient."

Professor Frøkiær says that personalised medicine has been used for cancer and metabolic disorders for some time. New knowledge gleaned from large-scale sequencing studies yields genetic information to be used in a personalised medical perspective in other areas as well, such as psychiatric conditions.

"The need for personalised medicine can also be viewed in light of the rising costs associated with modern medical treatment principles," continues Professor Frøkiær. "New treatment methods are introduced because they have been shown to be effective, but their efficacy may vary widely from patient to patient.

Innovations in Personalised Medicine: Towards implementation of personalised medicine in healthcare

The sixth funding announcement under NordForsk's Nordic Programme on Health and Welfare. Projects allocated funding will start up in 2019.

Funders: Innovation Fund Denmark, Business Finland, Icelandic Centre for Research (Rannís), Research Council of Norway, Swedish Governmental Agency for Innovation Systems (Vinnova) and NordForsk.

Budget: EUR 15 million

NORDFORSK LAUNCHES LARGE-SCALE INITIATIVE
IN PERSONALISED MEDICINE

The effect may be pronounced for some and insignificant for others, while some patients may only get the side effects. The treatments are often very expensive, and thus it is both economically and ethically unsound not to do everything possible to target the treatment in order to maximise efficacy for the individual, and avoid treating those patients who would not respond.

Professor Frøkiær points out that research at the Nordic level is extremely valuable because a population base of 27 million will produce more reliable statistical results compared to corresponding studies at a national level.

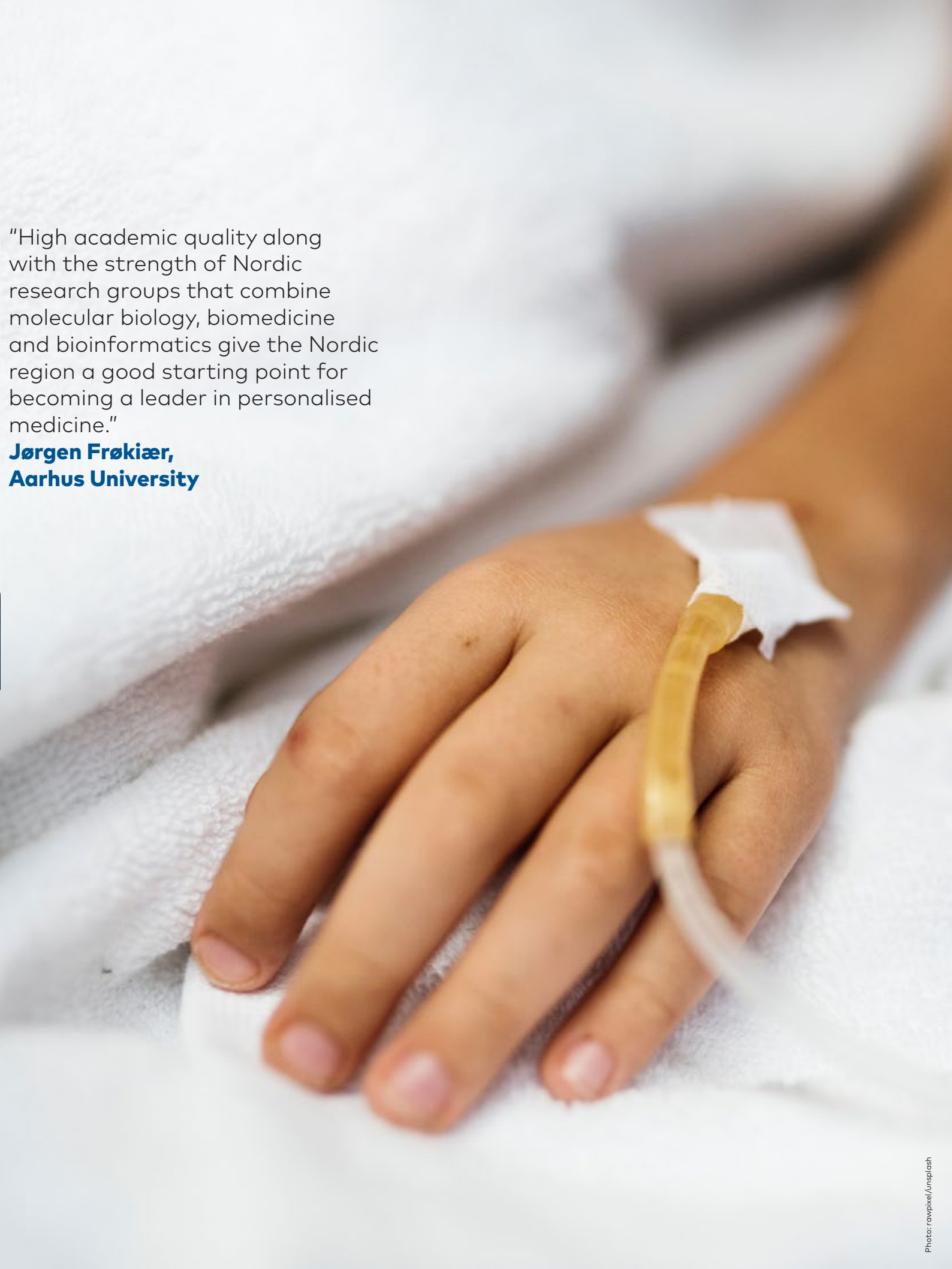
"Patients with rare diseases can potentially benefit enormously from personalised medicine. Under this call, researchers can conduct coordinated Nordic studies of these diseases. High academic quality along with the strength of Nordic research groups that combine molecular biology, biomedicine and bioinformatics give the Nordic region a good starting point for becoming a leader in personalised medicine," concludes Professor Frøkiær.

Photo: Aarhus Universitet



"High academic quality along with the strength of Nordic research groups that combine molecular biology, biomedicine and bioinformatics give the Nordic region a good starting point for becoming a leader in personalised medicine."

