

~Upcoming Events~

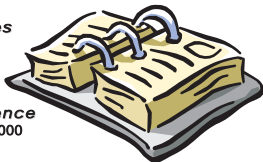
Mark Your Calendars for these Exciting, New Events!



**-August 2005 - May 2006 -
2005/2006 University Speaker Series**
Contact us to find out how you can participate!



**-Coming In February 2006 -
Seventh Annual Austin CAS Conference**
IBM Campus, Building 904, ARL Classrooms 6D-000



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Austin Center for Advanced Studies
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IBM Research

Austin Center for Advanced Studies

3rd Annual Newsletter 2005

Volume 3

Luncheon Honors 2005 Faculty Award-Winning Professors

On August 12th, the Austin Center for Advanced Studies hosted its 2005 Faculty Award Luncheon to announce the 2005 Austin CAS award-winning research being sponsored by IBM Partnering Executives. In attendance were nine of this year's twenty-four winning professors. Many were locals from the University of Texas at Austin: Lizzy John, Kathryn McKinley, Randolph Bias, Warren Smith, Calvin Lin, and Jim Dyer. Others came from farther away, including Patricia Teller from the University of Texas at El Paso, Weiping Shi from Texas A&M University, and Jennine Cook from New Mexico State University. The event included these professors' IBM sponsoring executives and technical contacts. Also in attendance were CAS students finishing up internships at IBM Austin and presenting in the Annual CAS Summer Conference, along with their mentors.

Among those who addressed the crowd were Dr. Ann Marie Maynard, CAS Program Director, and Mark Papermaster, a sponsoring executive from the Systems & Technology Development. Maynard welcomed the audience and said that she was proud to work for a company willing to so generously support the academic community and collaborate with universities on research. She pointed out that the \$600,000 worth of funding announced that day by Austin CAS was only a



(left-right) RANDOLPH BIAS, Professor, University of Texas at Austin, School of Information, TODD MOORE, IBM Software Group, Application and Integration Middleware Software, WAS Consumability and UX, BILL BOON, IBM CHD, Enterprise on Demand, and ANN MARIE MAYNARD, Program Director of Austin CAS

small fraction of IBM's total giving. Papermaster emphasized the importance of innovation and its centrality to the IBM mission, recalling T.J. Watson and his famous "Think." slogan.

All professors and their IBM technical contacts present at the ceremony were invited to come up and talk about the research that this year's awards will be supporting. Some are excited to be starting new projects, while others look forward to continuing work that is already well-underway. In addition, all faculty winners were handed certificates, official 2005 ACAS brochures and proceedings, CAS notepads, and T-shirts featuring this year's theme of a cowboy at sunset.

Guests enjoyed a special

Texas-style meal of fajitas and pecan pie. When they weren't watching the award presentations, they visited with each other, caught up on developments of the past year, and discussed research plans. In that sense the luncheon was much like a business meeting and a festive party rolled into one! Not only was it a chance to celebrate IBM's proven commitment to universities and collaborative research throughout the United States and beyond; it was also an opportunity to strengthen the relationships that will result in successful future cooperation. (Featured Awards on pages 6-7.)

-Newsletter articles written by Emily Seen, 2005, Austin CAS Summer Intern

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Austin CAS Mission

The IBM Austin Center for Advanced Studies (Austin CAS) is an IBM-Research-based institution dedicated to promoting and cultivating university relationships and collaborative research between IBM and universities across the United States and beyond. In Partnership with IBM business units dedicated to research, development, and services, Austin CAS provides universities with a window that spans a relevant cross-section of the Corporation. The Center is a focal point for an effective, coordinated approach to university relations.

