eScience
Nordic and International Outlook

Sverker Holmgren
Nordic eScience Globalisation Initiative
National eScience Initiatives in Nordic countries

**Sweden** - Strategic Research Area Initiatives
Å2010 to 2015
ÅeSSENCE, SERC

**Norway** - The eVITA Program (also eInfrastructure)
Å2006 to 2015
ÅOn-going discussion on how to continue

**Finland** - The LASTU (Computational Science) Program
Å2010 to 2016

**Denmark** - Support to individual groups
ÅRe-structuring of eInfrastructure (DeIC)

**Iceland** - Support to individual groups
ÅNational eInfrastructure established through the NHPC project
Revival of eScience in the UK (www.stfc.ac.uk/e-science)
National Centers emerging, e.g. in NL (www.esciencecenter.nl)
Centers of Excellence on scientific software in H2020

Roles and relations to eInfrastructures debated
  e-IRG White Paper 2013
Big Fuzz on Big Data
Focus turning towards competence (people, education)
Method development for complex problems and decision support

USA: New NSF program “Computational and Data-Enabled Science and Engineering”
Countries like China and Brazil: Major interest in eScience
Nordic eScience

Activities in the Nordic countries
- e-Science research
- e-Science education
- e-Infrastructure

Collaborative efforts, and joint/coordinated participation in e.g. EU initiatives

Way back
The eNORIA group (a NORIA-net)

2008
Nordic e-Science Globalisation Initiative - NeGI

Now
Nordic e-Infrastructure Collaboration - NeIC

Near future
Update of the Nordic eScience Action Plan
eNORIA Action Plan

- Training Researchers in e-Science Tools and Methods
- A Nordic e-Science Masters Education
- Sharing and Specialising Nordic e-Science Educational Modules
- Fostering Nordic e-Science Collaboration through Mobility

- A Nordic e-Science Program for Research into Grand Challenges
- Strengthening National e-Science Initiatives

- Open Access to National Data Repositories
- Facilitating Sustainable Grid Infrastructure Collaboration
- Implementing Cross-Border Sharing of Resources
- Environmentally-Friendly Nordic High Performance Computing
- **Nordic e-Science Globalisation Initiative – NeGI** (research, graduate education)

  - Initial funding 12.5 MEUR for five years
    - National agencies in FI, NO, SE, NordForsk, Nordic Council of Ministers
    - Governed by a Steering Committee with repr. of the funders + observers from DK and IS

- **Nordic e-Infrastructure Collaboration - NeIC** (e-Infrastructure for computing and storage)

  - Initial funding 1.68 MEUR per year
    - National agencies in DK, FI, IS, NO, SE (+ NordForsk for NeGI support)
    - Governed by a Board with repr. of the funding agencies and national computing/storage initiatives
    - Inherits the operations of Nordic LHC Tier-1 from NDGF
NeGI activities

- Grand Challenge Research Programs on eScience in
  - Climate and Environmental Research
  - Health and Social Preconditions for Health

- Graduate Education on eScience Tools and Techniques

- Research Projects on eScience Tools and Techniques

- Outreach and international collaboration
Research fields selected by funding stakeholders
Input by research communities at pre-call workshops
The calls: 40 MNOK, for developing advanced models, simulation tools and tools for data analysis for [topic]
Climate/Environment: 6 consortia applied
Two NCoE supported (total 4,5 MEUR). Groups from DK, FI, FR, GL, IS, NO, SE
Health: 5 consortia applied
One Nordic Centre of Excellence funded (total 4,5 MEUR). Groups from DK, FI, EE, IS, NO, PL, SE
NeGI is initiating an effort on **eScience Tools and Techniques**

- Appointment **Expert Group** that will
  - Define **Nordic Curriculum**
  - Set up a **list of existing courses** of high quality with NeGI funding for participation of Nordic PhD students
  - Potentially propose **new courses** focusing on NeGI NCoE topics (eClimate/eEnvironment; eHealth)

Also, organisation of annual **Nordic Young Investigators Symposium** in eScience
- Facilitate communication and collaboration between eScience initiatives - Nordic and others (workshop etc)

- Set up relations to eInfrastructure efforts (NeIC, national initiatives and others). How can the eInfrastructure needs of NeGI activities be met?

- Explore potential synergies with other Nordic activities - NordForsk involvement in EC processes on Open Access and Open Science
Ongoing update of the Nordic eScience Action Plan

Background: Evaluation of Nordic research collaboration (Vilja till forskning?)
- mentions the progress in eScience/eInfrastructure as success story

Late 2012: Mandate from Nordic Council of Ministers to produce a new version of the eScience Action Plan