Jørgen Frøkiær,
Aarhus University



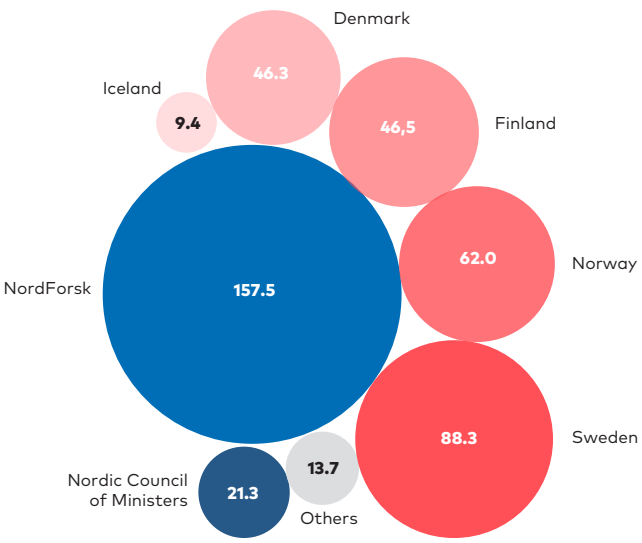
NordForsk's Programme on
Health and Welfare

The overall goal of the Nordic Programme on Health and Welfare is to improve health in the Nordic countries by finding solutions to societal and public health challenges through high-quality research.

The programme is a cooperative effort between the Academy of Finland; Independent Research Fund Denmark | Medical Sciences; Icelandic Centre for Research (Rannís); Research Council of Norway; Swedish Research Council for Health, Working Life and Welfare (FORTE); Swedish Research Council; and NordForsk. To date the programme has issued seven calls for proposals, several including funding from additional organisations.

Budget: NOK 445 million.

nordforsk.org/healthandwelfare



Total budget: NOK 445.1 million

CONCERTED EFFORT TO DEVELOP PERSONALISED MEDICINE

Major advancements in many fields now make it possible to personalise medical treatment. Still, there are too few products facilitating this in practice, particularly when it comes to treatment that patients themselves carry out at home. The Nordic POP project is looking to change this. "Our goal is to develop pharmaceutical products and technological solutions of the future, where personalised medical treatment is the common link," says Professor Ingunn Tho of the Nordic POP project and the University of Oslo School of Pharmacy.

Written by: Tor Martin Nilsen

The Nordic POP (Patient Oriented Products) project was allocated NOK 42 million under NordForsk's Nordic University Hubs call for proposals in 2017, in addition to NOK 84 million from the universities. The project involves ten Nordic university groups working with pharmaceutical research and development of medicines. Another five universities in Estonia, Poland and northern Germany are affiliated with the consortium.

"Research of this kind of requires many advanced instruments, and it is impossible for one group to carry out everything," explains Professor Tho. "So in this collaboration, each group brings its unique expertise and infrastructure to the project to maximise the benefit. Even though the Nordic region comprises several countries, it is a relatively small geographic area with short distances between our universities. With support from NordForsk we researchers can easily and cheaply travel to a partner to learn or conduct certain parts of the research activity there."

Pharmaceutical science is a broad field and the Nordic POP project applies an interdisciplinary approach combining biology, medicine, chemistry, physics and technology in order to develop new knowledge and new products.

"We have structured the research into six thematic work packages," she adds (products, technology, barriers, analysis, high-resolution analysis/synchrotron and modelling), "but there are definite interactions between the work packages and many of the researchers and research projects work across multiple areas."

Professor Tho believes a key argument for a Nordic focus on precisely this field is that there are already strong research groups with wide-ranging expertise in several Nordic countries. The Nordic POP project seeks to build on this platform and has high ambitions for promoting the Nordic region as a competency centre for patient-oriented products in the near future.

Nordic POP

is part of the Nordic University Hubs initiative, NordForsk's funding instrument for university cooperation in the Nordic region. The Nordic POP project will develop future pharmaceutical products and technological solutions.

Nordic POP is one of several NordForsk activities aiming to enhance Nordic collaboration on personalised medicine and the Nordic POP project's first annual network conference will be held in Oslo in January 2019.

Partners: University of Iceland, Chalmers University of Technology, University of Helsinki, UiT Arctic University of Norway in Tromsø, Åbo Akademi University, University of Oslo, Uppsala University, University of Southern Denmark, and University of Eastern Finland.

Budget: Nordic POP was allocated NOK 42 million in 2017. In addition to NOK 84 million from the universities, the total budget amounts to NOK 126 million.

"We have ambitious goals in many areas – in terms of acquiring new knowledge and publishing in highly ranked scientific journals, developing innovative products and technologies that can foster entrepreneurship, and not least training young researchers by giving them the chance to learn from the best as well as developing talented researchers who can succeed in the context of the ERC (European Research Council)."

Professor Tho points out that the Nordic POP project offers significant Nordic added value by bringing together a unique combination of cross-disciplinary competence and infrastructure, and that the distribution of tasks across national borders will greatly benefit the Nordic research community.

"The Nordic pharmaceuticals industry will also benefit from a large-scale exchange of skilled candidates for positions between the countries, and another of our goals is to encourage the academic environments to interact more with the Nordic pharmaceuticals industry. In addition, the groups become better known, and we are looking to increase the mobility of researchers who leave academia after completing their Ph.D. degrees."

The core Nordic POP members knew each other before the project and there have been a number of collaborative efforts across the Nordic countries, but Professor Tho says these were mostly based on individuals. The funding from NordForsk has opened up new opportunities.

"Without question, the support from NordForsk puts us in a position to think within a larger framework and realise new ideas. It gives young researchers a completely unique opportunity to learn from many experienced researchers and to build a network that reaches far beyond the individual institution. Without the NordForsk support, we would not be able to offer so many exciting workshops and seminars or support researcher mobility in nearly the same way," Professor Tho says enthusiastically. "The NordForsk funding gives us a real boost and we aim to take full advantage of the opportunities it affords."



Photo: Aadne Christian Tho

"The Nordic POP project offers significant Nordic added value by bringing together a unique combination of cross-disciplinary competence and infrastructure."

Ingunn Tho, Nordic POP

Discrimination, marginalisation and segregation are surprisingly common in the Nordic schools of today. Based on several years of research, a group of academic researchers recently came together with one mutual goal – to help policymakers create a more equal and equitable educational system in the Nordic countries. The result is three clear guidelines.

Written by: Charlotta Järf

New guidelines for policymakers

HOW TO PROMOTE EQUALITY AND EQUITY IN NORDIC EDUCATION

More than 100 researchers specialised in Educational Sciences, representing 8 countries at 14 universities, have spent years examining social justice in education from a range of angles. The researchers are all united by the cross-national research programme Education for Tomorrow, which is funded by NordForsk. Based on a synthesis of this research, a group of researchers in the Nordic countries are now

appealing to policymakers in Nordic countries to adjust educational policies and curricula in a more equal and equitable direction.

