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SIGCSE News in Brief

The Bulletin this month may be short, but it brings you news you won't want to miss! Included in this issue are not one but *two* conference reports from ITiCSE 2014 (p. 2), which took place in Uppsala, Sweden in June and ICER 2014 (p. 4), which took place in Glasgow, Scotland in August.

Speaking of conferences, if you're thinking about going to SIGCSE 2015, you might want to apply for a travel grant if it's your first time (see p. 7), or attend the Department Chair's workshop if you are a chair or thinking of becoming one (p. 8).

In our regular features, co-editor David Kauchak interviews Lauri Malmi in this month's member spotlight (p. 5) and we have a number of deadlines you won't want to miss in our "Deadline SIGCSE" column (p. 8).

Finally, congratulations to the recently-announced 2015 SIGCSE Award Winners! Frank Young won the Award for Lifetime Service to the Computer Science Education Community and Mark Weiss won the Award for Outstanding Contribution to Computer Science Education. Well done!

Newsletter Credits

- Editors: Christine Alvarado and David Kauchak
- Contributors: Åsa Cajander, Tony Clear, Quintin Cutts, Mats Daniels, Sandra J. DeLoatch, David Kauchak, Lauri Malmi, Arnold Pears, Amber Settle
- Photo credits: Quintin Cutts, Christina Dörge and Brian Dorn

ITiCSE Conference Report

By Åsa Cajander and Mats Daniels, Conference co-Chairs, and Tony Clear and Arnold Pears, Program co-Chairs

The 19th ITiCSE held in Uppsala, Sweden is over, and a fantastic summer here draws to a close, although the delegates of the conference might not believe the latter unless they attended the 2nd ITiCSE in 1997. As organizers we are highly gratified by the outcome, as we saw both new and known friendly faces and heard interesting presentations and discussions, not least around the posters. Our impressions were supported by the evaluation of the conference in which 73% stated that the program was either very good or excellent, 56% of the 95% having an opinion on the paper presentations stated that they were either very good or excellent, 28% of the 80% that stated an opinion thought that the poster presentations were either very good or excellent, and 70% thought the venue and facilities were either very good or excellent. Some aspects that delegates reported as positive in the evaluation include:

The program; As always the feeling of a community atmosphere is always great; Community building networking facilities and overall logistics; The relaxed atmosphere high quality papers; diversity The people; The diversity of the different sessions; the balance between sessions and breaks; Those really good presentations; As always, meeting the other attendees and discussing things with them one-on-one; The friendly people and environment; Food was good; Overall well organized; Everything was on time! Location, location, location! The banquet was great.

It is also pleasing to look back on the truly international character of the conference, with submissions and presentations from a

wide variety of countries. The first authors of the 53 accepted papers were drawn from 16 different countries on five continents. The quality of the papers and presentations were very good and we congratulate, once again, the recipients of the ITiCSE 2014 Best Paper award, Christopher Watson and Frederick W.B. Li both from University of Durham for their paper *Failure Rates in Introductory Programming Revisited*.



Jan Gulliksen gives a keynote speech at ITiCSE. Photo credit: Christina Dörge

The keynote speakers, Yvonne Rogers and Jan Gulliksen, gave appreciated and insightful presentations related to Learning for Life, the theme of the conference. Yvonne Rogers discussed the impact design has on the value of technology for learning and especially for aspects such as collaboration, mindful engagement, conversational skills and the art of reflection. Jan Gulliksen talked about how to meet educational challenges in the “digital” era with a holistic perspective including the whole population.



Participants at ITiCSE. Photo: Christina Dörge

The four working groups addressed a wide area of topics and gave inspiring progress report presentations to the rest of the attendees. This year they covered broad issues such as influences of new technology on education and pre-university computing education and more specific areas such as peer reviewing and understanding programming exam questions.

