ICL NEWSLETTER

UT Elects 24th President

Joe DiPietro, chancellor of UT's Institute of Agriculture, was named the 24th president of the university on Oct. 22nd. See the **UT press release** for more information about President DiPietro.
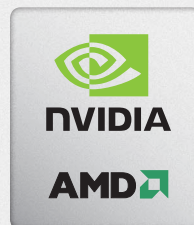
IESP Meets in Maui

The 5th workshop of the International Exascale Software Project (IESP) was held Oct. 18-19th in Maui. With nearly 100 attendees, the two day workshop had the highest attendance of all of the meetings. At this workshop, leaders of the HPC software community, representatives from major system vendors, and a group of computational scientists from diverse extreme-scale research areas came together to share, and find ways of reconciling, their various requirements and concerns as part of the first steps in the "co-design" process of formulating essential design specifications for an advanced software stack for future exascale systems. More information about the project can be found on the **IESP website**, including information about the latest workshop and a revised Exascale Roadmap.

ICL Going Hybrid

In keeping pace with evolving heterogeneous computing, ICL has several hybrid machines and just added another. The addition of the new Magny Cours server, operational but waiting on NVIDIA to send a four Fermi GPU blade, adds 48 cores to the total available from the other five hybrid architectures now in use, including machines with AMD, GeForce and Tesla GPUs.

UT's Nautilus System Fully Operational

Nautilus, the 1024 core SGI system at the UT's Remote Data Analysis and Visualization Center (RDAV), is now fully operational. RDAV, part of UT's National Institute for Computational Science (NICS), was established to assist scientists with visualization and data challenges. For more information, see **Tennessee Today's article** and Frank Monger's Atomic City Underground **blog post**.

RECENT PAPERS

Agullo, E., Augonnet, C., Dongarra, J., Faverge, M., Ltaief, H., Thibault, S., Tomov, S. "**QR Factorization on a Multicore Node Enhanced with Multiple GPU Accelerators**," University of Tennessee Computer Science Technical Report, ICL-UT-10-04, October 1, 2010. **PDF**

Bosilca, G., Bouteiller, A., Herault, T., Lemarinier, P., Saengpatsa, N., Tomov, S., Dongarra, J. "**A Unified HPC Environment for Hybrid Manycore/GPU Distributed Systems**," IEEE International Parallel and Distributed Processing Symposium (submitted), Anchorage, AK, May 16-20, 2011.

Danalis, A., Luszczek, P., Marin, G., Vetter, J., Dongarra, J. "**BlackjackBench: Hardware Characterization with Portable Micro-Benchmarks and Automatic Statistical Analysis of Results**," IEEE International Parallel and Distributed Processing Symposium (submitted), Anchorage, AK, May 16-20, 2011.

Dongarra, J., Beckman, P. et al., "**The International Exascale Software Project Roadmap**," University of Tennessee Computer Science Technical Report, UT-CS-10-662, October 18, 2010. **PDF**

Dongarra, J., Luszczek, P. "**Reducing the time to tune parallel dense linear algebra routines with partial execution and performance modelling**," University of Tennessee Computer Science Technical Report, UT-CS-10-661 (also LAPACK Working Note 235), October 8, 2010. **PDF**

Luszczek, P., Kurzak, J., Dongarra, J. "**Changes in Dense Linear Algebra Kernels - Decades Long Perspective**," in Solving the Schrodinger Equation: Has everything been tried? (to appear), Popular, P. editor. Imperial College Press, 2011.

Luszczek, P., Ltaief, H., Dongarra, J. "**Two-stage Tridiagonal Reduction for Dense Symmetric Matrices using Tile Algorithms on Multicore Architectures**," IEEE International Parallel and Distributed Processing Symposium (submitted), Anchorage, AK, May 16-20, 2011.

White, T., Dongarra, J. "**Overlapping Computation and Communication for Advection on a Hybrid Parallel Computer**," IEEE International Parallel and Distributed Processing Symposium (submitted), Anchorage, AK, May 16-20, 2011.

You, H., Li, Z., Liu, Q, Moore, S. "**An Auto-tuning I/O Framework for Lustre File Systems**," IEEE International Parallel and Distributed Processing Symposium (submitted), Anchorage, AK, May 16-20, 2011.

