Welcome to eSSENCE Academy 2012!
Sigtunahöjden October 16—17, 2012

Inga NYström, Professor
Coordinator of eSSENCE

e-Science...
• has emerged as the third pillar underlying research, complementing theory and experiments
• builds on developing, implementing and using computer-based tools in research where traditional experimental and theoretical approaches are not sufficient
• provides new opportunities for collaboration in academia and industry, within the same and different disciplines, and over short and long geographical distances
• is connected to the development of computational tools and methods, as well as to the readiness of application areas to novel paradigms and to meet challenges from new directions

e-Science Initiatives in Sweden
• eSSENCE (LU, UmU, UU)
  www.essenceofescience.se
• SeRC (KTH, SU, Ki, LiU)
  www.e-science.se
• e-Science Centre (Chalmers)
  www.chalmers.se/rss/e-science-en
• Initially, funded 2010—2014.
  Goal: permanent funding

Background
e-Science selected as one (of 20) Strategic Research Areas in 2008 Government Bill on Research and Innovation
  – In total 1350 MSEK/year additional funding to Swedish Universities
  – Grants for 2010-2014 (3-year ramp up)
  – Intention that the funding becomes permanent after evaluation
  – 56 MSEK/year to e-Science research:
    • SeRC grant 30 MSEK/year
    • eSSENCE grant 26 MSEK/year

Vision
Provide excellence and scientific solutions at all stages of the e-Science process
  – e-Science for disciplinary progress in distributed research collaborations
  – Interdisciplinary collaboration for progress in methods and tools for e-Science applications

Advancing science through leading computation, information and communication technologies
**eSSENCE Components**

Illustration: Gustaf Kylberg

**eSSENCE Infrastructure**

- **Swedish National Infrastructure for Computing (SNIC)**, www.snic.vn.se
  - Lunarc, www.lunarc.lu.se
  - HPC2N, www.hpc2n.umu.se
  - UPPMAX, www.uppmax.uu.se
- **Swedish University Computer Network (SUNET)**, www.sunet.se

**SUNET**

- The Swedish University Network
  - [www.sunet.se](http://www.sunet.se)
- Supports the needs of the research and education communities within Sweden
- Offers high-capacity computer networks
- Hosts a wide variety of services for connected organisations
- The Swedish Research Council is administratively responsible for SUNET
- Director of SUNET: Hans Wallberg

**Principal Investigators**

- Prof. Tord Ekelöf, Physics and Astronomy, UU
- Prof. Hans Ellegren, Evolutionary Biology, UU
- Prof. Erik Elmroth, Computing Science, UmU
- Prof. Olle Eriksson, Physics and Materials Science, UU
- Prof. Kersti Hermansson, Materials Chemistry, UU
- Prof. Bo Jönsson, Theoretical Chemistry, LU
- Prof. Bo Kågström, Computing Science, UmU
- Prof. Tore Risch, Information Technology, LU
- Prof. Anders Lindroth, Physical Geography & Ecosystem Analysis, LU
- Prof. Sven Strömqvist, Linguistics and Phonetics, LU
Organization

• Programråd – Program Council
• Programberedning – Management Group
• Samordnare – Director
• Administered by the Faculty of Science and Technology, UU

Program Council

• Ingemar Kaj, UU, Chair
• Sven Strömqvist, Dean LU
• Åsa Rasmuson-LeStander, Dean UmU
• Martin Norin, Inovacia
• Ingela Nyström, UU
• Irene Kolare, administrative director UU

Management Group

• Göran Sandberg, LU
• Magnus Ullner, LU
• Bo Kågström, UmU
• Erik Elmroth, UmU
• Gunilla Kreiss, UU
• Johan Åqvist, UU
• Ingela Nyström, UU, Chair
• Carmen Medina, research secretary UU

Current Status

• A set of focus areas has been selected for funding of eSENCE programs
• Several PostDoc projects initiated after application rounds
• A group of application experts supports researchers in usage of HPC
• Workshops
• Seminars
• Host of 35th CERN School of Computing 2012
• www.essenceofescience.se

Research Areas & Programs

Materials Science
• Materials physics
• Chemistry of complex materials
• Nano materials

Human Function and Environment
• Linguistics and visual information
• Pattern recognition in the living brain
• Economic demography
• Ecosystems and climate change

Life Science
• Computational biology
• Bioinformatics

Generic e-Science Methods and Tools
• Distributed computing
• High performance computing also for GPU’s

In total some 25 projects

Budget (in kSEK)

<table>
<thead>
<tr>
<th>University</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU (35 %)</td>
<td>3 500</td>
<td>4 900</td>
<td>9 100</td>
<td>9 100</td>
<td>9 100</td>
</tr>
<tr>
<td>UmU (20 %)</td>
<td>2 000</td>
<td>2 800</td>
<td>5 200</td>
<td>5 200</td>
<td>5 200</td>
</tr>
<tr>
<td>UU (45 %)</td>
<td>4 500</td>
<td>6 300</td>
<td>11 700</td>
<td>11 700</td>
<td>11 700</td>
</tr>
<tr>
<td>Total</td>
<td>10 000</td>
<td>14 000</td>
<td>26 000</td>
<td>26 000</td>
<td>26 000</td>
</tr>
</tbody>
</table>

- 90 % of the budget
  - Distributed to researchers at each University
  - How this distribution is performed is evaluated in the Management Group to identify possibilities for collaboration
- 10 % of the budget
  - Used for joint activities such as workshops, conference participation, involvement in higher education, coordination, etc.
  - In 2012, a program has been launched identifying and supporting a research area where PostDocs should collaborate cross-university
Welcome to eSSENCE Academy 2012!

Sigtunahöjden October 16—17, 2012

Ingela Nyström, Professor
Coordinator of eSSENCE