The group of researchers are members of the Nordic Centre of Excellence Justice Through Education (JustEd), and they are now offering three specific guidelines that explicitly address and counteract

social segregation, marginalisation, discrimination, and exclusion in the educational system. Professor and JustEd Director Gunilla Holm, University of Helsinki, has been leading the group of researchers:

“Our research shows that marginalisation, discrimination and exclusion are surprisingly common in Nordic schools. To make a change we need to address the issues on both a political and a practical level. Exclusion and marginalisation of students are often based on differences related to social class, gender, sexuality, ethnicity, disability, locality, and language. Additionally, market-based and privatisation reforms in the Nordic countries have detrimental consequences for educational justice,” says Gunilla Holm.

The new guidelines present suggestions for how to deal with these challenges on politically and pragmatically through policymaking and practical tools.

Ágúst Hjörtur Ingþórsson, Head of Education and Culture Division at the Icelandic Centre for Research (RANNÍS), is very pleased with the report:

“The policy implications in this report are unique, because they are based upon a consensus reached by a large group of researchers from the Nordic countries. I think they represent substantive scientific knowledge and the policy implications therefore need to be taken seriously,” says Ingþórsson and continues:

“To some extent you can compare this to the early days of the environmental

debate, when isolated and individual research was not significant enough to convince anyone that global warming would be inevitable based on the energy policies of the day. Policies will usually have consequences, and some of them are unexpected or counter to the policy proponent's intent: it is the role of science to investigate the consequences of public policies and provide the scientific evidence to assess these. This is what the researchers have done, and the policy implications are quite profound and worthy of serious consideration.”

Ingþórsson hopes that the policy implications will be discussed in both professional and political circles that deal with the shaping of education policy and its implementation.

“The current Icelandic Minister of Education has started working on an education policy for Iceland towards 2030, and I hope that consideration will be given to the key messages of the policy implications in the consultative process,” he concludes.

Justice through Education (JustEd)

Is a Nordic Centre of Excellence of 14 university partners in 8 countries and over 100 researchers. The centre started its activities in August 2013 as part of the NordForsk programme “Education for Tomorrow”.

The guidelines are the following:

[1] CREATE EQUAL ACCESS TO SCHOOLS AND EDUCATION

Prevent and counteract market-based and privatisation policy reforms contradicting fair and equal education.

[2] COUNTERACT DISCRIMINATION AND MARGINALISATION

In curricula and teacher education, explicitly address discrimination and marginalisation based on social class, gender, sexuality, ethnicity, disability, locality and language.

[3] BALANCE CONTENT COVERAGE, STUDENT INITIATIVE AND ACTIVE PARTICIPATION

Balance student autonomy and active participation with cognitively demanding learning environments and use of digital technologies in the classrooms.



Photo: Charlotta Järf. Illustration: Elisabeth Moseng

THE NORDIC REGION IS A GOLD MINE FOR EDUCATION RESEARCHERS

NEW CENTRE TO USE VIDEO RECORDINGS TO STUDY THE QUALITY OF TEACHING IN NORDIC CLASSROOMS

Research shows that the individual teacher's practice is the single most important factor for learning. Researchers will use video recordings to study how different teaching practices and interaction in the classroom affect the ability of pupils to learn.

Written by: Jakob Chortsen



THE NORDIC REGION IS A GOLD MINE FOR EDUCATION RESEARCHERS NEW CENTRE TO USE VIDEO RECORDINGS TO STUDY THE QUALITY OF TEACHING IN NORDIC CLASSROOMS

Quality in Nordic Teaching (QUINT), a new Nordic Centre of Excellence, is part of NordForsk’s Education for Tomorrow programme, which is now entering its second phase. The centre intends to use video recordings from Nordic classrooms to study teaching quality and find out more about how teaching makes a difference for student learning and engagement across school subjects in mono- and multicultural classrooms. The centre will also work to promote the use of video recordings in continuing teacher training.

Professor Kirsti Klette of the University of Oslo explains:

“Everyone agrees that education is important. But the field of education is characterised by, on the one hand, a wonderful mix of grand ideas on which there is largely consensus, and on the other, by a somewhat ineffective, practical professionalisation framework for putting these ideas into practice. We want to encourage a shift from the notion of the best teaching practice to actually achieving it.”

Professor Klette also states that the QUINT researchers will be comparing video data from all the Nordic countries to gain insight into what characterises good teaching quality at a Nordic level.

Quality in Nordic Teaching (QUINT)

is a collaboration between researchers from across the Nordic region. The centre will study teaching quality, but will also investigate pupils’ learning and engagement, how to use video footage as an effective tool in teacher education, and whether the use of video technology and other digital systems can create new forms of collaboration between researchers and practitioners.

Funders: Academy of Finland, Swedish Research Council, Research Council of Norway, Icelandic Ministry of Education, Science and Culture, Danish Agency for Science and Higher Education, and NordForsk.

Budget: NOK 25 million,
nordforsk.org/quint

“Education research is given strong focus throughout the Nordic region, and the research community in the field is relatively cohesive. This enables researchers to generate rich data very quickly, and this may have major implications for other countries as well. Data from the classrooms can help us to carry out systematic research on differences and similarities across the Nordic countries. Because when all is said and done, the quality of education depends on the quality of the specific teaching situation and the interaction between teachers and students in the classroom.”

Minimal distance between researchers and classrooms

As Professor Klette goes on to explain, the video recordings can help to define some indicators of effective teaching, based on factors such as pupil participation, and how the teacher provides support structures and presents new subject content. These indicators can then be used in teacher education to discuss, for instance, what makes one teacher more capable than another.

“When it comes to education and the framework for teaching, such as curricula, teacher qualifications and so on, the Nordic countries are very similar at a structural level. But there are also some very interesting cultural differences that emerge. The fact that we can systematically use video recordings to examine similarities and differences among the Nordic countries is a small gold mine for researchers. The Nordic region becomes a “small-scale” laboratory where we can test the use of technology in the classroom. For example, the use of mobile phones is banned in many Finnish classrooms, whereas Norwegians take a completely different approach in this regard. By using video recordings, we can look at different ways of solving some of the challenges related to the use of mobile phones, as well as study what is universal as opposed to more culturally based.”