RECENT CONFERENCES

OCT 12 – 13 ATLANTA, GA
Blackjack Quarterly Review
Anthony, Piotr

OCT 18 – 19 MAUI, HI
IESP
Jack, Terry, Tracy R., Teresa
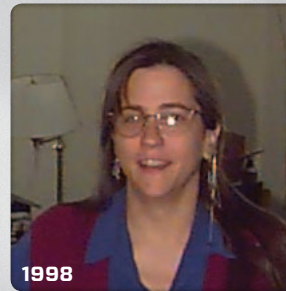
OCT 18 – 19 ARGONNE, IL
ALCF Early Science Workshop 2010
Dan, Shirley

OCT 21 PARIS, FRANCE
Final Review SAFE-OS
Thomas

INTERVIEW

Judi Talley
ICL 1993-1999

1998

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

I got involved with computers way back in 1979, working as a remote site operator for Allied Products Division of Carrier. I worked fulltime on night shifts maintaining equipment (very old school: punch cards and wire boards!). Eventually, after marrying my husband, Bill, and moving around a bit, we settled back in Knoxville, and I received my Bachelor's of Science in Computer Science from UT. I immediately began working on my Master's, and joined the Computer Science lab team under Teresa Peppin. Here I worked with other future ICLers like Reed Wade and Keith Moore maintaining the myriad systems and hardware that made up the lab. Back in the day, we had DEC's, the old IBM RT's, and these odd new machines, Macs. I was "all but thesis" when I had my first child, George. I was a bit older than the average new mother, and I quit school to be with my family and started working at SNMP Research with Dr. Case. At SNMP I did post-sales technical support and technical writing, along with general systems administration. After talking with Reed Wade one day, off I went to ICL. I had worked some with ICL while working as a student for the CS Department, so I was already familiar with many of the systems and people in ICL. I came in the fall of 1993, and the rest was a whirlwind of long days and nights that were probably some of the most hectic and enjoyable of my life---and most exhausting. I left ICL in 1999, right before the move out of Ayres Hall, to take care of my ever-demanding family.

Tell us where you are and what you're doing now.

I am still in Knoxville, and my main focus is still my family: Bill and I just celebrated our 30th wedding anniversary, George-our older son-is in college, Peter-our younger son-is a 16 year old senior in high school, and we help my sister take care of my mother, who is recovering from cancer. As far as paid work is concerned, I am currently working part time for the non-profit, Legacy Parks Foundation where I am the sole staff working under Carol Evans. We work to expand parks, greenways, and recreational space for Knox and surrounding counties. My role is "the worker bee," maintaining all records, equipment, and books for the Foundation. We recently purchased the bluff property in South Knoxville, directly across the river from campus, to preserve the green space and "view shed" (that spectacular tree-filled view you get while driving along Neyland Drive). Eventually, we plan to have a network of parks containing over a thousand acres of woodlands, Civil War sites, and greenways, running from Alcoa Highway, through Island Home, past Ijams, and on to the Knox County line. If anyone is interested in our work, our website is www.legacyparks.org.

If at all, how did working at ICL prepare you for the things you have been involved in since leaving?

LOL. I have to say that working with all the PhD's probably prepared me for being a parent! Actually, all the experience I had with the different personalities, the different needs, and the different projects all under one head with one departmental goal, prepared me for the work I ended up doing in the non-profit world. Each board member and each project have individual needs that are as legitimate as the others, and all contribute toward a shared goal. I learned how to prioritize and anticipate needs while balancing the load on myself and any other staff or volunteers. I also learned not to take it too personally. Being the one that has to say, "No," or "I'm afraid you'll have to wait," is not fun. And just as a systems administrator is the one in the middle of all the pulling for resources, the administrative support for a non-profit has to respond to many different pulls, even if it's a slightly different sort of resource. There's a saying in system administration that if you're doing your job correctly, no one knows who you are. I would amend that to say, you know you're doing your job correctly if no one cringes when they hear your name. It's the same in any administrative support role. It's all a matter of respect and acknowledgement for the people you work with day to day, and I learned how to do that while working at ICL.

Tell us some things that you miss about ICL and working at UT.

I miss the people, the Friday lunches together, and my awesome office in the corner, even if it was cold! I miss the challenge of finding solutions for all the bleeding-edge researchers. I do not miss "window net" (that will show how Old School you are if you remember that!), but I do miss finding expedient, working solutions to novel problems. There was an excitement with the job that I have not had since. Of course, I have had a lot of excitement with my kids, and that trumps missing the job. With two kids in college next fall, it's safe to say I still have daily problems to find inventive solutions for, they're just not as technical!

