

# ICL NEWSLETTER

APRIL 2010

## ICL Celebrating 20 Years



On Thursday March 25th, the ICL 20 Year Workshop kicked off with an evening reception at the downtown Holiday Inn. Enjoying numerous hors d'oeuvres, many former and current ICLers spent the evening visiting and catching up on old times.

On Friday March 26th, the weekend events kicked off with a breakfast buffet at the Holiday Inn, which was followed by a day of Workshop presentations by former ICLers. Many former members of the group attended, including two original members from 1989, Ed Anderson and Susan Blackford. Sixteen talks were delivered by attendees who came from as far away as Japan, Germany, South Korea, and France. In addition, ICL alumni from the following attended: California, Colorado, DC, Delaware, Maryland, New Mexico, Texas, and Washington.

Friday evening, nearly 100 attendees enjoyed a buffet dinner at the Bridgeview Grill on the waterfront. Following the dinner, many attendees continued the festivities back at Suite 904 at the Holiday Inn, where word has it the police were summoned later in the evening for "excessive noise." The newsletter staff attempted to get the scoop from a few party goers, but it seems the level of "recall" of the events is quite low.

The following day, March 27th, the remaining Workshop attendees gathered at Calhoun's on the River for a luncheon and a surprise celebration of Jack's 60th year. Jack's wife Sue presented a very nice photo display of Jack, including many never before seen photos from Jack's younger days. As part of the surprise, all three of Jack and Sue's children attended: Nick, Ben, and Katie.

The Workshop was quite a success, and Jack would like to express his sincere appreciation to not only those who attended, but to all former and current group members who have collectively helped make ICL the premier research center it has become in 20 short years. Visit the [20 Year Workshop website](#) to see the full list of attendees and to view the presentations. There are also links to photos taken from all three days. Check back often as more photos are being added.

## RECENT PAPERS

Turchenko, V., Grandinetti, L., Bosilca, G., Dongarra, J. "Improvement of parallelization efficiency of batch pattern BP training algorithm using Open MPI," *Proceedings of International Conference on Computational Science, ICCS 2010* (to appear), Amsterdam The Netherlands, Elsevier, June, 2010. [PDF](#)

Grigori, L., Demmel, J., and Xiang, H. **CALU: a communication optimal LU factorization algorithm.** UCB/EECS-2010-29, LAWN 226, March 15, 2010. Submitted to *SIAM Journal on Matrix Analysis and Applications* [SIMAX]. [PDF](#)

Ltaief, H., Tomov, S., Nath, R., Dongarra, J. "Hybrid Multicore Cholesky Factorization with Multiple GPU Accelerators," *IEEE Transaction on Parallel and Distributed Systems* (submitted), March 26, 2010. [PDF](#)

Ltaief, H., Tomov, S., Nath, R., Du, P., Dongarra, J. "A Scalable High Performant Cholesky Factorization for Multicore with GPU Accelerators," *Proceedings of VECPAR 2010* (to appear), Berkeley, CA, June 22-25, 2010. [PDF](#)

## RECENT CONFERENCES

**MAR 5** Washington, DC  
**SBIR reviews** / George

**MAR 8-10** San Jose, CA  
**MPI Forum** / George, Thomas

**MAR 8-11** Pittsburgh, PA  
**LCI Conference on High Performance Cluster Computing** / Dave C.

**MAR 16** Portland, OR  
**Blackjack Quarterly Progress Review** / Anthony, Dave C., and Piotr

**MAR 23-24** Knoxville, TN  
**PERI All-hands meeting** / Shirley, Dan, and Vince

**MAR 26** Knoxville, TN  
**ICL 20th Anniversary Workshop**

## UPCOMING CONFERENCES

**APR 7** Arlington, VA  
**AACE/Blackjack Characterization Meeting** / Anthony, Dave C., and Piotr

**APR 13-14** Oxford, UK  
**IESP Meeting** / Jack, Teresa, Terry, and Tracy R.

**APR 19-23** Atlanta, GA  
**IPDPS 2010** / George and Stan [PDF](#)

# INTERVIEW

## Mathieu Faverge

Post Doctoral Research Associate



**Tell us a little about yourself (e.g., where you're from, you education background).**

I come from a little town in the east of France called Aillevillers et Lyaumont, which is lost in the middle of nowhere, where I lived during 18 years. After I get my A-Level degree, I spent two years in Nancy in what we call "classe preparatoire" to get access to high schools instead of going to University. It's there that I started work in computer science and decided to apply for different engineer schools in the area. This drove me to Bordeaux where I got my diploma of Engineer in Computer Science after three years at ENSEIRB. I stayed three more years in Bordeaux as a PhD student and got my PhD from University only four months ago, just before coming to ICL.