“Video is a great tool for researchers since it provides a concrete portrayal of an authentic situation.”

**Kirsti Klette,
University of Oslo**

Professor Klette also believes that the Nordic countries represent an interesting case for exploring broader educational objectives such as citizenship and pupil participation.

“Using video data makes us more concrete when it comes to actual teaching practice in teacher training and teachers’ continuing education since it minimises the distance between research and the classroom.”

Video portrays an authentic situation

The new element here is that the research is raised to a Nordic level, where a phenomenon is studied systematically across the Nordic countries. Professor Klette believes that many of the previous Nordic education projects mostly provide narratives of the individual Nordic countries.

“Other than the PISA survey and a few other international reports, no one has systematically reviewed the data in the way that we plan to. In other words, the collection of comparative data from Nordic classrooms represents something completely new that can improve both teacher education and teaching practices in each country,” says Professor Klette, who concludes:

“Video is a great tool for researchers since it provides a concrete portrayal of an authentic situation.”

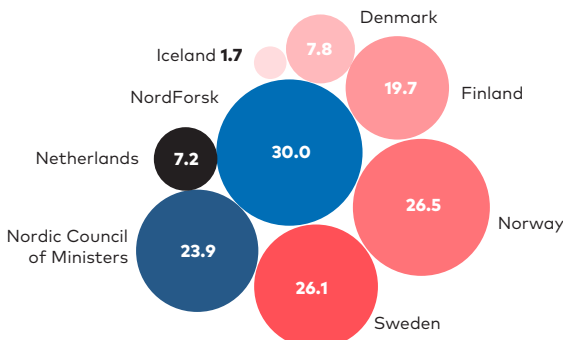
NordForsk’s Education for Tomorrow Programme

aims to generate new knowledge about the Nordic education systems that can better equip them to meet current and future societal challenges. Phase 2 focuses on linking research with practice within the education and learning area and consists of a Nordic Center of Excellence and 3 research projects.

Funders: Academy of Finland, Swedish Research Council, Research Council of Norway, Ministry of Education, Science and Culture (Iceland), Danish Agency for Science and Higher Education, Netherlands Initiative for Education Research and NordForsk.

Budget: NOK 142.8 million.

nordforsk.org/education



Total budget: NOK 142.8 million



Illustration: Elisabeth Moseng
Photo: Priscilla Du Preez/unsplash.com.

INTERNATIONAL RESEARCH ON INCLUSIVE EDUCATION

The Netherlands Initiative for Education Research (NRO) and NordForsk have entered into an agreement on research cooperation aimed at building bridges between research, practice and policy development to generate results for application at a specific level in the area of education. The Nordic countries and the Netherlands agree that they have much to learn from one another.

Written by: Jakob Chortsen

"We make a targeted effort to build bridges between researchers, practitioners and policymakers in the Netherlands. Using a variety of instruments and tools we can show practitioners and policymakers how they can benefit from research. I think our most important contribution to this Nordic-Dutch collaboration is to illustrate how we work to close the divide between these different groups," states Niels Rijke, NRO Policy Officer and International Secretary. He adds:

"Our primary task is to fund research activity, but the NRO's most important mission is to ensure that the research makes a real difference – both in terms of

educational practices and in developing new policy for the field of education. We help to promote knowledge sharing between researchers, practitioners and politicians by offering different platforms that provide easily readable research findings."

Common challenges and many similarities

Despite its existing targeted efforts, the Netherlands still has much to learn from the Nordic countries, according to Mr Rijke.

"When it comes to 'inclusive education', for example, the Nordic countries are far ahead of us. This is one of the main reasons why many Dutch schools are so interested in the Nordic countries," he explains.

Niels Rijke believes that cooperation between the Netherlands and the Nordic countries will yield great benefits, as they share common challenges and many similarities.

"One thing we have in common is a major influx of immigrants and the question of how to integrate and educate immigrant children in the best possible way. But also, on a more general level, Nordic countries and the Netherlands share a very similar set of values when it comes to the understanding of the welfare state and opportunities for our populations. We and the Nordic countries are well-balanced as research partners, and we share a great degree of mutual trust





INTERNATIONAL RESEARCH ON INCLUSIVE EDUCATION

– we can rely on one another. This also makes it easier for us to communicate with each other,” he adds.

Cooperation leads to global visibility

Krista Varantola, Chair of NordForsk’s Education for Tomorrow programme committee, is also very pleased about the collaboration with NRO, and sees the potential for an enormously positive impact throughout the entire Nordic region.

“At NordForsk we attach great importance to ensuring that research makes a difference. We can achieve this, for example, when we include the field of practice as a genuine partner and not just as an object of research. Here the Dutch are known for their advanced research and international profile in education research and their ability to link practice with policy development.”

She goes on to explain why this is useful to the Nordic region:

“This cooperation can help to give Nordic researchers and Nordic research collaboration a more visible

Nordic-Dutch research collaboration

Together with the Netherlands Initiative for Education Research (NRO), NordForsk is providing funding for three research projects under the joint call for proposals, Inclusive Education across Borders.

Inclusive education implies that all children and young people should be able to attend school regardless of ethnicity, sex, religion and disability. The objective is for researchers to take advantage of the ability to compare schools and educational programmes in Nordic countries and in the Netherlands.

Funders: Academy of Finland, Swedish Research Council, Research Council of Norway, Ministry of Education, Science and Culture (Iceland), Danish Agency for Science and Higher Education, Netherlands Initiative for Education Research and NordForsk.

Budget: NOK 20 million.

nordforsk.org/education



profile in a European, as well as a global, context. It will also make it easier for Nordic researchers to gain entry into prominent networks in this area of research,” she states, adding:

“I believe that both parties can learn to give a great deal to one another and that “Inclusive Education across Borders” represents one of the most important thematic areas in the field of education in our multicultural environments. High-quality, research-based methods in the field will enable our educators take part in shaping a more harmonious society.”

NordForsk and the Netherlands Initiative for Education Research are providing NOK 20 million in funding for research on new learning and education environments and practices. Photo: Charlotta Järf

“This cooperation can help to give Nordic researchers and Nordic research collaboration a more visible profile in Europe.”