Located at the IBM Austin Research Laboratory, one of eight facilities for IBM Research worldwide, Austin CAS has been officially serving as the first US-based CAS center since June 2000. Originally modeled after the IBM Software Group Toronto CAS, the Austin Center mission has expanded and evolved in response to the diverse requirements of our large, multi-divisional partnerships across IBM. Over the years, Austin CAS has grown from three Executive Founding Partners to include most of the relevant organizations at IBM including Systems Group (SG), Austin Research Laboratory (ARL), PowerPC Technology Development, UNIX and xSeries Software Development, UNIX Hardware Development, Pervasive Computing, the Sony-Toshiba-IBM Partnership (STI), Electronic Design Automation (EDA), Linux Technology Center (LTC), Software Group (SG) including Tivoli Software, and others. Austin CAS works closely with IBM University Relations to provide programs that best meet IBM Corporate needs and objectives.

The seven projects underway

when Austin CAS was announced now totals approximately 35 projects and growing that will directly benefit IBM efforts in major areas of hardware, software, systems technology, performance and services. Projects currently underway are focused on architecture and advanced circuit design, performance analysis, systems, software, tools, e-business, Linux development, autonomous computing, low power, and more. The three initial universities collaborating with IBM through Austin CAS during its pilot phase has expanded to over 22 universities across the US and Europe that represent a mix of local universities, top research universities, and traditionally-minority institutions including the University of Texas at Austin, Carnegie Mellon University, University of Michigan-Ann Arbor, Texas A&M, University of Texas at El Paso, University of Minnesota, New Mexico State University, University of Maryland-Baltimore County, University of Puerto Rico-Mayaguez, Rice University, University of California-Santa Barbara, University of North Carolina at Chapel Hill, Politecnico di Torino (Italy), George Washington University, Pennsylvania State University, Georgia Institute of Technology, University of Illinois at Urbana-Champaign, University of Wisconsin-Madison, MIT, Iowa State University, Florida Atlantic University, University of Central Florida, and others.

The Austin CAS Student Program builds on the relationships begun with faculty by encouraging IBM organizations funding research to offer internships and sponsor fellowships to students working with their research faculty. Students able to take advantage



of this powerful connection find they are better prepared for their summer or coop position, and return to school after their internship experience with enhanced expertise to continue their research.

By working in joint research relationships fostered by the Austin CAS, universities are discovering valuable insights that they might not encounter in the university environment. Students are participating in commercial efforts that complement the university teaching environment. IBM mentors are finding that working with university faculty and students is an enriching experience that adds an exciting dimension to their work. IBM is finding that building relationships along with groundbreaking research, and having an institution to cultivate, organize, and maintain their interests, yields a bigger return on their university investments.

For more information, contact Dr. Ann Marie Maynard, Program Director (amg@us.ibm.com), or see our website <http://www.research.ibm.com/acas>.

EXITE Camp 2005 (cont)

has now been involved with EXITE for four years. The program made a big enough impact on her as a camper that she has wanted to come back and help as a cadet counselor ever since. Lopez even says that still gives in touch with the mentor she was assigned.

Camp ended on Friday with a celebration of the week's accomplishments. Dinner was provided, as were t-shirts and backpacks for participants. The girls gave PowerPoint presentations and showed off their "Robolab" skills by running their cars through an obstacle course. The celebration was an interesting chance to hear feedback from families. For example, Michelle Watson said of her

daughter Briana, 12, from C.D. Fulkes Middle School: "She came home and told me she was learning a lot - and also that she was in awe of the facilities, especially the pool and foosball tables!" The girls themselves made a few suggestions for how the camp could be improved, among them: building a pair of shoes instead of just one, making their own video games, and having a sleepover in Pervasive Lab. Most of all, though, they offered their praises of EXITE and the people who had worked so hard to make it all possible.

Certainly one hope for the EXITE program is that it will inspire young girls to pursue careers in technology and engineering. However, Sandy Dochen, IBM Corporate Community Relations Manager, spoke at the closing ceremony and pointed out that IBM hopes to accomplish an even greater goal: showing the girls that no matter what they do, it's important for them to have knowledge of science and how to apply it. Of course, along with that comes the challenge of convincing them that science is fun, and EXITE appears to have lived up to the task. In the words of Megan Seely, 12, from Westview Middle School: "I expected it would be boring - but it wasn't!"