As organizers we were pleased with the positive buzz at the breaks, and especially around the posters when they were manned. This buzz and the well-attended presentations confirm the positive outcome of the evaluation. That the people helping out to run the conference was appreciated became quite evident at the closing session, when the sizeable audience expressed their vocal appreciation to these people.

Again, thanks to all who made the ITiCSE in Uppsala a truly enjoyable event, not least of all the attendants.

CS Education Week is Coming

December 8 - 14, 2014

What will you do?

Join the Hour of Code

Host an Event

Get Inspired

<http://csedweek.org/>

<http://hourofcode.com/>

And we want to know what you did... stay tuned for a call to have your activity featured in January's SIGCSE Bulletin

ICER Conference Report

By Quintin Cutts, ICER co-chair

ICER 2014, the 10th conference in the series, was held at the University of Glasgow in Scotland in early August. The stats, in brief: 68 paper submissions, 17 accepted; 10 lightning talks; 18 students attended the doctoral consortium. 79 folks attended the conference, including 13 Scottish high school CS teachers involved in a research programme.

New this year was the Critical Research Review, directly after the conference, run by Colleen Lewis. Designed for participants to receive high quality feedback on research works-in-progress, 12 took part, with very positive feedback. It was clearly a relaxed environment in which to significantly take forward research work through discussion with others. This will run again next year – seems like a great way to take your research agenda forward.

The keynote speaker was David Nicol, emeritus professor of Strathclyde University, renowned for his work on assessment and feedback. He discussed peer review, challenging us to consider the key role of university education in developing students' ability to make evaluative judgments.

The engagement between the PhD students and the conference attendees was significantly improved using a new format designed by Mark Guzdial and Sally Fincher, resulting in much better dialogue between the two groups. Placed early in the conference, this got everyone talking to each other early on – continuing into the paper sessions, where every paper was discussed at the delegates' tables for five minutes between each paper presentation and questions on that paper.

There were two awards. The "John Henry" Award recognises the paper with the highest potential for future impact on the field. Josh Tenenberg and Yifat Ben-David Kollikant won the award for their paper "Computer Programs, Dialogicality and Intentionality". The Chairs Award for Best Paper was won by Leo Porter, Daniel Zingaro and Raymond Lister, for their

paper "Predicting Student Success with Fine-Grained Clicker Data".



Josh Tenenberg and Yifat Ben-David Kollikant receiving the "John Henry" award. Photo by Quintin Cutts

We had a full social programme, with an unofficial reception and (educational!) organ recital in the University Chapel on Sunday evening, a formal civic reception in the City Chambers on Monday evening, and on Tuesday the usual conference banquet followed by a Scottish *ceilidh* dance **where everyone danced!** Pretty unusual for a bunch of computer scientists!



The Scottish *ceilidh* dance in action at ICER. Photo by Brian Dorn

Many thanks to the Program Committee, the Associate Chairs Raymond Lister and Robert McCartney, the local organizing committee, Simon for managing the submission process and Jan Erik Mostrom for the website.

MEMBER SPOTLIGHT

In this feature of the Bulletin, we highlight recent accomplishments of our members. For this issue, Bulletin co-editor David Kauchak interviewed Lauri Malmi, Professor at Aalto University.



DK: *How did you first become interested in computer science education research?*

LM: The background of my interest goes back to the early 1990's when I was in

charge of four programming courses, each with 200-1000+ students. In addition, I had only a handful of part time BSc students as TAs. With such human resources it was practically impossible to request students to do many assignments, and give feedback on them. For example, our introductory programming course in Pascal had only two compulsory small project works, which were graded. There were weekly exercises, as well, but it was not possible to ask TAs to test students' submissions to these, or give any other feedback. TAs presented the model solutions in lecture halls for groups of 50-100 students using an overhead projector. Personal guidance for the project works was available only by queuing to TA's office hours, a few hours a week.