**How did you learn about the Innovative Computing Laboratory?**

I heard about BLAS, [SCA]LAPACK projects and about Jack when I was in last year of my engineer school. After that, during my PhD, I met Stan Tomov in Norway and heard about PLASMA and MAGMA projects. But yes, I have to admit that before I met Jack last June I knew more about different projects and people at ICL than really about ICL itself.

**What are your research interests and what will you be working on while at ICL?**

During my PhD, I worked on a sparse direct solver called PaStiX to change the computation scheduling by taking care of the data locality on the new NUMA architecture, because we know it becomes more and more costly to reach data far away from the CPU, which does the computation. Here at ICL I work in the linear algebra group on the PLASMA project on solvers like during my PhD, except that now I work on dense matrices. I am currently working on mixed precision solvers and I have also started to

work on eigenvalues solvers. In my free time, I am also working on a project started with my students on a visualizer for execution trace.

**What has been the most surprising/shocking to you about living in the US compared to France?**

The monster truck show we saw last month. Not only the show but the US national hymn with everyone standing up with the hand on the heart surprises me because we have no event like this in France and we have national hymns only for international games. On a totally different subject, I was also surprised by the space between each store. It's impossible to walk from one to another, so I really need to find a car compared to Bordeaux where I was doing everything afoot. I almost forgot to mention Pigeon Forge and Gatlinburg. We have nothing like these in Europe and it's probably the most surprising thing I have seen during these two months in Knoxville.

**What have you enjoyed most about your short time at UT and ICL?**

I enjoyed the three days of the 20 year ICL workshop and meeting a lot of new people in ICL during this event. Otherwise, since I'm in Knoxville, I try to do as many things as possible to visit the Tennessee state and discover US. And it's difficult to choose between Nashville, Chattanooga, hiking in the Smoky Mountains with the snow, the Lady Vols games, the monster truck show, the super-bowl, ...



## SC '10 Deadlines

Some deadlines for the upcoming SC conference in New Orleans November 13-19 are fast approaching, which include several in April. For a complete list of deadline dates, visit the [SC10 Important Dates page](#).

## What exactly are "Processor Hours?"

Frank Munger, in his blog, Atomic City Underground, recently attempted to get that answer in his piece titled "What are 'processor hours' anyway? And who's using them to do highfalutin science at ORNL?" [See his answers](#) along with highlights about a few ORNL research scientists, including some who have collaborated with ICL in the past.

## Exascale Innovation Center Formed

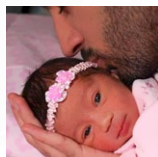
ICL VI-HPS partner, Forschungszentrum Juelich, has joined with IBM to form the Joint Exascale Innovation Center in Germany. The new Center plans to unveil an Exascale class supercomputer before 2020. The new machine will be 1000 times faster than Juelich's JUGENE, which is Europe's fastest supercomputer and #4 on the current Top500 list. For more information, see the [HPCwire article](#).

## RELEASES

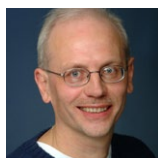
## HPC CHALLENGE BENCHMARK

Version 1.4.0 of the HPC Challenge benchmark suite has been released. In addition to some new features, the order of the benchmarks has been changed such that HPL runs last and RandomAccess now runs first. Visit the [HPC Software page](#) for more information.

## PEOPLE



Congratulations to former ICler **Bilel Hadri** and his wife Sana who welcomed their first child on February 24th, a baby girl named Belkis after the Queen of Sheba.



Visitor – **Alexey Lastovetsky**, from the University College Dublin, visited from March 19th – April 3rd.

## RECENT LUNCH TALKS

**MAR 5** Samuel "Sticks" Mabakane  
**Benchmarking of Scientific Codes Running in the CHPC Clustering Environment** [PDF](#)

**MAR 12** George  
**DAGuE: A Distributed DAG Engine for Parallel Algorithms** [PDF](#)

**MAR 19** Peng  
**The Era of OpenCL, or is it?** [PDF](#)

**MAR 26** No lunch talk – ICL 20 Year Workshop

**APR 1** Alexey Lastovetsky, UC Dublin  
**High Performance Heterogeneous Computing in UCD** [PDF](#)

## UPCOMING LUNCH TALKS

**APR 9** Trey White, PhD Student

**APR 16** Tilman Kuestner

**APR 23** John Levesque, Cray

**APR 30** Micah Beck, UTK EECS

## DATES TO REMEMBER

**APR 30** Classes End for Spring Semester

## CALL FOR PAPERS

SUBMISSION DEADLINE: **MAY 2**  
**1st International Conference on Energy-Aware High Performance Computing [EnA-HPC 2010]**  
**SEP 8-10** Hamburg, Germany

## ICL CONNECT