All Smiles



Hard at work



Party Time!

News & Events

EXITE Camp 2005

The week of June 6-June 10 was an "exiting" time for middle school girls and IBM. During those five days, twenty-six girls were invited to come to the IBM site and be part of an annual summer camp involving a combination of talks, field trips, and hands-on activities designed to make them delve into science. The EXITE (Exploring Interests in Technology and Engineering) program is held at over forty IBM locations worldwide. In Austin, one of the first to offer it, the program is already in its sixth year, the past four of which it has been led by Lisa Gable, Manager of eServer Technology and CAS Faculty Research



Enjoying Robolab

Program Manager. EXITE is an important aspect of IBM's community outreach and proof of the company carrying out its stated mission to "count education as the top priority in its philanthropic efforts."

EXITE camp 2005 was action-packed from beginning to end. For example, on their first day the students saw how ice cream could be made using liquid nitrogen. One project they worked on throughout the week involved a car built out of legos that they learned to control using the Robolab program. Another activity challenged the girls to

apply the engineering design process. They had to dream up plans for "the ideal shoe" and then actually construct a prototype using provided materials such as tape, fabric, colored foam, ice cream cups, and blocks of wood. Models ended up including special features like pockets and the ability to double as a purse. Campers also built burglar alarms, which they

were allowed to bring home and set up in their rooms (perhaps to deter pesky brothers, as suggested by volunteer Christopher Doan, IBM Software Group, Tivoli). Amazingly enough, there was even time for visits to Selectron and IBM's Pervasive Lab.

A particularly great thing about the EXITE program is that it introduces participants to resources that they can continue to take advantage of when camp is over. For instance, the girls

were introduced to www.try-science.org, an educational website for kids powered by IBM that includes online adventures (e.g. "The Ultimate Race") and cool experiments (e.g. "Mummy Magic" and "Spaghetti Bridge"). In addition, each camper was given an IBM mentor that she will be able to email throughout the coming year.

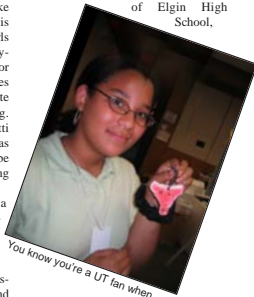
Interaction with people was a critical aspect of the EXITE experience. The girls got to listen to a number of speakers. Among them were Laura Skirde, a meteorologist from local television station KXAN who discussed extreme weather conditions, and



Shoes Galore

William Rockefeller, an IBMer with STI who talked about gaming. Of course there was no shortage of contact with volunteers from all around the Austin site who came to assist with the different activities. And on top of that was the special relationship between the girls and their counselors.

One of them, Kristie Lopez of Elgin High School,



You know you're a UT fan when...

Faculty Spotlight

Jeanine Cook's Happy Research Career



Jeanine Cook, CAS Faculty Research Award winner, says that her chosen career path was the result of both her natural academic interests and the guidance of an important teacher in her life. Cook, whose father was a physicist, had always liked math and science, so it made sense that she would end up studying a technology-related discipline. But it was taking a class from Pat Teller (also a Faculty Award winner) at the University of Texas at El Paso that inspired her to focus on the challenges of computer architecture. Cook received her bachelor's and master's degrees in electrical engineering at the University of Colorado; she completed her doctorate at New Mexico State University and began teaching as a Ph.D. student. This coming fall will mark Cook's fourth year as a faculty member at NMSU, where she is a professor at the Klipsch School of Electrical and Computer Engineering and director of the Advanced Computer Architecture Performance and Simulation Laboratory.

