

# Anne C. Elster, PhD

Dept. of Computer & Information Science, Norwegian University of Science and Technology (NTNU)  
Sem Saelandsvei 9, N-7491 Trondheim, Norway

Tel: +47 7359-3674 Fax: +47 7359-4466 E-mail: [elster@idi.ntnu.no](mailto:elster@idi.ntnu.no)

<http://www.idi.ntnu.no/~elster> <http://research.idi.ntnu.no/hpc-lab>

## Research Objectives and Interests

My current research interests are in experimental high performance and parallel computing. My current research focus is on developing good models for heterogeneous computing and parallel software environments. This includes developing and testing parallel scientific algorithms and codes that interact visually with the users by taking advantage of the powers in modern GPUs. My current research also includes adapting larger scientific codes for these novel heterogeneous architectures. Other topics of interest include performance analysis and benchmarking of HPC platforms, auto-tunable algorithms, computational steering, and PIC particle codes, as well as algorithms for signal processing including fast linear bit-reversal algorithms and algorithms for ADSL & VDSL.

I work very closely with my graduate students and have so far supervised over 40 masters theses, many of which I help build published papers on, and several which have received prizes. I also supervise/co-supervise several PhD students. Together we have built up my HPC-Lab, a well-respected research lab in heterogeneous and GPU computing which regularly receives international visitors.

Funding partners/collaborators include AMD, ARM, NVIDIA, Statoil and Schlumberger. Collaborators from Medical Technology (SINTEF) and Applied Math, Cybernetics, Marine Tech, Petroleum Engineering and Physics have had and still have several of their master students doing research in our lab. This has been of tremendous benefit for my lab, especially w.r.t. getting access to and gaining understanding of great applications. It is also very satisfying seeing our work impacting other fields.

## Education

**Ph.D.** [Cornell University](#) (1994) [Electrical Engineering](#)

**Minor:** [Computer Science](#) )

**Thesis Title:** ["Parallelization Issues and Particle-in-Cell Codes."](#)

**Thesis Advisor:** Prof. Niels F. Otani.

**Committee Members:** Prof. Keshav Pingali (Computer Science) and  
Prof. Soo-Young Lee (Electrical Engineering)

**M.S.** [Cornell University](#) (1988) [Electrical Engineering](#)

Thesis Title: "Efficient Parallel Algorithms for Matrix Operations."

Thesis Advisor: Prof. Anthony P. Reeves.

**B.S.** [University of Massachusetts](#) (1985) [Computer Systems Engineering](#) (*cum laude*).

Also enrolled in their Honors Math program.

