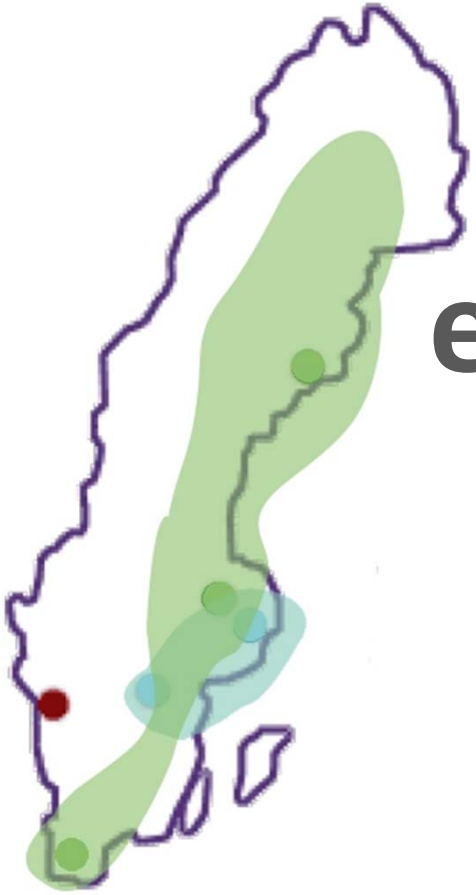
THE e-SCIENCE COLLABORATION



Welcome to eSSENCE Academy 2014!

Umeå October 15—16, 2014

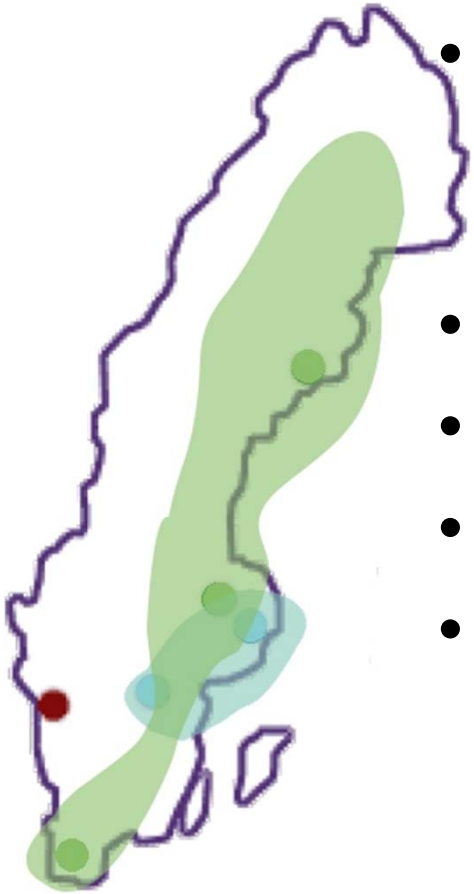
Ingela Nyström, Professor
Coordinator of eSSENCE

UPPSALA UNIVERSITET

LUND UNIVERSITY

UMEÅ UNIVERSITET

Strategic Research Area: e-Science



- e-Science is one of 20 strategic research areas funded by the Swedish government during 2010—2014
- SeRC Swedish e-Science Research Centre — **KTH** – LiU – SU – KI, *30 MSEK/year*
- eSSENCE THE e-SCIENCE COLLABORATION — **UU** – Umeå – Lund, *26 MSEK/year*
- CHALMERS *e-Science Centre*
- Infrastructure funded separately by SNIC HPC centra
  - PDC and NSC part of SeRC
  - UPPMAX, HPC2N, and Lunarc part of eSSENCE
  - C3SE part of CheSC

UPPSALA UNIVERSITET · LUND UNIVERSITY · UMEÅ UNIVERSITET · CHALMERS · KTH VETENSKAP OCH KONST · Linköpings universitet · Stockholms universitet · Karolinska Institutet

Swedish e-Science builds on Swedish e-Infrastructure

- **Swedish National Infrastructure for Computing (SNIC),** www.snic.se

- **Swedish University Computer Network (SUNET**), www.sunet.se

- SNIC and SUNET are bodies of the Swedish Research Council (**Vetenskapsrådet, VR**), www.vr.se