Cook's relationship with IBM

began when she was getting close to finishing her Ph.D., and Jim Dillinger, of the STI Design Center, tried to recruit her to come work for the company in Austin. She ultimately decided to stay in New Mexico and turned the position down, but according to Cook: "IBM stuck out to me as being really innovative and doing smart things architecturally. I knew that somehow I needed to stay involved with the company because I want my research to be relevant, not just academic." Cook's involvement with IBM has indeed continued thanks to the CAS program. The relationship has given her the funds to support Ph.D. student Ramkumar Srinivasan. He has already been to two CAS conferences with Cook and will hopefully be an IBM intern next summer.

Although she has a number of other research sponsors, Cook says that her partnership with IBM is special, particularly because of the yearly conference that is unique to CAS and gives participants the chance to meet with others doing work in similar areas. It was actually at a CAS conference that Cook was reunited with Pat Teller, and the two decided to begin collaborating with each other's research groups. Cook counts Teller, along with CAS Program Director Ann Marie Maynard and CAS professor Lizzy John of the University of Texas at Austin, among her role models. Their careers are especially inspiring to her considering that they work in a field in which opportunities for women have tended to be different than those for men.

Cook's main research interests are microarchitecture simulation techniques, performance modeling and analysis, workload characterization, and

compiler/hardware interaction. One of her major projects involves a supercomputer given to NMSU through a National Science Foundation infrastructure grant, which allows her to do a lot of simulation and performance monitoring. Another deals with compiler level optimizations on reducing power consumption in the microarchitecture; the idea is to turn off units that aren't being used via implementation in the software as opposed to the hardware. When asked for her best piece of research-related advice, Cook responds: "You've just got to get out there so that people will remember your name. You have to be persistent - even when you don't get the most encouraging reviews. That's the only way you'll make the contacts that are so important for successful research."

That philosophy is one that reflects Cook's optimism and sense that instead of trying to always take life so seriously, we should above all make sure we enjoy it: "The minute you stop being able to laugh about things, you're in very big trouble!" And Cook definitely seems to be someone who has taken her own suggestion. She clearly loves what she does, whether she is sleeping or horseback-riding in the New Mexico desert and mountains (her favorite hobbies) or devoting herself to research and teaching!



Student Spotlight



Joselyn Torres Successfully Completes First Year at the University of Michigan

A follow-up article on this GEM fellowship winner, who was interviewed for last year's newsletter as he was about to begin pursuing his masters degree.

course; in Puerto Rico classes were based more on exams than on weekly assignments. He also felt that the atmosphere was more competitive than what he had been accustomed to in Puerto Rico.

But at the same time he acknowledges that naturally competition is part of the deal if you want to attend a top 10 engineering school like the University of Michigan, and there are certainly many rewards for dealing with the pressure. Among them are great facilities and access to tools used in industry like Cadence and Mentor Graphics. As is the case everywhere, there are always more and less helpful faculty members, but in general Torres speaks highly of his professors. Some of them are well-known in their areas of expertise and have experience in industry.

This past academic year has been a busy one for CAS student fellowship winner Joselyn Torres, who last fall left his home in Isabela, Puerto Rico, and began graduate studies in electrical engineering at the University of Michigan. His classes were challenging and included "Microwave Circuits," "Introduction to Mixed Signal Circuits," and "Analog to Digital Converters." In the first months Torres had to spend forty to fifty hours per week, and in the last couple of months that number increased to sixty or seventy because two of his classes had final projects requiring him to design a receiver and a current mode pipeline A-D converter. Torres says that what surprised him the most about his first year was the amount of homework in every



Of course Torres also has his own direct way of gaining an industry perspective through his relationship with IBM. He is now working with Dave Boerstler and Chet Wyzkowski in the STI group where, among other things, he is programming in VHDL, using Simulink to model circuits, and testing PLL circuits. This is his fourth summer as an IBM intern, and each time he has been at the Austin site. However, this is his first year outside of the Research Division.