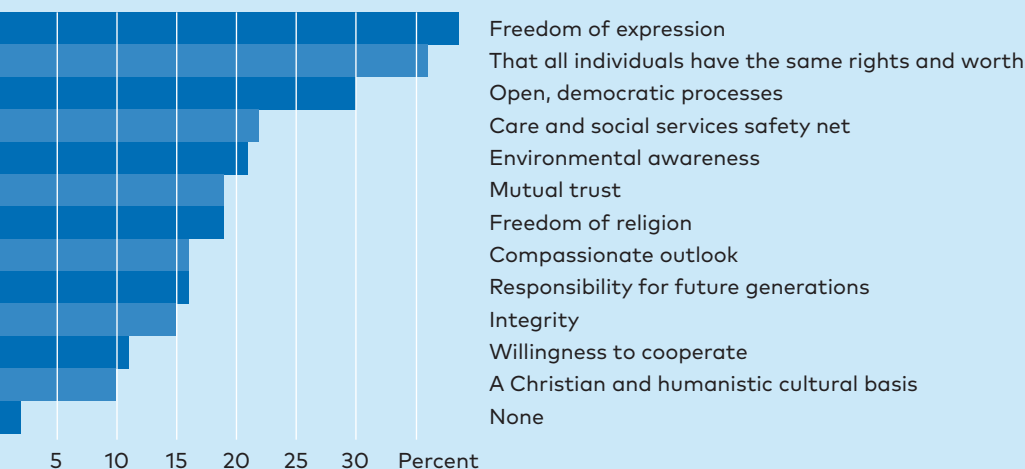
Krista Varantola,
Professor Emerita

“I think our most important contribution to this Nordic-Dutch collaboration is to illustrate how we’ve managed to close the divide between research, the field of practice and politicians.”

Niels Rijke, NRO

NEW MOMENTUM FOR RESEARCHERS ON NORDIC AFFAIRS

From the survey "Ett värdefullt samarbete: Den nordiska befolkningens syn på Norden" conducted by the Nordic Council and Nordic Council of Ministers: "Do you consider any of the following values to be typically Nordic, i.e. that these are values shared by all inhabitants of the Nordic countries"?



The new university research hub "Reimagining Norden in an Evolving World" (ReNEW), is giving research groups that produce and compile knowledge about the Nordic region and its place in the world a greater opportunity to exchange knowledge, personnel, experience and resources.

Written by: Eivind Sætre

As the recent years' focus on Nordic noir, cuisine and design attests, the Nordic countries have become more prominent in international, economic and cultural terms than might be expected from a region with a combined population of 27 million. But what is it that makes the Nordic region so special? What is it that distinguishes us as a society and a people up here in the North? And is the rest of the world's impression of Nordic countries in tune with reality? These issues and more are being studied by the ReNEW university consortium.

The consortium will employ activities such as exchange programmes, researcher training, conferences and seminars to establish stronger networks and create synergies between Nordic researchers, helping to create a shared "Nordic attitude". According to Dr Peter Stadius, who heads the new university research hub, there is a flawed approach when it comes to thinking and researching in a "pan-Nordic" way:

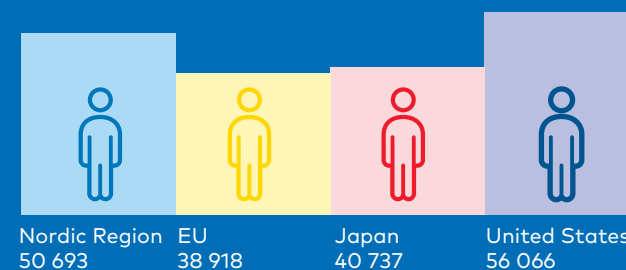
"Academics and politicians often only dare to speak about their own nations. They talk about what is 'typically' Swedish, Finnish or Norwegian, for example, without seeing that the same could actually be said for all the Nordic countries. We want to do something to change this at ReNEW, using our hub to form a community for researchers where it is both allowed and natural to think outside the framework of a single nation. We want to train academics who think at the Nordic level, who dare to speak about other Nordic countries and pan-Nordic subjects. Who can shed light on what is Nordic and not just national," adds Dr Stadius.

"We're going to focus on the idea of conducting research on the Nordic region. European Studies is a major subject in universities the world over, but 'Nordic Studies' is something we haven't introduced before."

Population. Million
Source: Nordic Statistics 2017



GDP Per Capita pps, usd
Source: Nordic Statistics 2017

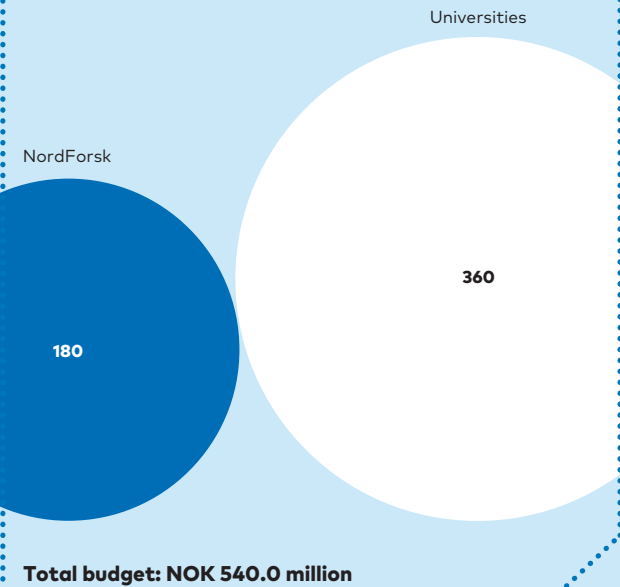


Nordic University Hubs

A new NordForsk initiative to contribute to long-term capacity building by means of top-up financing for university consortia. These consortia or hubs may cover any scientific discipline. NordForsk contributes one-third of the funding, while the university consortia cover two-thirds. After three years the university consortia undergo evaluation. If a consortium's evaluation is positive, NordForsk will provide additional support for another three years. The universities pledge to support the consortium for six years, regardless of the evaluation results. This ensures that Nordic-level funding goes to activities that the universities themselves prioritise and that maintain high quality. In late 2017 the NordForsk Board, decided to fund the following consortia:

- Nordic Sound and Music Computing network
- Nordic POP (Patient Oriented Products)
- NordPlant — A Climate and Plant Phenomics Hub for Sustainable Agriculture and Forest Production in Future Nordic Climates
- Nordic Consortium for CO2 Conversion (NCCO2)
- Reimagining Norden in an Evolving World (ReNEW): An Excellence Hub in Research, Education and Public Outreach.
- HI2OT: Nordic University Hub on Industrial Internet of Things

nordforsk.org/unihubs



Nordic-related knowledge for all

Knowledge dissemination is a key activity at the new hub and the consortium will compile and make existing and new Nordic-related knowledge available via a web portal. This information is to be easy to access and understand for non-academics as well.