To be able to engage students more and set up more compulsory assignments on which some feedback would be available, we had to start using some software to automate the assessment process. The first tool we developed was TRAKLA in 1991, which we used in the data structures and algorithms course. In 1994, we adopted the Ceilidh system from University of Nottingham, UK. A few years later we also started writing papers on the tools and

our experiences of using them. By that time, the practical education development work turned into computing education research. When writing papers one had to consider related work, what others have done, as well as consider how to demonstrate the impact of our innovation, whether it was a tool or some new teaching method. So I started following CS education literature, and realized how much there is to learn if I would like to carry out research in this field.

An important source of motivation for the research was that our results were immediately applicable to improve practice. Getting positive feedback from students as well as making observations and building evidence of improved study progress and learning results was highly motivating. In pure computer science, like algorithms research where I had worked during my PhD studies, application of results into practice was much further way, which I found unsatisfying.

DK: *What have you been working on recently? Any interesting findings you'd care to share?*

LM: I am working on many things (too many?). Two of my PhD students, Lasse Hakulinen and Tapio Auvinen, who are now close to completing their PhD theses, have been working with gamification in CSEd learning environments. One interesting track in this research, where I have participated, concerns comparing two modes of feedback on students' study practices. In one mode, students gain achievement badges based on their study behavior (e.g., how early they start working, how often they submit, do they get the task solved in one trial, etc.). In another mode, they get more neutral feedback, which simply compares their current recorded study practices with the

aggregate of similar data from the previous year students of the course, and gives a visual prediction of their success in the course (i.e., students who last year acted like you, ended up in this kind of results, on an average). We are looking at how students with different motivational backgrounds respond to these two modes of feedback, and we are writing a joint paper of it.

In addition to working with my PhD students, I have some tracks of my “own” research, not related to any PhD studies, but carried out in collaboration with other colleagues. In past years this research has mainly concerned analyzing both computing education research and engineering education research literature. I have been especially interested in building a big picture of how research in the field is carried out, including theoretical or conceptual frameworks, research settings, data collection and analysis methods, as well as reporting research. This is useful information for research training in the field, and – I hope – it could support building the whole computing education research community.

DK: *You have taught a number of courses on computing education research. Can you talk a bit about these and their role in a CS curriculum?*

LM: We have organized a research methods course in my department since 2006 in which varying themes have been discussed, including quantitative and qualitative research strategies, research design, even design thinking. The whole area is far too large to discuss in one course, but we can cover different aspects in each year. I have been lucky to get funding to invite many Finnish and foreign colleagues to give major parts of the course and thus bring their own expertise

to us, and our students. This has been very fruitful collaboration. A great help to me has been collaboration with one of my PhD graduates Päivi Kinnunen, who has in some years given the course solo, and has wide experience in different qualitative methods due to her background in Education.

DK: *Do you have any advice for graduate students and new faculty who want to get involved with CS education research?*

LM: Firstly, you need to find an instructor who knows the field. It is well possible that in your home institute there is no one really interested in computing education research (the field is small). In that case, you might consider looking for opportunities to work in such an institute, which has active seniors in the field. Even if this might fail, you need to find a supervisor or co-supervisor from some other institute, who knows the field and can guide you. The next important thing is that do not stay to work alone, but network with other people in the field. Attend doctoral consortia and small research conferences, like ICER, Koli Calling or ACE. Meeting people, learning to know seniors as well as peer PhD students is highly important, and can result in co-authored papers, and sharing data. Another recommendation I would give – though not for total novices, but after gaining some experience - is attending ITiCSE working groups. Even if they would not exactly match your research topic, working together intensively with several other people is an excellent way to get to know them – much better than just meeting them in a conference shortly.

Finally, be prepared to argue why your work is valuable and who would benefit from it and how. What is the difference between developing education, what all CS teachers do, and doing computing

education research? What is the difference between observations, experience and evidence? What support can you get from educational and psychological theories for your work?