**Business Studies,** [University of Oregon](#), 1981-1982

**Business course on Board Competency** ([Styrekompetanse I](#)),  
[Norwegian Business College](#) (BI-Trondheim), 2007

## Academic Experience:

- **Associate Professor (Førsteamanuensis) in Computational Science**, (2001-present) [Department of Computer and Information Science \(IDI\), Norwegian University of Science and Technology \(NTNU\)](#), Trondheim, [Norway](#). I am a member of the [Algorithms, HPC and Visualization Group](#). I have built up my HPC-lab to become a close-knit and driven research group. I am currently supervising 1 Post Doc, 2+ PhD students, 5+ master students and about to hire 1-2 PhD students. I have supervised over 40 masters theses, many leading to publications and/or prizes, and served on several PhD committees.
- I also have a passion for teaching. I took over our compilers course when the dept. threatened to cancel it due to lack of interest. I revamped the course updating it to what is taught at top US institutions, and it is now a challenging, but very popular course that over 50 took last year. I also developed from scratch TDT 4200 Parallel programming (senior/master level elective) which has 50+ students registered this semester, and is thus one of the largest courses in the world on this topic. Both courses have a heavy programming component which I feel strongly contributes to the success of these courses. See Teaching section for further details.
- **Section Head, Complex Systems, (2009-2010)** [Department of Computer and Information Science \(IDI\), Norwegian University of Science and Technology \(NTNU\)](#), Trondheim, My section includes 8 full-time professors and 5 adjunct faculty members. Both The [Computer Architecture and Design Group](#) and [The Algorithms, HPC and Visualization](#) are parts of my section.
- **Visiting faculty member, [ECE Department at Univ. of Texas at Austin](#), USA.**
  - **Visiting scientist 2010/2011 academic year (sabbatical)**
  - Also Spring 2002 (80% leave from NTNU), Summer 2003, Fall 2005 (sabbatical), Summers 2006-2009:
  - EE 360 "Conference course" on "Special Problems in Parallel Computing" (Spr2002).
  - Supervised EE 464H -- ECE Honors Student Project,(Summer 2001).
- **Adjunct faculty member (Summer and Fall 2000), [ECE Department at Univ. of Texas at Austin](#), USA.** Included teaching:
  - [EE 360P -- Operating Systems \(Fall 2000\)](#)
  - [EE 360C -- Data Structures in C++ \(CS7\) \(Summer 2000\)](#)
- **Research Associate/Lecturer -- University of Texas at Austin, [Center for Numerical Analysis](#)/ Texas Institute for Computational and Applied Mathematics (April 1997 - Aug 1999)**
  - Independent research on simulations and high-performance scientific computing. Proposal writing.
  - Organized conference: IMACS 1998
  - [CS/M 393N -- Numerical Solutions to Elliptic Partial Differential Equations \(Spring 1999\)](#) -- a second level grad. course on iterative PDE methods (lectured for Dr. David M. Young)
  - M 340L (Spring 1999) -- Linear Algebra for non-math majors. Assisted with exams and gave several guest lectures.

- **Lecturer, [Computer Science Department](#), Univ. of Texas at Austin** (Summer 1997 & 1998)
  - Taught a second level data structures course in C++. Projects given included a Family Tree Webpage Generator and a project involving the manipulation of graphical objects as linked lists.
  - Taught "Advanced Data Types", an algorithms analysis course summer 1998. Included designing project that generates a k-ary structure of Webpages for a Website and performing network analysis on the links.
- **Research Assistant, Cornell University, 1992-1994**
  - Thesis related work with Prof. Niels Otani, Dr. John G. Shaw (Xerox), and Dr. Palghat S. Ramesh (Xerox) sponsored in part by Xerox Research, 1992-1994.
  - Independent research on parallel numerical linear algebra sponsored by the Mathematical Science Institute, Cornell University, 1989-90.
  - Joint work with Dr. Hungwen Li (IBM) on parallel algorithms connected with IBM Yorktown's Polymorphic Torus Project, 1988-89.
- **Cornell University - Teaching Assistant (1986-88, 1990-91)**
  - School of Electrical Engineering:
    - Introductory digital systems course (1987-88).
  - Department of Computer Science:
    - Junior-level assembly lang. programming course on the MC68000 (1986, 1990),
    - Senior-level numerical analysis course (1991),
    - Introductory programming course in PASCAL (1991).

## Professional Experience:

- **President of my own company, Acenor Inc.**, (1999-present) which focuses on industrial computing training and consulting, but have mostly put its activities on hold while starting up my new career in Norway.
  - Developed training course: "Fundamentals of Iterative Solvers for Linear Systems", with Dr. David Kincaid for the US Air Force's Research Center in Dayton, OH, May 2000.
- **Schlumberger Austin Product Center, Austin, Texas, 1994 - 1997.**
  - **Schlumberger APC-Research, End-to-End Simulation Department**  
**Research Engineer (March 1996 - April 1997)**
    - Worked on parallelizing a physics transport code porting it to SGI PowerChallenge using MPI.
    - Also involved in developing discrete event simulations for payphone systems.
    - Helped evaluate High Performance Computing resources for Schlumberger for 1997 and beyond.
  - **Austin Systems Center, Common Systems and Tools Department,**  
**Project Engineer (Sep. 1994 - March 1996)**
    - Worked initially on distributed client-server architectures for software configuration mgmt system. Thereafter technical lead of SWIFT (Schlumberger World-wide Issue Filing & Tracking system), a distributed defect-tracking system based on Scopus/Sybase database software. Distributed servers (servers located in various countries) were merged and kept synchronized via Scopus. In contacts with tech. managers at Schlumberger engineering centers world-wide.