The transition is just one of many that he has made recently. Starting graduate school at the University of Michigan was an especially big change for Torres because of what it meant to leave his native Puerto Rico; the things



he missed most besides his family and friends were the island cooking, the tropical climate, and his culture. However, he found ways to adjust. For example, Torres became good friends with two students that he met in class (from Jamaica and California). His family would send him native candies from home, which helped make up for him not being able to have the island food he was used to. And although coping with Michigan weather was tough, he was able to pull through that as well. According to Torres: "In my free time I would sometimes watch a Pistons game, or during September and October I might play basketball. But a lot of times I would end up watching movies at home - it was just so cold that I didn't want to go out!" Torres has obviously been receiving an education at the University of Michigan that has not only sharpened his technical skills, but also reinforced that life is about learning how to adapt.

Meet the Team



Ann Marie Maynard

DR. ANN MARIE MAYNARD, Austin CAS Program Director, continues to lead the Center for Advanced Studies. In addition, she has returned to active research focusing on Next Generation Usability Assessment of Fully Mobile Wirelessly Connected Multimodal Devices running Mobile Workforce Enterprise Solutions. She received her Ph.D. in electrical and computer engineering from Carnegie Mellon University in 1992.

LISA GABLE, Faculty Research Program Manager, joins CAS from Systems Technology and Operations where she is manager of eServer Technology. She has her M.S. in Manufacturing Systems Engineering from The University of Texas at Austin and her B.S. in Industrial Engineering from California Polytechnic State University in San Luis Obispo, California. In addition to her management role and her participation in CAS, Lisa also directs IBM Austin's EXITE (EXploring Interests in Technology and Engineering) camp, leads Austin's WIT (Women in Technology) chapter, and is the financial manager for STG's Climate Advisory Council.



Lisa Gable



Kevin Nowka

KEVIN NOWKA, Faculty Research Program Manager, is a senior manager at the IBM Austin Research Laboratory. He currently manages the VLSI Systems organization, which conducts research on device technology and design tools, design verification and analysis, and exploratory VLSI circuits. He received his Ph.D. degrees in electrical engineering from Stanford University in 1995.

CHRISTA MACE is staff and graphic/web designer for Austin CAS and the Austin Research Lab. She is currently working toward a degree majoring in visual communication design with an interactive design specialization.



Christa Mace



Cheranellore Vasudevan

DR. (VASU) CHERANELLORE VASUDEVAN, CAS Research Staff Member and University Speaker Series Lead, currently works in the Integrated Supply Chain division developing Sales Configurators and related systems. He is also an adjunct faculty member of the computer science department at Texas State University in San Marcos, Texas. He received his Ph.D. in computer science from Florida Atlantic University in Boca Raton and his master's degree in electrical engineering from the Indian Institute of Technology in Madras, India.

DR. LIXIN ZHANG, Research Advisor, is a research staff member at Austin Research Lab. His interests are in the areas of computer architecture, architectural simulators, performance analysis, and advanced memory systems. He is currently working in the PERCS project. He received his B.S. in computer science from Fudan University in 1993 and his Ph.D. in computer science from the School of Computing at the University of Utah in 2001. He was a post-doctoral research associate at the University of Utah from January 2002 to August 2003.



Lixin Zhang

EMILY SEEN, Intern to the Program Director, has now finished her freshman year at Princeton University and is glad to be back in Austin for the summer working for IBM Research. She will be helping with the CAS summer schedule, website, and annual newsletter.



Emily Seen

University Spotlight

Growth of the University Speaker Series

Just as CAS itself has expanded over the years (with additional staff members forming an increasingly bigger and better team), so has its speaker series program! Started five years ago by Joshua Friedrich, Technical Leader and IC Design Engineer for IBM's Enterprise Server Group, the speaker series began as an exchange between his organization and the electrical engineering department of the University of Texas. Since then, it has grown to encompass a large and diverse number of IBM organizations (e.g. SWG, Tivoli, Research, IGS, UNIX HW, AIX, EDA, LTC) as well as UT's Department of Computer Sciences, College of Communication, and McCombs School of Business. Furthermore, this past year the program has been invigorated by the leadership of Cheranellore Vasudevan, who has joined the Austin CAS Staff and works in IBM's Integrated Supply Chain Division.

