

Group discussions
KCSE annual meeting
Dec 3-4 2009

Topic: e-Science

- The e-Science community consists of people from many different science areas. Certainly, people from different areas could profit through collaboration, but this seems difficult to realize in practice.

Group 1 (Hustega): Henrik Holst, Sara Zahedi, Antonios Monokrousos, Johan Ohlsson, Mats Wallin, Jiayuan Qi, Gert Svensson, Jesper Tegnér

Group 2 (Utsikten): Jelena Popovic, Geert Brethouwer, Anders Szepessy, Sai Duan, Guangjun Tian, Berk Hess

Group 3 (Personne): Johan Hoffman, Dag Lindbo, Peter Lenaers, Zilvinas Rinkevicius, Qiang Li, Xing Chen, Elisabeth Molin

Group 4 (here): Lennart Johnsson, David Wallom, Maximilian Tomac, Richard Tjörnhammar, Outi Tomisala, Erik G Brandt, Hualei Zhang

Group 5 (coffee area): Erwin Laure, Hans Ågren, Murtazo Nazarov, Gunilla Efraimsson, Niclas Jansson, Levente Vitos, Li Li

Group 1

- Most groups can collaborate, e.g. fluids and climate, waves and fluids and particle simulations.
- Fluids – bioinformatics – difficult to collaborate.
- Hinders: lack of money, lack of time, lack of knowledge of the other subject, identify win-win situation
- Distribute rewards of collaboration
- Help supervisors
- App. Exp. Help with performance issues, quirks in the system and how to avoid them.

Group 2

- Now: annual meeting, seminars, courses, schools.
- More: Contribute to each other's courses; priority on good collaboration for e-science funding, KTH funding, all kinds of funding.
- Graduate student is good way of focusing on joint project.
- Use the same program and library. Merge programs to more general ones.
- Research design patterns. Low level building blocks often common.
- Math dept is not in e-science – why?

Group 3

- Collaboration should benefit all involved. Win-win. Solve new problems. Find new resources.
- KCSE: identify common needs: fast algorithms, software implementations, hardware needs. Sharing data. Common platform for the whole process.
- Monitor transdisciplinary calls for funding.
- Forum for meeting.
- Mentor program. Transfer program. Visitor program. Facilitate switch to nearby research area – on student level, postdoc level.
- Facilitate exploring if a potential collaboration is worthwhile.
- Lobbying agency for funding. Improve peer review process, inspire through successful projects.
- Identify unique projects and attract students. Focus on research progress.
- Transfer program just after PhD?

Group 4

- Pairs will self-organize as long as there is enough knowledge. Gains must be clear.
- Hinders: lack of knowledge. Academic career path.
- Start small communities and groups to bring people together. Informal seminars. Different fora where people can meet.
- Show good, clear results. Success stories from collaboration.
- KCSE graduate school: Supervisor must prioritize multidisciplinary projects. Must be a gain for the PhD student.
- Application experts: More seminars on general computational topics, e.g, visualization. Help to optimize code – home made codes. Application support.
- Not trivial to optimize home-made codes. Profiling. Develop common libraries.

Group 5

- We want to enable science. Good tools, good application.
- People working on the science + computer science methods + application experts + system experts = collaboration necessary.
- Often the algorithm and methods, CS, system experts is ignored.
- Application areas should collaborate with core e-science. Difficult to collaborate between application areas.
- Core of e-science: algorithm and methods, CS, system experts, best practices.
- Usage of resources: Everybody wants to end up at peta/hexaflop level. However, most results are obtained on foundation level systems. Run efficiently on 10 000 cores.
- Infrastructure: human infrastructure, not hardware.
- Recruiting: software engineers, particle physicists.