- [Xerox Corporation](#) - **Technical Summer Intern, Summers 1991 and 1992.**  
Design Research Institute at Cornell University, Ithaca, NY.
  - Developed particle code to be parallelized as part of dissertation work. Summer 1992.
  - Developed a parallel charge transport simulation for hypercube by building on the Parallel Basic Linear Algebra Subprogram (PBLAS) library developed by author. Summer 1991. (She received a conference award for her PBLAS work – see pubs.
- [IBM T.J. Watson Research Center](#) - **Summer Research Intern, Summer 1987.** Mathematical Sciences, Yorktown Heights, NY.
  - Worked with Dr. Ramesh Agarwal and Dr. James W. Cooley on developing multi-tasking matrix routines for a group of IBM 3090s.
- **Chr. Michelsen Institute (CMI) - Computer Research Intern, Summer 1986.** (CMI is now known as CMR: ) Division of Computer Science, Bergen, Norway.
  - Worked with Dr. Paul O. Frederickson and Dr. Richard M. Chamberlain on developing parallel matrix algorithms for the Intel iPSC Hypercube as a part of a Fortran library.
- **Norsk Hydro A/S - Computer Technician, Summer 1985** Computer Division, Porsgrunn, Norway.
  - Wrote user's manual for communication program, provided PC support.

## Honors and Awards

- Invited and keynote speaker at several international conferences and workshop (see list before publications)
- Nominated as Dept. of Computer & Info Science's (IDI's) candidate for the Dean's (IME's) teaching prize for fall 2010 for outstanding advising of master students.
- Honor Plaque from 2010 PhD student conference at NTNU, CSGSC, at their 10<sup>th</sup> anniversary banquet for founding this successful conference series.
- Departmental mention and flowers for service, IDI 2008 – one of 3 receiving this commendation.
- IEEE Senior Member, December 2000.
- Student Conference Award and Student Paper Competition Award for paper entitled "Basic Matrix Subprograms for Distributed Memory Systems," The Fifth Distributed Memory Conference, April 1990.
- Honorable Mention for paper entitled "Fast Bit-Reversal Algorithms", Conf. on Vector and Parallel Computing, June 1988.
- 
- Fellowships:
  - Cornell University, Spring 1987;
  - Royal Norwegian Council for Industrial and Scientific Research, Fall 1986.
- Stipend for Outstanding Researchers, Heftyes' Memorial Fund, 1986.
- Dean's List, University of Massachusetts at Amherst, 1983-85.
- Scholarship, University of Oregon, 1981-82.
- Outstanding International Student Award, University of Oregon, 1982.
- Member, Eta Kappa Nu and Tau Beta Pi Honor Societies.

## Selected Professional Service

### International Committees and Projects

- **Committee member, Swedish Foundation of Strategic Research.** Evaluated 40+ proposals for large (SEK 4-7 million annually) projects for 100 mill SEK call on Information-intensive systems, 2011. Meetings held in Stockholm and Copenhagen
- **Management Committee Member, [COST Action IC0805: Open European Network for High Performance Computing on Complex Environments](#), (2009 - ).**
  - Leading Numerical Algorithms Working Group (one of 4 working groups)
- **Member** Expert Advisory Panel on Research Infrastructure reporting to the Research and Innovation leadership of the Department of Science, Technology and Development, Danish Government. Elster is one of 3 of 8 on the panel representing engineering and science. Advise how budgeted DKR 600 million (2007-2009) is to be spent. Some related information at: [Link](#)
- **Board Member** of [SIMS \(Scandinavian Simulation Society\)](#),
- **Committee Member** Nordic European Grid -- a consortium working on part of the EU GRID project application for EU FP6. The Nordic countries' [NORDUGRID](#) play a major role here.

### International Standards Committee

- **International Standards Committee Member (1992-1997).** [MPI: The Message Passing Interfaces Forum](#), Represented Cornell University 1992-1994 and Schlumberger 1995-1997.