The university speaker series identifies IBMers interested in serving as one-day guest lecturers and professors who are excited about having IBM



experts visit their classrooms. The program is a wonderful opportunity for IBM technical specialists with a love for teaching to share their knowledge and experience. During academic year 2004-2005, sixteen lectures were arranged.

The relationship has important benefits for everyone involved. Gordon Novak of the UT Department of Computer Sciences explains: "The students get to see what people are doing in the real world. Hopefully they will see their academic studies are relevant and see some advanced work beyond what we have covered in class." From an IBM perspective, the program offers access to a key audience and is an excellent advertising and recruiting tool. As Dan Wolfson of the IBM Software Group says: "It introduces potential future customers and employees to our technologies." In addition, both sides gain by getting a better sense of each other's research interests, thereby encouraging collaborative projects.

Of course there are a few challenges. For one thing, presentations have to be engaging without becoming overwhelming. This can be hard particularly at the undergraduate level, as students may just be getting a foothold on difficult material. And according to Charles Lefurgy of the Austin Research Lab who recently gave a talk on "Code Compression" this spring: "For me, the



most challenging thing was to keep my lecture to the allotted time of 90 minutes!"

Nevertheless, those who have volunteered to help with the speaker series consider their energy well spent. Lefurgy says: "I find that I sometimes think of my new work in a new way when I try to explain it to someone for the first time." Vasudevan, the new leader of the speaker series, first got involved with the program because he was teaching as an adjunct professor at Texas State University and wanted to find out more about IBM's interactions with the academic world: "I have greatly enjoyed getting to know the professors and the University of Texas."

But nobody has to take their word for it! Anyone who would like to participate in this valuable program and experience its advantages firsthand is encouraged to do so. Please contact:

Cheranellore Vasudevan
University Speaker Series Lead
(512) 823-7356
vasuv@us.ibm.com

For more information on the web visit:
http://domino.research.ibm.com/acas/w3/www_acas.nsf/pages/seminars.ut.html

Meet these IBM employees who started out as part of CAS...



AJ KLEINOSOWSKI,
Austin Research Lab,
VLSI Design



RAHUL RAO,
Watson Research Lab,
VLSI Design



ALAN DRAKE,
Austin Research Lab,
VLSI Design



MARY BROWN, Sys &
Tech Group, Series
Microprocessor Dev



JUAN RUBIO,
Austin Research Lab,
Power-Aware Systems

Summer Conference

Austin CAS 5th Annual Summer Student Conference

For the past four years, the Annual CAS Summer Conference has been a capstone that showcases the accomplishments of months worth of productive exploration done by CAS interns at IBM Austin. On August 12th, 2005, this year proved itself to be no exception! The day was organized into five sessions and eighteen student presentations on: Low Power Management, Advanced Software Topics, Architecture and Performance, CAD & Tools, and Next Generation Circuits. Students and faculty who work for IBM under this program are predominately working on graduate level/advanced research and conducting joint university research sponsored by our Partnering Executives during the academic year.

For students, the summer con-



Examining CAS brochures: Diana Villa, UT El Paso, and Carole Gottlieb, IBM Systems & Tech. Group, with Program Director Maynard

ference offers a sense of satisfaction and closure before heading back to school in the fall. Putting together a presentation improves their communication skills and forces them to make sure they fully understand the work they have done. In addition, they learn from the comments and questions generated by audience members. For example, Cliff Sze (of Texas A&M University) says: "There were a lot of circuit designers who came to my talk, and since I'm working on tools, it was really helpful to get feedback from the people who use them." Another benefit is being able to see what projects their peers are involved in. According to Aniket Saha (of the University of Texas at Austin): "It's great to hear about what the other interns have been doing."