"We will be disseminating reliable information about Nordic conditions, focusing first and foremost on Nordic history and then on politics, society and culture. We will produce encyclopaedia articles, video clips, ebooks, games, quizzes and podcasts in addition to source materials such as policy documents, speeches, photographs, archive films, etc. The same group behind the award-winning Danish history website danmarkshistorien.dk is responsible for the web portal," Dr Stadius explains.

Also lined up is a book series with seven or eight volumes of information and discussions about Nordic issues.

"We are also trying to reach out to relevant researchers outside the ReNEW consortium. Everyone is welcome to participate in our workshops and conferences. We're trying to include all the interesting research taking place and to pull relevant researchers into a new forum that brings everyone together. Things develop at a very different pace when people don't work in isolation," states Dr Stadius.

Nordic-level funding promotes stability, activity and mobility

"Thanks to the Nordic University Hubs initiative, the ReNEW hub is receiving the long-term, financial backing it needs to forge deeper, more clearly-defined structures for cooperation between Nordic researchers."

Dr Stadius explains that the funding allocated via the Nordic University Hubs has also created new momentum for Nordic affairs researchers within their own institutions.

"We see that this has given us a stronger position, so it's a win-win situation. For example, Nordic-level funding has made it possible for us to organise workshops, which in turn has given us the opportunity to seek additional funding elsewhere. We have also been able to establish some new positions at the universities, which demonstrates the value of the universities' matching funding when it comes to expanding in the long-term."



Photo: Linda Tammisto

"We want to train academics who think at the Nordic level, who dare to speak about other Nordic countries and pan-Nordic subjects. Who can shed light on what is Nordic and not just national."

Peter Stadius,
University of Helsinki

forward and to get the input and perspectives of the younger generations."

The hub is also part of a network involving strategic partners such as Fudan University in Shanghai, Boston University and Harvard University. "At the moment we're putting together a research stay at Harvard for a postdoctoral fellow. Opportunities like this enable us to attract good minds."

"In addition to promoting mobility and knowledge exchange, we ultimately want to ensure that new research yields concrete results. Now everything is in place to consolidate and attract talented researchers, and we're confident that they will come," Dr Stadius concludes. "I am very optimistic about our future collaborative activities."

Reimagining Norden in an Evolving World (ReNEW)

A university consortium that brings together existing Nordic research groups that carry out research on the Nordic region. The ReNEW consortium focuses on Nordic-related knowledge in the humanities and social science disciplines.

ReNEW is a collaboration between University of Helsinki, University of Oslo, Södertörn University, University of Iceland, Copenhagen Business School, and Aarhus University.

Budget: NOK 42 million through NordForsk's Nordic University Hubs initiative, and NOK 84 million from the participating universities.

nordforsk.org/renew

RESULTS FROM THE TOP-LEVEL RESEARCH INITIATIVE

The Top-level Research Initiative was the largest joint Nordic research and innovation initiative to date.

It was created in 2008 by the prime ministers of the five Nordic countries, and aimed to involve the very best agencies and institutions in the Nordic region, and promote excellent research and innovation in order to make a Nordic contribution towards solving the global climate crisis.

The budget of the programme was DKK 400 million over five years.

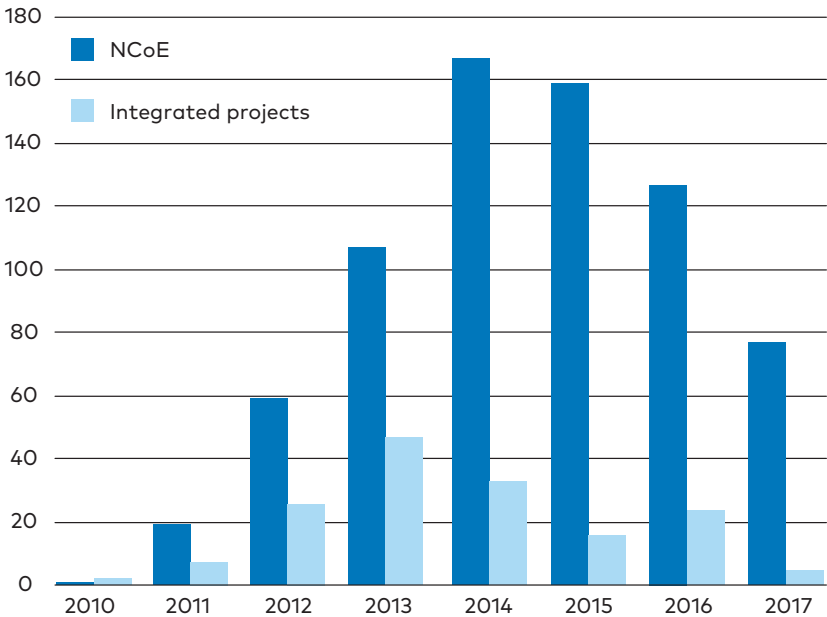
The results and impacts that the initiative has had, as well as the Nordic added value it has led to, have been evaluated in a new report found at toppforskningssinitiativet.org. A handful of the results are presented here.