### Conferences and Workshops Organized

- IEEE Cluster 2010, co-organized workshop related to COST action on High Performance Computing on Complex Environments as one of 4 working group leaders.
- [PARA 2008](#), May 13-16, 2008, Trondheim, Norway (also listed above)
- CSE Workshop in Trondheim Oct. 15, 2003 -- [Info & Program](#)
- [NTNU CS Graduate Student Conference](#) Organized the first conference held in 2001, and was a co-organizer in 2002. The conference series has been very successful and is more popular than ever.
- [DMY-98 Conference](#)

### Minisymposia Organized

- Minisymposium on GPU Computing/EuroGPU 2010 at PARA 2010, Iceland, 8 talks
- EuroGPU, co-organized with Stephane Reuena (GENCI, France), Two-day Minisymposium on GPU Computing at ParCo 2009, Lyon, France, September 1-2, 2009.
- [Minisymposium on Scientific Computing on GPUs](#), PARA 2008, Trondheim, Norway, May 2008. Co-organizers: Enrique S. Quintana-Orti, Jose R. Herrero and Anne C. Elster,

[Link to the 12 talks.](#)

- [Minisymposium on HPC Environments: Visualization and Parallelization Tools](#) at [PARA'06](#) in Umeå, Sweden, June 18-21, 2006. The Minisymposium has 12 speakers.
- Minisymposium on Cluster Computing at PARCO 2003 <http://rparco.urz.tu-dresden.de/PARCO2003/schedule.php>
- Minisymposium on Parallel Iterative Methods (together with Dr. David R. Kincaid) at Tenth SIAM Conference and Parallel Processing for Scientific Computing, March 12-14, 2001, Portsmouth, VA, USA. <http://www.siam.org/confpart/showmin.cfm?SESSIONCODE=231>

## Reviewer

- Research proposal for Swedish Foundation of Strategic Research
- Research proposals for the Danish Research Ministry
- International Journals including:
  - *IEEE Trans. on Parallel and Distributed Systems*
  - *Journal of Parallel and Distributed Computing (JPDC)*,
  - *Software Practice and Experience (JWiley)*
  - *IEEE Trans. on Signal Processing* (2003-present),
  - *International Journal of HPCA, Comm. in Num. Methods in Engineering (CNME)*,
  - *SIAM Journal on Scientific and Statistical Computing (SISSC)*, and *Distributed Computing* by Springer Verlag,

**Also reviewer of technical papers, posters and tutorials for many international conferences. (See “Program Committees”) as well as Reviewer for NIK 2001 and NIK 2002 .**

## Session Chair – Conferences:

Dr. Elster has served as session chair at many conferences dating back to HCAA4 (The fourth Conference on Hypercubes , Concurrent Computers and Applications) in March 1989 in Monterrey, California. Recent conferences not listed under “Program Committee” include PARA 2004 in Copenhagen and SIMS 2001

[http://www2.hit.no/tf/sims2001/sims/programme\\_files/programme\\_main.htm](http://www2.hit.no/tf/sims2001/sims/programme_files/programme_main.htm).

## International Conference Committees

- Steering Committee Member, PARA conference series, (2005-present)
- Conference Organizer & Chair, [PARA 2008](#), May 13-16, 2008, Trondheim, Norway
- International Program Committee Memberships:
  1. SC 2011 (Tutorial Committee) – SC is the largest conference in my field with now 10 000 attendees and an extensive tutorial program. Very active on the committee.
  2. HiPC 2011 18th International Conference on High Performance Computing, Goa, India, Dec. 19-22. Sponsored by IEEE (PC membership)
  3. [IEEE IPDPS 2011](#), May 16-20, Anchorage, Alaska (PC member, Applications)