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

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

Ingela.Nystrom@it.uu.se

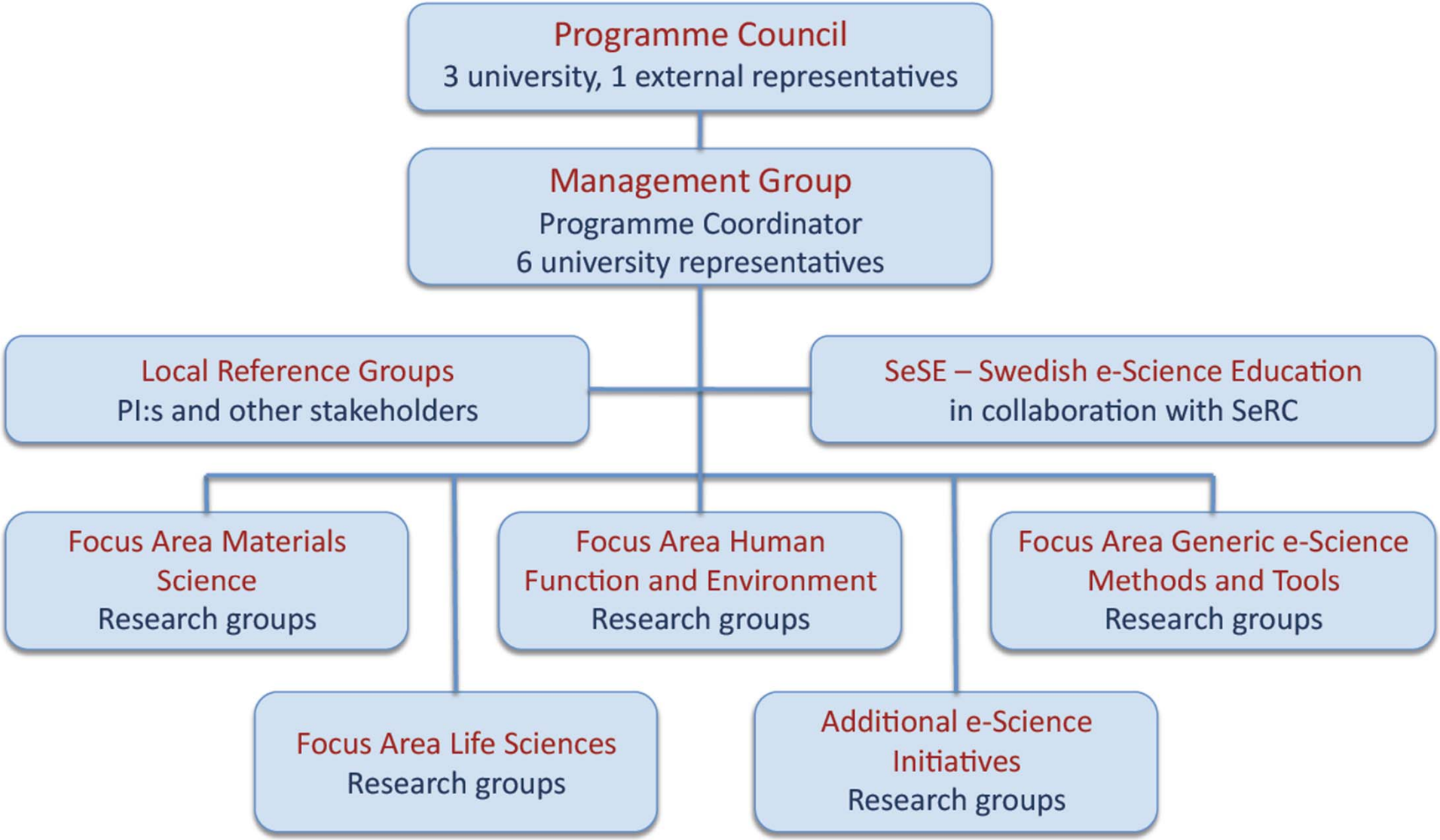
Research Areas & Programs

with collaboration between Universities

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 services and grid • Computational algorithms in simulation also for GPU:s • High-performance parallel computing • Database technology

