ICL NEWSLETTER
MARCH 2009

IGMCS Seminar Series

The IGMCS Seminar Series has resumed for the Spring semester. Speakers from ORNL and UT are scheduled nearly every other week through April to talk about their research and the many opportunities available to students seeking a minor in computational science. For more information about the seminars, including the current speaker schedule and links to past talks, see the **Seminar Series page** of the **IGMCS site**.

Professional Society Memberships

This is a reminder that full time employees and students of ICL are eligible for a paid annual membership to one professional society, such as ACM, IEEE, or SIAM. Membership benefits typically include substantial registration discounts for various professional conferences, such as SC, as well as journal subscriptions. To take advantage of this privilege, contact Tracy Rafferty or Tracy Lee.

ICL on Facebook

Did you know ICL is now on Facebook? Tracy Rafferty recently created a group entry for ICL to encourage communication between current and/or former ICLers, including spouses and children. ICL Facebook membership is growing all the time and is currently up to 29 members. If you're already a Facebook member, consider joining the **ICL group**. If you're not a member and you want to particpate, it's easy. Just go to **Facebook's homepage** and sign up.

PAPI and MediaWiki

Dan and Matt have created a documentation wiki for PAPI. Designed to promote simpler, distributed editing capabilities, the **PAPI Wiki** was set up to migrate away from the traditional manpage/troff documentation format. The Wiki already contains the Programmer's Reference for both the Classic PAPI and PAPI-C implementations. There is also a Classic PAPI User's Guide.

SOFTWARE RELEASE

PVM 3.4.6

A new version of **PVM** has been released. This is the first new release in five years. Several patches have been made available in the interim, but this new version ad-dresses several bugs and adds support for various Linux distributions. For more information about the updates in this new version, see the **Release Notes**.

RECENT PAPERS

Kurzak, J., Ltaief, H., Dongarra, J., Badia, R. M. **"Scheduling Linear Algebra Operations on Multicore Processors."** UT-CS-09-636 (also LAPACK Working Note 213), Feb. 5, 2009 **PDF**

Ltaief, H., Kurzak, J., Dongarra, J. **"Scheduling Two-sided Transformations using Algorithms-by-Tiles on Multicore Architectures,"** University of Tennessee EECS Technical Report (also LAPACK Working Note 214), UT-CS-09-637, February 11, 2009. **PDF**

Ballard, G., Demmel, J., Holtz, O., Schwartz, O. **"Communication-optimal Parallel and Sequential Cholesky Decomposition,"** LAPACK Working Note 215, February 13, 2009. **PDF**

RECENT CONFERENCES

FEB 6 Atlanta, GA
Harness Meeting   George, Pierre, Thomas

FEB 9-11 San Jose, CA
MPI Forum   George, Thomas

FEB 13 Oak Ridge, TN
FASTOS Meeting   George

FEB 16-20 Juelich, Germany
3rd VI-HPS Tuning Workshop
Heike **PDF JPG**

FEB 25-27 Lousville, KY
ORTE and FASTOS Meeting
Aurelien, George, Thomas

UPCOMING CONFERENCES

MAR 2-6 Miami, FL
SIAM Conference on Computational Science and Engineering (CSE09)
Dan, Emmanuel, Jakub, Keith, Stan

MAR 9-12 Boulder, CO
The 10th LCI International Conference on High-Performance Clustered Computing
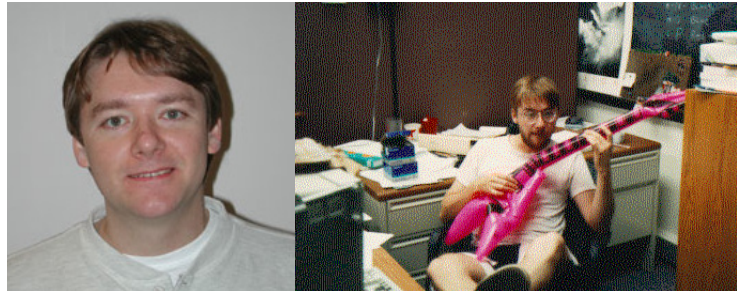Shirley

MAR 19-20 Albuquerque, NM
2009 Fault Tolerance Workshop
George, Peng

MAR 25-27 Marina del Rey (Los Angeles), CA
PERI All Hands Meeting, Spring 2009
Dan, Keith, Shirley

INTERVIEW

Reed Wade

ICL 1990-1996

You're one of the earliest ICLers. Tell us about your education background and how you got started with the group.

When Jack first appeared on the scene, I was working as an undergrad member of the CS dept labstaff. It became apparent pretty quickly that he was going to need some fully assigned staff to deal with the number and variety of equipment that kept showing up.

What all did you work on back in those days?