DK: *What do you like to do for fun?*

LM: I play classical piano music. It has been a lifetime hobby for me, and I have finally been able to play fairly advanced works, once even Mozart's piano concerto with my piano teacher playing the orchestra part. It has been highly satisfying to master such works (almost – I am a not professional musician). I read novels, quite much detective stories, fantasy and science fiction. In summer vacations I like to go hiking in Lapland in large national parks with some of my family members, several last years with my son. Staying a week in the wilderness, carrying everything we need by ourselves, perhaps walking days without seeing anyone else, forgetting work and simply the enjoying the nature is of great value to me.

DK: *Anything else you'd like to add?*

It has been a wonderful experience of being involved in the emergence and growth of the international computing education research community. I like very much the general feeling of conferences and the whole community that we are jointly building better CS education, and that we are not fierce competitors with each other. So there is no need to shoot down others' work.

Lauri had lots of great things to say on CS education and related topics. For more questions and comments from Lauri, see the full interview transcript at:

<http://www.cs.middlebury.edu/sigcse/lauri.malmi.interview.10.14.html>

SIGCSE Travel Grants

By Amber Settle, SIGCSE Treasurer

The SIGCSE Board is pleased to announce the opening of applications for the second round of the Travel Grant Program. The Travel Grant Program was established through a generous donation by Henry Walker to support faculty and teachers who have not yet had an opportunity to attend the SIGCSE Symposium. Five awards were given during 2014, and we anticipate funding at least five additional awards for the 2015 Symposium.

Faculty and teachers who have never attended the Symposium and do not have institutional support to attend are encouraged to apply for the program. Completion of the form requires some basic demographic information and a two-part essay that includes a brief description of how attendance will benefit the applicant and how the applicant plans to share what he/she has learned with his/her community.

Applications for the 2015 conference must be received by **October 31, 2014**. The program deadline has been moved to better accommodate applicants who require visas for travel to the U.S. Please encourage colleagues at your institution who could benefit from Symposium attendance to apply. More information about the program and the application process can be found on the Travel Grant Program page: <http://sigcse.org/travelGrant>

If you have questions about the Travel Grant Program that are not answered by the page listed above please contact the SIGCSE Board at apply@sigcse.org.

Training for Department Chairs at SIGCSE 2015

By Sandra J. DeLoatch, Provost and Vice President for Academic Affairs and Former Computer Science Department Chair, Norfolk State University

Are you a new chair, a veteran chair, or considering a chair position? If so, please plan to participate in the SIGCSE 2015 Roundtable for Department Chairs. The insights likely to be gained should be beneficial to helping you become a more effective and successful chair.

The predominant format for the Roundtable will be small group interaction and discussions. Roundtable leaders will introduce relevant topics that will then be explored by participants via case studies. Participants will also be permitted to introduce general discussion questions regarding their goals, aspirations, and areas of concern.

The Roundtable will be led by a group of experienced department chairs who will present opportunities and benefits for serving as chair as well as address the significant administrative and personnel issues that chairs must handle. Additional topics on leadership characteristics, management styles, time management, legal issues, establishing priorities, and communication will focus on best practices that produce efficient and effective chairs.

Resource materials on various topics will be provided to participants. In addition to receiving valuable chair training, participants are expected to establish a new network of associates, mentors, and advisors.

Send questions or expressions of interest about the 2015 Roundtable for Chairs to Sandra J. DeLoatch (sjdeloatch@nsu.edu).

Deadline SIGCSE

Here are some upcoming deadlines and dates you won't want to miss!

Oct 31 SIGCSE Travel Grants

<http://sigcse.org/travelGrant>

Nov 15 SIGCSE Special Projects Grants

<http://www.sigcse.org/programs/special/apply>

Nov 30 ACM Karl V. Karlstrom Outstanding Educator Award, Nomination deadline

<http://awards.acm.org/karlstrom/nominations.cfm>

Jan 11 ITiCSE Paper, Panel and Working Group submissions deadline

<http://www.iticse2015.mii.vu.lt/>