The summer conference is an event designed to maximize the returns on IBM's investment in summer internships and university sponsored research. Lixin Zhang, of Austin Research Lab's Performance & Tools Team, explains: "Summer interns often explore areas that are a bit out of the ordinary - beyond our normal scope." They bring welcomed help to investigate interesting and valuable topics that their mentors may not themselves have enough bandwidth to



Fabio Oliveira, Intern, Rutgers University study. Juan Rubio, of Austin Research Lab's Power Aware Systems Team, points out another benefit of having the conference: "As regular employees we can become so focused on our own specialized teams that we forget to look at what other groups are doing. The CAS Summer Conference is excellent because the interns present a really cross-sectional view of IBM's research progress and remind us to think about the direction the organization is moving as a whole."

As these comments suggest, interns are one of IBM's greatest assets. They are an indispensable "extra set of hands and fresh minds" and also show a youthful determination to push boundaries and reintroduce "big picture" perspective. Nothing highlights this better than the Annual CAS Summer Conference!

Center for Advanced Studies Welcomes Summer Students



Cliff Sze, of Texas A&M University

On June 24, 2005, the Austin Center for Advanced Studies held its 5th Annual Summer Student Welcome. The atmosphere, of course, was fun and friendly. When Lorraine Herger, Director of Austin Research Lab, spoke to the interns, she encouraged them to come say hello to her and introduce themselves. She also joked that she would be sure to look out for them and make sure their managers didn't work them too hard! A pizza lunch was provided, and all interns became the lucky recipients of IBM backpacks and umbrellas. As can be seen from these pictures, the event was a hit!



Jay Patel, of the University of Illinois

Featured 2005/2006 Awards

Capturing the Essence of Emerging Workloads for Performance/Power Estimation and Validation

Lizy John, Department of Electrical and Computer Engineering, University of Texas at Austin
IBM Technical Contact - Alex Mericas, IBM Systems & Technology Group, Development,
Hardware Performance Instrumentation
IBM Sponsor - Mark Papermaster, IBM Systems & Technology Group, Development, VP, Microprocessor Technology Development, IBM Systems Grp.

Write Caches: Expanding Write Buffer Duties

Kathryn McKinley, Department of Computer Sciences, University of Texas at Austin
IBM Technical Contact - Frank O'Connell, IBM Systems & Technology Group, Development, Technical Computing Performance
IBM Sponsor - Mark Papermaster, IBM Systems & Technology Group, Development, VP, Microprocessor Technology Development, IBM Systems Grp.

Continuous Optimization and Coordinated Power Management

Stephen Keckler, Department of Computer Sciences, University of Texas at Austin
IBM Technical Contact - Ron Kalla, IBM Systems & Technology Group, Development, Processor Development
IBM Sponsor - Mark Papermaster, IBM Systems & Technology Group, Development, VP, Microprocessor Technology Development, IBM Systems Grp.

Comprehensive Compiler-Directed Power Management

Jeanine Cook, Klipsch School of Electrical and Computer Engineering, New Mexico State University
IBM Technical Contact - Lee Eisen, STSM, eClipz Development
IBM Sponsor - Mark Papermaster, IBM Systems & Technology Group, Development, VP, Microprocessor Technology Development, IBM Systems Grp.

High Speed Optical Interconnects for High Throughput, Low Latency Server Systems

Ge-Kung Chang, Department of Electrical and Computer Engineering, Georgia Institute of Technology
IBM Technical Contact - Moises Cases, IBM Systems & Technology Group, Development, Distinguished Engineer, System Electrical Packaging
IBM Sponsor - William Ott, IBM Systems & Technology Group, Development, VP, eServer xSeries & IntelliStation Development

Automatic Power Management for BladeCenters Hosting Client Workloads

Anand Sivasubramanian, Department of Computer Science and Engineering, Pennsylvania State University

IBM Technical Contact - Moises Cases, IBM Systems & Technology Group, Development, Distinguished Engineer, System Electrical Packaging
IBM Sponsor - William Ott, IBM Systems & Technology Group, Development, VP, eServer xSeries & IntelliStation Development