4. [HiPC 2010](#) -- 17th International Conference on High Performance Computing, Goa, India, Dec. 19-22. Sponsored by IEEE (PC membership)
5. [UK e-Science All Hands Meeting](#), Sept 2010
6. [CCP 2010](#) International Conference on Computational Physics (local committee)
7. [IEEE IPDPS 2010](#) April 2010, Atlanta,(PC)
8. [Cluster 2010](#) IEEE International Conference on Cluster Computing, Sept 20-24, Heraklion, Crete, Greece. (As the WG Leader for EU COST IC0805 Elster also co-organized a workshop related to the action.)
9. [\(ACM PPOPP 2010\)](#) – Elster was invited to join program committee, but had to decline due to too many other prior commitments.
10. [SC'09, \(on Technical Paper Committee -- Applications\)](#)
11. [PPAM 2009](#), Wroclaw (Poland), September 13-16, 2009
12. [ParCo'09](#), Lyon, France , September 1-4, 2009
13. [IEEE IPDPS 2009](#), (Applications)
14. [SC'08 --](#) International Conference on High Performance Computing, Networking, Storage and Analysis (a.k.a. Supercomputing), Austin, Texas, USA, November, 2008 (Co-Chair - Poster Committee)
15. [SC'07](#) (Tutorial Committee)
16. [ParCo 2007](#) "Parallel Computing 2007" organized by Forschungszentrum Jülich and RWTH Aachen University, Sept. 4-7, Germany. [Committee List](#) ,
17. [CCGrid05](#) (International Conference on Cluster Computing at Grids 2005) Cardiff, UK in May 2005. [International Program Committee Member list](#)
18. [SIMS 2006](#)
19. [SIMS 2005](#)
20. SIMS 2004
21. SIMS 2003
22. [SIMS 2002](#) ,

## National Committees and Projects

- **Committee Member** [HPC Committee \(TRP III\)](#), **Research Council of Norway (2003-2004)**  
Serving with: RCN representative Dr. Hilde Erlandsen , IT Director Roar Skålin, Norwegian Meteorological Institute (met.no) , Assoc. Prof. (Universitetslektor) Lina von Sydow, Univ. of Uppsala, Sweden; RCN representative Dr. Gundmund Høst; Professor Knut Børve, Univ of Bergen, Norway; and Professor Risto Nieminen, Helsinki Univ. of Technology, Finland (leader).
- **Project Leader -- subproject on Emerging Technologies (ET) -- Cluster Technologies** within [NOTUR](#) (Norwegian High Performance Consortium). This subproject is a coordinated effort between NTNU and Univ. of Tromsø with anticipated funding through 2003 in excess of NOK 1million. A similiar subproject withing NOTUR-ET is on Grid Technology between Univ. of Oslo and Univ. of Bergen lead by Harald S. Simonsen (USIT/UiO).
- **National Evaluation Committee** regarding tenured position at Univ. of Tromsø
- National Evaluation Committee regarding promotion at Akershus College.
- **Alternate Board Member (vara)** of [NOTUR](#) (Norwegian National High Performance Computational Program), (fall 2001 - Oct. 2002) for [Assoc. Prof. Anne Kværnø](#), Math, NTNU. [Prof. Lasse Natvig](#), IDI, was my replacement while I was on leave Spring 2002.

## University-level service (NTNU)

- **Stand organizer** for Science fair “Teknologidagene” at NTNU Sept. 2010 and 2011. Attended by 1200 high school students and their teachers,
- **Co-Founder and Co-Director** [Computational Science and Engineering Program at NTNU](#) (2003 – 2006). Program is part of NTNU's [ICT strategic initiative](#). Together with Prof. Einar Rønquist from our Applied Mathematics department, I was the original co-director for this program, responsible for HPC Infrastructure and Computer Science, whereas Prof. Rønquist represented Numerical Analysis. In 2007, NTNU was awarded the new national supercomputer co-funded by the Research Council of Norway. Its budget was NOK 30 million for the supercomputer system and another NOK 20 million invested by NTNU in related infrastructure (incl. a new machine room and a large back-up power system). In Jan. 2007, I handed my position over to Dr. Jørn Amundsen to focus on other things related to HPC research.
- **INFOSAM 2020 Member**, "InfoSam 2020 The Information Society of 2020 - an exercise in planning for the future", collaboration between the Faculty (College) of Information Technology and Mathematics (IME), NTNU and Teknologirådet the (Technological Council). Elster's participation included serving on a panel and being the co-author of two position papers (see [Elster's list of Publications](#) )
- **Member -- NTNU's Committee of Computational Research and Education** (BFU (Utvalg for beregningsorientert forskning og undervisning)) (Fall 2002 - 2003)
- **Member (alternate for Pauline Haddow) – Dean's executive group (ledergruppe) , [Strategic Univ. Program in Medical Technology](#) (Fall 2002 and Spring 2003).**
- **Committee Member** of [Computational Science & Engin. project at NTNU](#) , Jan 2001-2004.