Funding some 25 projects

Organisation



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, UU
- Prof. Anders Lindroth, Physical Geography & Ecosystem Analysis, LU
- Prof. Sven Strömqvist, Linguistics and Phonetics, LU

Program Council

- Ingemar Kaj, UU, Chair
- Sven Strömqvist, Dean LU
- Åsa Rasmuson-Lestander, Dean UmU
- Martin Norin, Kancera
- Ingela Nyström, UU
- Carmen Medina, research secretary 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

Budget (in kSEK)

University	2010	2011	2012	2013	2014	2015
LU (35 %)	3 500	4 900	9 100	9 152	9 340	9 340
UmU (20 %)	2 000	2 800	5 200	5 230	5 337	5 337
UU (45 %)	4 500	6 300	11 700	11 767	12 009	12 009
Total	**10 000**	**14 000**	**26 000**	**26 148**	**26 687**	**26 687**

- 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.

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Interaction

Thanks go to Pavlin Mitev and Carmen Medina

- Visit www.essenceofescience.se
- Subscribe to http://essenceofescience.se/essence-mail-list/
- Share info on mailing list mail-list@essenceofescience.se
- Arrange eSSENCE seminars
- Propose eSSENCE workshops
- Contact Ingela Nyström ingela.nystrom@it.uu.se
- Submit papers to the series IEEE International Conference on e-Science

7th IEEE International Conference on e-Science
5th-8th December 2011
Stockholm, Sweden

8th IEEE International Conference
on e-Science
October 8-12, 2012, Chicago, US

9th IEEE International Conference
on e-Science
October 21-25, 2013, Beijing, China

The 10th IEEE International Conference on e-Science October 20 – 24, 2014, Guarujá, São Paulo, Brazil

AIMday e-Tools & Methods

- www.aimday.se
  - by UU Innovation
- In November 2013, 5 companies:
  - ABB Crane Systems
  - Folksam
  - Prosilico
  - Vegesack Arkitekter AB
  - Watty AB
- Planning an AIMday in 2015

Swedish e-Science Education

- Courses in e-Science for PhD students
- SeSE is a collaboration between the two national strategic research initiatives eSSENCE and SeRC, originating from the e-Science graduate schools NGSSC and KCSE
- Information about upcoming courses with syllabus and further information can be found at www.sese.nu

Academy Workshops

- It has become an annual opportunity to meet and acquaint ourselves with the exciting research that is happening within eSSENCE
- October 16—17, 2012 in Uppsala (Sigtuna)
  - 60 participants
- October 16—17, 2013 in Lund
  - 80 participants
- ***October 15—16, 2014 in Umeå***

Academy days 2014

- 91 participants
- Oral presentations
- 37 posters
- Panel discussion
- Lunches, dinner, coffees

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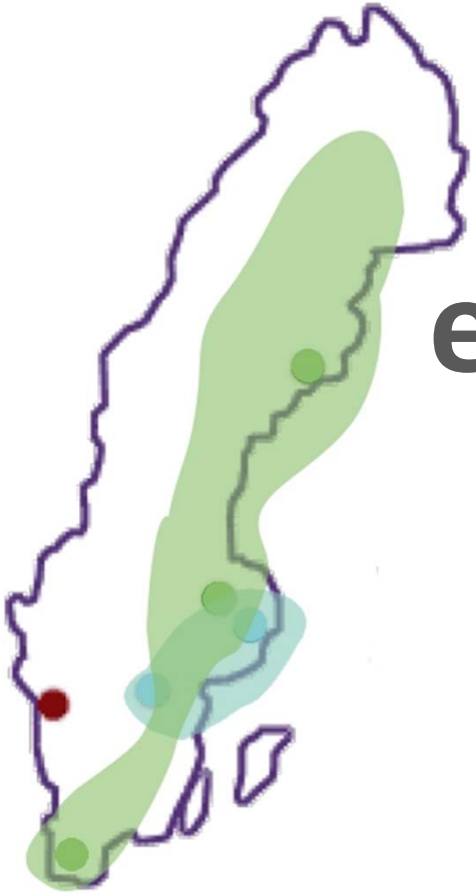

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