The initiative consisted of the following six sub-programmes:

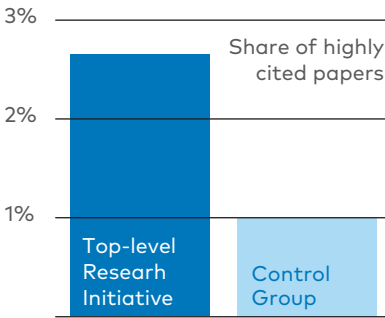
- Effect studies and adaptation to climate change
- Interaction between climate change and the cryosphere
- Energy efficiency with nanotechnology
- Integration of large-scale wind power
- Sustainable bio-fuels
- CO₂ - capture and storage

The initiative also included:

- Advanced climate modelling
- Social sciences and humanities
- A focus on the Arctic area



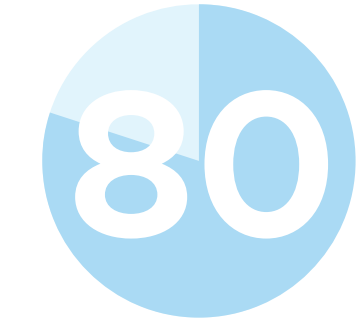
Number of Scientific publications: The research funded by the TRI is generally of high or very high scientific quality.



Highly cited papers

The reference is a set of publications published the same period within the same research area. Control group is set at 1 % highly cited papers. Within the TRI we find 23 highly cited papers for the period 2010–2017.

The share of highly cited papers in the Top-level Research Initiative is 2.6%, more than twice the value of the control group.



Publications from the Top-level Research Initiative tend to be published in journals with high impact.

Approximately **80%** of publications from the Top-level Research Initiative are published in journals with higher impact than the average publication in the control group.



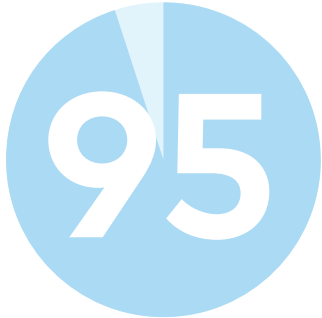
81 PhDs (co)funded by the Top-level Research Initiative

39 PhDs have remained in the university sector, **15** of these have moved to new universities

11 PhDs are currently employed by companies, **6** of these in companies involved in the Top-level Research Initiative's projects

17 PhDs are currently at research institutes and **7** are employed in public administration

10 out of **11** PhDs now employed by companies originate from integrated projects



Research collaboration

95% of surveyed researchers say that TRI has contributed to increased cooperation among Nordic research institutions, e.g. new projects, joint publications, exchange of PhD students and data sharing.

The bibliometric analysis reveals several intra-Nordic publication cluster formations, based on TRI projects.



Svalbard. Photo: Terje Heiestad

SELECTED CONCLUSIONS THE TOP-LEVEL RESEARCH INITIATIVE HAS:

- attracted a large amount of additional funding,
- contributed to increased and sustainable Nordic research collaborations that would otherwise not have been possible,
- involved expertise not available in only one country, making Nordic collaboration rational and efficient,
- increased visibility, attractiveness and competitiveness of Nordic researchers or research groups for international consortia,
- contributed to the training of at least 81 PhD candidates,
- incrementally improved scientific methods in several research areas,
- created new contacts and partnerships for the participating companies,
- produced several examples of results that have reached application in industry.

[Toppforskningssinitiativet.org](http://toppforskningssinitiativet.org)

NEW NORDIC PROGRAMME ON SUSTAINABLE URBAN DEVELOPMENT AND SMART CITIES

Researchers whose work is targeted towards promoting sustainable societies are invited to participate in a new Nordic research programme on sustainable urban development and smart cities. A call for proposals will be announced in early 2019.

Written by: Iiris Tarvonen

Urbanisation is a global megatrend. By 2050, two-thirds of the global population is expected to live in cities. According to UN Sustainable Development Goal 11, "Sustainable cities and communities", cities at their best provide a platform for new ideas, science and economic as well as social development, but a high population density poses challenges to health, safety and the environment. There is a great need for new knowledge on how to make cities sustainable.

In response to this, NordForsk has established the research programme "Sustainable Urban Development and Smart Cities". The theme of the programme is sustainable society and smart use of modern technologies. A call for proposals will be issued in early 2019.

"A majority of the population in the Nordic region is already living in cities. If we are to develop our democracies to include all inhabitants and enable them to take active part in our democracy, we not only need new knowledge on sustainable development and city planning, but also knowledge on how to integrate all the pillars — that is the social, the environmental and the economic — in sustainable development", says Ethel Forsberg, Director General of Forte (the Swedish Research Council for Health, Working Life and Welfare) and chair of the new programme committee.

The growth in the Öresund Region and other border regions clearly show that the societies and regions in the Nordic countries are expanding across their national borders.

"The programme will generate knowledge for policy development throughout the Nordic region, and it will also contribute to and be well aligned with other existing initiatives at both the national and the European level," Forsberg states.

The content and objectives of the programme will be described in more detail in the call that will be published at: nordforsk.org/urbandevelopment



Photo: Yacidi Levy / norden.org



Photo: Alex von Guttentach-Lindau / pixabay.com



Photo: Shutterstock



Photo: Yacidi Levy / norden.org

BROAD COLLABORATION IS A KEY ELEMENT WITHIN ARCTIC RESEARCH

Rauna Kuokkanen, Professor of Arctic Indigenous Studies at the University of Lapland, has been appointed as the chair of the Programme Committee for NordForsk's Responsible Development of the Arctic programme. She sees broad collaboration as a key element within Arctic research.

Written by: Tor Martin Nilsen, Iiris Tarvonen

"The programme itself provides an excellent and unique opportunity for Nordic collaboration in Arctic research, and it's great to see how it strives to bring natural and social sciences together as equals in a field that has traditionally been dominated by natural sciences", says the new chair.

The cross-disciplinary programme aims to generate new insight into the challenges and opportunities related to developments in the Arctic region. The programme funds four Nordic Centres of Excellence.

Professor Kuokkanen is looking forward to working with the programme. She is eager to see the preliminary results from the four centres and addresses the programme's future potential to act as an international network facilitator:

"I think NordForsk and the programme can play a key role in creating a distinctive network of research councils and grant organisations in the Arctic by actively involving Canada, the US and Russia in its work. This requires time, however, which in turn would mean that the programme needs to deliberate carefully and discuss its longer-term vision and

plans. I'm particularly thrilled to see the programme expanding to increasingly involve indigenous communities and scholars in Arctic-related research," she concludes.