Professionally, where do you see yourself 5 or 10 years from now and why?

Professionally, in five years I'm sure I will be off on some grand adventure with my husband. Bill is receiving his Masters in Public Administration this December, and we are looking forward to our new life as empty-nesters. As a fifty-something, I would like to do something I enjoy; I have a hobby creating silver jewelry, and I want to spend more time developing those skills. In ten years, I expect I will be officially retired, and hopefully travelling around to visit family and grand children!

Thank you for asking about me and giving me a chance to reminisce about ICL.

UT Basketball Season Starting

Beginning Nov. 2nd, UT's basketball season kicks off with the Lady Vols hosting Carson Newman College. With most weekday games beginning in the early evening, there will be an increase in traffic on and around campus. Please keep this in mind as you plan your work schedules. Each month, we will post the dates for basketball home games in the Dates to Remember section of the newsletter.

UT's Ready for the World Café

Looking for a new place to eat lunch on campus? Try the Ready for the World Café in the University Center. Offering an all-you-can-eat buffet of international fare that changes weekly, the Café serves lunch from 11:30 am to 1:30 pm Mon – Thur in the Hermitage Room on the 3rd floor for $11 dine-in or $9/plate for carry out.

SC '10 ICL Dinner

The ICL SC dinner will be on Wednesday the 17th at 7:00 pm at Huck Finn's Cafe, 135 Decatur Street, NO French Qtr, LA 70130. Please RSVP to Tracy at rafferty@eecs. utk.edu by Monday the 15th. See the **restaurant's website** for menus and contact information.

ORNL Unveils Climate Research Supercomputer

ORNL recently unveiled a Cray XT6 to be used for climate research. The new machine, called "Gaea, Mother Earth," and located near the Cray "Jaguar" currently has a theoretical peak of 260 teraflops but will be upgraded to reach petascale in the near future. See the Atomic City Underground **blog post** for more information including an artist's rendering of the cabinets.

RELEASES

PAPI 4.1.1

Primarily a bug fix release, 4.1.1 also includes support upgrades for the perf-events interface built into recent linux kernels. For more information about the release, see the **PAPI release notes**.

PEOPLE

Jack Interviewed About Chinese Supercomputing

Jack has been interviewed recently by several news outlets on the topic of the rise of Chinese supercomputing power:

NYTimes · **BBC** · **NPR** · **CNET**

UPCOMING CONFERENCES

NOV 13 – 19 NEW ORLEANS, LA
SC '10
Jack, Terry, Tracy R., Thomas, George, Wes A., Wes B., Piotr, Shirley, Aurelien, Peng, Fengguang, Dave C., Julie

RECENT LUNCH TALKS

OCT 1 Piotr
Thinking Outside the Tera-scale Box PDF

OCT 6 Xiaohua Zhang
From Molecular Design to Conformational Search: Applications of Computational Chemistry PDF

OCT 15 No Lunch Talk (IESP)

OCT 22 Jeff Larkin from Cray
A Brief History of Supercomputing PDF

OCT 29 George Bosilca
The Quest for Perfobility PDF

UPCOMING LUNCH TALKS

NOV 5 Jim Plank from EECS

NOV 12 Jens Gregor from EECS

NOV 19 No Lunch Talk (SC '10)

NOV 24 TBA

DATES TO REMEMBER

NOV 2 Women's Basketball – 7:00 pm

NOV 3 Men's Basketball – 7:30 pm

NOV 7 Women's Basketball – 3:00 pm

NOV 8 Men's Basketball – 7:30 pm

NOV 12 Men's Basketball - TBA

NOV 13 Football vs. Mississippi – TBA

NOV 15 Women's Basketball – 7:00 pm

NOV 16 Men's Basketball – 9:30 pm

NOV 17 NIT at Thompson Boling Arena – TBA

NOV 18 Women's Basketball – 7:00 pm

NOV 21 Women's Basketball – 2:00 pm

NOV 22 Men's Basketball – NIT Game - TBA

NOV 23 Men's Basketball – NIT Game – TBA

NOV 25-26 Holiday – Thanksgiving (UT Closed)

NOV 27 Football vs. Kentucky – TBA

NOV 30 Men's Basketball – TBA