## Department-level service (IDI/NTNU)

- **Section Head** (2009-10) – Section for Complex systems (incl HPC, Algorithms, Computer Architecture and Graphics)
- **Faculty sponsor of programming contests**
  - NCPC (Norwegian Collegiate Programming Contest – organized under the international ACM contest) (2006-2010) and IDI Open (2006-2010) a local programming event held in spring. Since I took over, these contest have been extremely successful with over 170 students participating last year and over 250 (IDI Open Spring 2010). I have also been the **National sponsor** 2008-2010. I have also been involved in the fund raising for these events.
- **Alternate Member** -- Teaching Committee, Dept. of Computer and Information Science, NTNU (summer 2005 - present). See: <http://www.idi.ntnu.no/english/organization/> for a list of current members, committees, etc.
- **Board Member** -- Dept. of Computer and Information Science, NTNU (spring 2001 - 2005). See: <http://www.idi.ntnu.no/english/organization/> for a list of current members, committees, etc.
- **Member -- Committee of Physical Resources** -- Dept. of Computer and Information Science, NTNU (spring 2001 - 2005). See: <http://www.idi.ntnu.no/english/organization/> for a list of current members, committees, etc.
- **Alternate member -- Committee of Infrastructure and Research Equipment** -- Dept. of (spring 2001 - 2005).
- **Floor Fire "Chief" (HMS)**, 2002-2003. Duty was passed on April 1, 2003.



## Professional Memberships:

- [ACM](#)
- [IEEE](#), Senior Member since 2000: Joined as Student Member 1983)
- [IEEE Computer Society](#),
  - Student Section Vice President 1983-84 (Univ. of Massachusetts at Amherst)
  - Student Section President 1984-85 (University of Massachusetts at Amherst)
- [IEEE Signal Processing Society](#), [IEEE Women in Engineering](#), and
- [SIAM](#) – Life member
- [Tekna](#) (Norwegian Engineering Society)
- [AGU \(American Geophysical Union\)](#) -- Life member
- [NFA \(Norwegian Automation Society\)](#),
- [NORSIG \(Norwegian Signal Processing Society\)](#)
- [SIMS \(Scandinavian Simulation Society\)](#)

## Research and Research Funding

I have been main advisor for 2+ PhD students and over 40 master students in heterogeneous and parallel computing. See separate research statement and <http://resaerch.idi.ntnu.no/hpclab> for details, including list of recent visitors. List of funding follows.

I have also tried for several more general NFR and EU funding, but so far been more successful with industrial and local support...

- PhD stipend support, Statoil – pending. I have recently found a good Norwegian candidate which is one of the main challenges. He is currently the TA for my parallel programming course. My other TA is also interested in a PhD, but may not start until 2013 due to other commitments.
- Parallel and Heterogeneous Real-Time Systems Lab. Anne C. Elster (PI). Approved Sept 2011 for NOK 1 million in equipment and support. Advanced Research Equipment grant, NTNU IME Strategy funds.
- NVIDIA CUDA Research Center – pending, but told a shoe-in for fall 2011 by NVIDIA. Several high-end graphics cards have already been donated to my lab from NVIDIA 2008-present as part of my participation in their Professor Affiliation's program. Total value so far: over NOK 200 000.
- NVIDIA CUDA Teaching Center – Univ. of Texas at Austi. Anne C. Elster (Main PI), Keshav Pingaly (CS UT Austing) and Mattan Erez (UT ECE) co-PIs. Received 18 GTX 480 cards and USD 7500 for extra TA support (later matched by ECE Dept.
- CUDA Teaching Center – NTNU. Anne C. Elster (PI). Received 20 GTX 480 card + 2070 Telsa Card (NOK 100 000+ value) + USD 10 000 in TA support for course development.
- Computational Medical Visualization. Frank Lindseth, Anne C. Elster and Trond Kvamsdal (co-PIs), 2010-2013. Received funding for 3 PhD students. With overhead worth close to NOK 3mill per year. Funded by IME Dean's office strategy funds. (Preliminary application went to Med. Techn. at NTNU