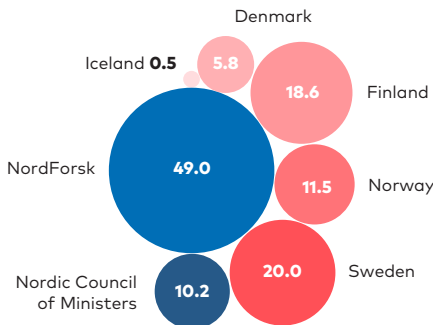
Responsible Development of Arctic

The NordForsk programme will generate new, cross-disciplinary knowledge of highest international quality, about the opportunities and challenges facing the Arctic region. Four Nordic Centres of Excellence were launched in 2016.

Funders: Icelandic Centre for Research (RANNIS), Nordic Council of Ministers, Swedish Research Council, Research Council of Norway, Danish Ministry for Higher Education and Science, Academy of Finland, NordForsk.

Budget: NOK 115,5 million.

nordforsk.org/arctic



Total budget: NOK 115.5 million



Professor Rauna Kuokkanen's current areas of research include comparative indigenous politics, indigenous legal and political traditions, indigenous women's rights and Arctic governance. She was born in Ohcejohka (Utsjoki) in Lapland.

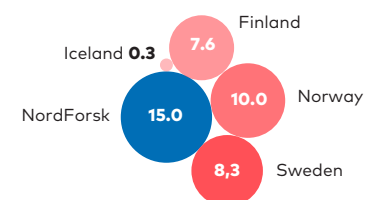
Photo: Anna Muotka

NORDFORSK PROMOTES GENDER BALANCE IN THE NORDIC INNOVATION AND RESEARCH AREA

NordForsk promotes gender balance in the research and innovation area. The aim of this NordForsk programme is to promote gender balance in leadership positions in research and innovation by pinpointing the reasons for the skewed gender ratios in senior

positions and identifying the measures needed to remedy this. NordForsk and national funding agencies in Finland, Iceland, Norway and Sweden are providing approx. EUR 5 million in funding over a 5-year period.

nordforsk.org/gender



Total budget: NOK 41.2 million

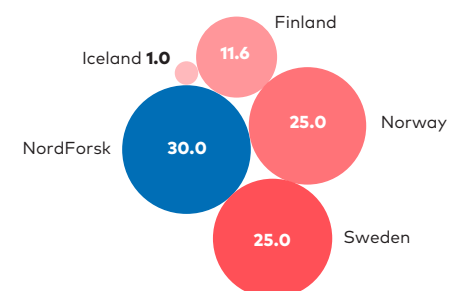


NORDFORSK ADVANCES THE TRANSITION TO THE BIOECONOMY

The Nordic Programme on Bioeconomy gathers together over 100 partners representing research and development, industry, public bodies and environmental agencies seeking to advance the bioeconomy in the Nordic countries. This

includes a focus on the blue bioeconomy – the sustainable use of renewable aquatic natural resources. The programme has a budget of approximately NOK 90 million.

nordforsk.org/bioeconomy



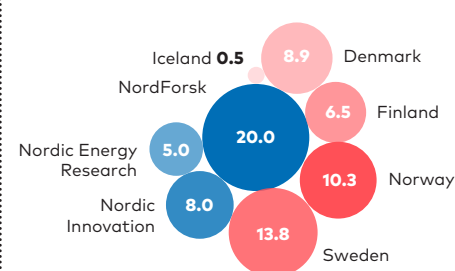
Total budget: NOK 92.6 million

COOPERATION FOR A SUSTAINABLE NORDIC SOCIETY

Nordic Innovation, NordForsk and Nordic Energy Research have joined forces on the research and innovation programme Green Growth. To achieve the ambitious climate goals set by the Nordic countries, an extensive green transition is needed

in all areas of society and the economy in the Nordic region. The Green Growth programme is partly a result of the organisations' collaboration on the Top-Level Research Initiative for Climate, Environment and Energy (see page 42).

nordforsk.org/greengrowth



Total budget: NOK 73.0 million



NordForsk is an organisation under the Nordic Council of Ministers that facilitates Nordic cooperation on research and research infrastructure.

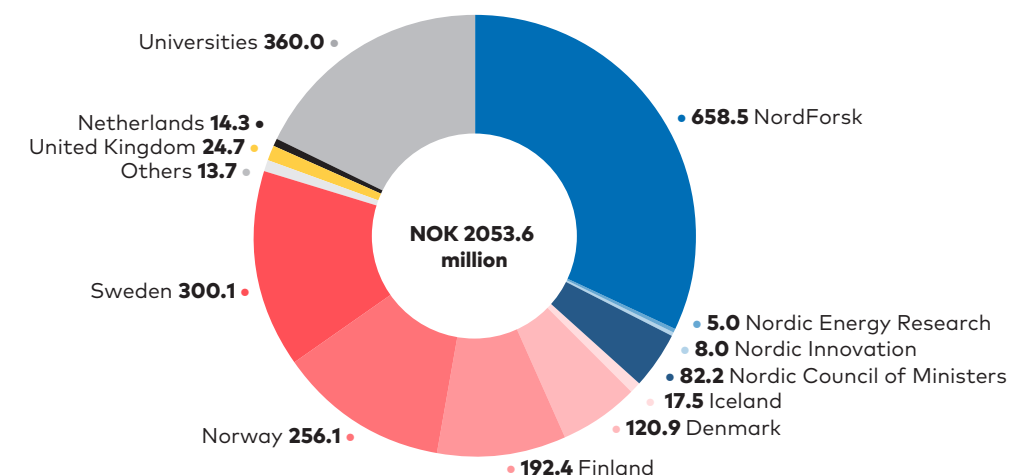
NordForsk's key stakeholders comprise the national research funding organisations, universities and other research-funding bodies. Together we work to identify common Nordic priorities and provide funding for research and research infrastructure.

NordForsk brings together research groups in the Nordic region and supports research of the highest scientific quality.

NordForsk seeks to enhance the quality, impact and efficiency of Nordic research as well as to create added value and thereby help the Nordic region to become a world leader in research and innovation.

TOTAL PORTFOLIO OF RESEARCH ACTIVITIES

Funding sources NOK million



HOW TO APPLY FOR RESEARCH FUNDING?

Research funding from NordForsk must be sought via its open funding announcements. NordForsk does not offer direct grants, fellowships or other permanent funding schemes, but issues calls for proposals regularly. Many of our calls are multidisciplinary, so we recommend looking at all our funding announcements.

You will find information about our funding opportunities and the application process at our website: nordforsk.org/en/funding

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