Getting new machines up and running within the network was a big part of the job. Various vendors sent us early and sometimes pre-release hardware that needed to be set up and made to work.

I was also involved in applications development. Sometimes updating existing work such as SHMAPA. Other times it was new projects like xnetlib, a short lived but useful pre-web X Windows application which allowed users to get software from Netlib instead of using the automated file service by email request method. Care and feeding of Netlib, and making it web accessible, was another of the ongoing projects I helped with.

As it became clear the Web would never scale using URLs, we became involved in next generation naming and distribution schemes. It was a nice idea but didn't take hold as we were trying to solve the wrong problem. Serving files became far less import or useful or difficult to scale on the Web than serving services.

What are some of your favorite memories from your time at ICL?

- pushing some insanely expensive fridge sized one of a kind machine up a gravelly sidewalk and across the parking lot in the move from South College and hoping the thing didn't tip over or start off downhill on its own

- Jack almost getting away with a 5 ft tall Statue of Liberty replica on our way out of some conference event. Not sure what he was going to do with it but it seemed like a great idea at the time.

- most of all the people, a lot of smart and fun people

You recently moved away from Tennessee. Tell us where you are and what you're doing now.

Since 2 years ago I've been living in Wellington, New Zealand. It's a place that really suits me. It has a lot of the best of East Tennessee with the green and the hills plus an ocean about 5 minutes walk from the office. That said, we're still adjusting. You can't go buy a toaster at 4am here. It didn't take long to realize that's probably a feature and not a bug. It is a small and physically isolated country. From what I can tell, it's the perfect size for a country. Large enough to support world class work, small enough that everyone knows everyone.

I'm at Catalyst IT (**Catalyst.net.nz**), a hotbed of open source activity. My most recent work has been on the content management and content delivery for a high traffic newspaper conglomerate owned Web site, **Stuff.co.nz**.

In what ways did working at ICL prepare you for what you do now, if at all?

Jack taught me the power and the legitimacy of advertising. The work we do may sound and look technical and scientific up close but it's about people. Sometimes that means meeting the needs of whoever is funding your work and sometimes it's about how you attract and retain clever people. Without that element, you can't sustain the engine that makes all these things happen. I learned a thousand other things, large and small, that help me today but that's the single biggest.

Many people may not know that your wife, Jan Jones, also worked at ICL for many years. Tell us something about yourself that might surprise some people.

I can't think of a thing.

Travel Reminders

As Tracy mentioned in her recent lunch talk on Travel and Policy Updates, travel related goals of ICL include

- Provide travelers with necessary information
- Make sure UT policies are followed
- Ensure timely reimbursements
- Minimize costs to travelers

If you wish to submit a paper, poster, etc. for a conference and it is possible that acceptance will result in travel, please discuss the issue beforehand with Tracy, Jack or your project leader to ensure that travel funds are available. If you have any questions regarding travel that aren't answered on the Travel FAQ, please ask Tracy or Leighanne. Tracy's lunch talk is available on the ICL Presentations page (see the internal website).

PEOPLE

Michael Resch will be visiting March 5-7 from the High Performance Computing Center Stuttgart (HLRS). He will be giving the lunch talk on the 6th.

RECENT LUNCH TALKS

FEB 6 Hatem
Two-sided transformations: "The other 3 Amigos" PDF

FEB 13 Camille
MPI on the Grid PDF

FEB 20 Tracy R.
Group Travel

FEB 27 Emmanuel
Memory-Aware Scheduling for Sparse Direct Methods on Large-Scale Platforms PDF

UPCOMING LUNCH TALKS

MAR 6
Michael Resch, from HLRS in Germany

MAR 13
Akila Gothandaraman, PhD Candidate in EECS

MAR 20 TBA

MAR 27 Asim

Top 10 Issues in Parallel Computing

Source: Mattson, T., Wrinn, M. "Parallel Programming: Can we PLEASE get it right this time?" Proceedings of the 45th Annual Conference on Design Automation, 2008

1. Finding concurrent tasks in a program. How to help programmers "think parallel"

2. Scheduling tasks at the right granularity onto the processors of a parallel machine

3. The data locality problem: Associating data with tasks and doing it in a way that our target audience will be able to use correctly.

4. Supporting scalability, hardware: bandwidth and latencies to memory plus interconnects between processors to help applications scale.

5. Supporting scalability, software: libraries, scalable algorithms, and adaptive runtimes to map high level software onto platform details.

6. Synchronization constructs (and protocols) that let programmers write programs free from deadlock and race conditions.

7. Tools, API's and methodologies to support the debugging process

8. Error recovery and support for fault tolerance

9. Support for good software engineering practices: composability, incremental parallelism, and code reuse.

10. Support for portable performance. What are the right models (or abstractions) so programmers can write code once and expect it to execute well on the important parallel platforms?