- Post Doc support for Dr. Ian Karlin (PhD U of Colorado, Boulder with Prof. Liz Jessup as advisor). Was offered job at Sandia Labs in the US, but chose us! 2-yr grant (2011-2013) from Dean's office.
- PhD stipend for Rune E. Jensen – funded by Dean's office after he receive national prize for his master's thesis (2010-2013). Value ca. 1 mill/year.
- Several smaller equipment grants from Dept., including cluster used for teaching and research. Latest upgrade in 2010 worth NOK 120 000. Elster is PI.
- PhD support for Jan Christian Meyer (2007-2010) from Dean's office. Grant I completion with many others and needed research plan, etc. Work close over 3 million total with 4<sup>th</sup> year TA support. Meyer taught my course while I was on sabbatical 2010/11 at UT Austin and has submitted his dissertation for review.
- Forskerskole (MS direct-to-PhD grant) grant for Thorvald Natvig from Department. Thorvald finished his dissertation summer 2010 and defended it Dec 2010 (min. 3 month review required by NTNU.)
- Equipment grant and travel support from Schlumberger for SC 2008 stand.
- Brought in over NOK 1 mill for the PARA 2008 conference. Support came from The Research Council of Norway, NOTUR (the Norwegian HPC Proect), The NTNU IO Center, The NTNU Computational Science and Visualization Program, US Office of Naval Research Global, and IBM, Microsoft, The MathWorks, Ceetron, Synetic Labs (Sweden), NVIDIA, Schlumberge and Statoilm in addition to my department, my Dean's office and, the City of Trondheim (the latter hosted a reception at the Arch Bishop's Palace). It was a lot of work.
- **NOTUR 2004 Compentency projects on GRID, Cluster and Storage Technologies**  
This project was a joint effort by NTNU, U of Bergen, U of Oslo, U of Tromsø and UNINETT. Elster raised NOK 1 million at NTNU for these projects, which made us the largest partner. These funds were matched by the Research Council of Norway (RCN) which also added in NOK 450K for expanded storage Hardware that was installed at NTNUs HPC facility for the use of Met.no. Total 2004 budget at NTNU: NOK 2.45 million  
The projects ran through 2004. Several of her students were involved in the GRID and cluster subprojects. Elster also got some of her colleagues at IDI involved in the storage subproject.
- **NOTUR Emerging Technologies: Cluster Technologies**  
Looked at emerging cluster technologies for Norwegian HPC users.  
Project leader. Budget 2003: NOK 1 million
- IBM SUR grant at University of Texas at Austin, 1998 (co-PI with Prof. David M. Young and Dr. David R. Kincaid).
- Several fellowship, travel grants etc. as a graduate student at Cornell University

## Public Service

- **Contributed to over 50 articles or programs in the Mass media** (see list after academic publications) , including recent two-page “Kronikk” in *Dagbladet* (2010). This article led to meetings with policy makers at the Parliament. I expect this work to continue as I feel strongly it is important to make the public aware of the importance of research.
- Prepared and co-organized panel for Grace Hopper Conference for Women in 2002, Vancouver, Canada together with “Jenter og Data” project leader at IDI.
- Originator and author of “Women in Academia” web page (now taken over similar services)
- Board member of Schlumbergers employee club, Austin Systems Center (1995-1996)
- Expanding Your Horzions encore speaker – US locally organized conferences for middle school (6<sup>th</sup>-9<sup>th</sup> grade) female pupils to get them interested in engineering and science. Did this both while at Cornell and at Univ. of Texas at Austin.
- Served on the following local organizational boards:
  - Trondheim International School's Pre-School (2008-2010)
  - AL Øvre Bakklandet 1A (Board member for community of 80+ living units, 2009-2010)
  - Singsakerbakken 17 (Chair 2006, board member 2003-present)
- Founding member of Graduate Student Advocacy group at Cornell University, USA.
- IEEE Computer society student chapter President (1984-85) and Vice President (1983-84)
- Eta Kappa Nu Officer (1984-85), Univ. of Massachusetts at Amherst student chapter.

## Leisure interests:

- Voice (studied under Nadia Brown (Ithaca College) and Dr. Cynthia Karnstadt (Univ. of Texas at Austin))
- Swimming and Tennis (lately focused on latter)
- Ham radio (US call sign N3ACE) and
- Tropical fish (have in the past raised tap-water discus)

REFERENCES AVAILABLE UPON REQUEST