Design, Fabrication, Characterization and Test of Nano-materials for Embedded Decoupling in Mid-Frequency Range for Server Applications

Madhavan Swaminathan, Department of Electrical and Computer Engineering, Georgia Institute of Technology
IBM Technical Contact - Moises Cases, IBM Systems & Technology Group, Development, Distinguished Engineer, System Electrical Packaging
IBM Sponsor - William Ott, IBM Systems & Technology Group, Development, VP, eServer xSeries & IntelliStation Development

Comprehensive Memory Performance Studies

of POWER-based Platforms: Phase II
Patricia Teller, Department of Computer Science, University of Texas at El Paso
IBM Technical Contact - Bret Olszewski, IBM Systems & Technology Group, Development, AIX Performance, and Carole Gottlieb, IBM Systems & Technology Group, Development, Systems Performance
IBM Sponsor - John Makis, IBM Systems & Technology Group, Development, Program Director, iSeries / pSeries Systems Performance

Assessment of High-Speed Digital System Performance

Flavio Canavero, Electronics Department, Politecnico di Torino
IBM Technical Contact - George Katopis, IBM Systems & Technology Group, Development, ESG Packaging Strategist
IBM Sponsor - Greg Varone, IBM Systems & Technology Group, Development, Director, Systems Technology Development

User Interface Design, Transaction Measurement, and Usability Engineering for Digital Rights Managed Media on a Cluster of Authorized Devices

Randolph Bias, School of Information, University of Texas at Austin
IBM Technical Contacts - Ann Marie Maynard, CAS Program Director, and Bill Bodin, IBM CHQ, Enterprise On Demand, STSM - Chief Architect - On Demand Workplace - Mobile Edition
IBM Sponsor - Todd Moore, IBM Software Group, Application and Integration Middleware Software, WAS Consumability and UX

On-Chip Jitter Measurement

Kevin Kornegay, Department of Electrical and Computer Engineering, Cornell University

IBM Technical Contacts - Robert Putney, IBM Systems & Technology Group, Development, STI Analog/IO, Packaging, & SPC, and Gricell Co, IBM Systems & Technology Group, Development, High Volume Microprocessor Development, and Chet Wzyzykowski, IBM Systems & Technology Group, Development, IO & Packaging Manager, STI Design Center
IBM Sponsor - Kathy Papermaster, IBM Systems & Technology Group, Development, Director, STI Design Center

UT Grid: Developing a Campus-Wide Distributed Computing Environment

Jay Boisseau, Edward Walker, and Warren Smith, Texas Advanced Computing Center, University of Texas at Austin
IBM Technical Contact - Elizabeth B. Davis, IBM Sales & Distribution, Public Sector, Client Representative, K-12 and HE Texas

IBM Sponsor - Albert Bunshaff, IBM Systems & Technology Group, On Demand Business, VP, Grid Computing Sales and Business Development

Using Dynamic Data-Flow Analysis to Improve Software Security

Calvin Lin, Department of Computer Sciences, University of Texas at Austin
IBM Technical Contact - Doc Shankar, IBM Systems & Technology Group, Development, Certified Executive IT Architect, Linux Security Lead, and Ray Young, IBM Systems & Technology Group, Development, Mgr LTC - MCP & Embedded
IBM Sponsor - Ralph Christ, IBM Systems & Technology Group, Development, Program Director, LTC eServer Development

Risk Management in New Product Development Decisions

Jim Dyer, McCombs School of Business, University of Texas at Austin
IBM Technical Contact - Bill Ciarfella, IBM Systems & Technology Group, Development, Squadrons + Program Management
IBM Sponsor - Erich Baier, IBM Systems & Technology Group, Development
Vice President, HW Program Management

Self-Configuring Hardware for Distributed Computer Systems

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Timing Driven Decap Insertion During Placement

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Test and Diagnosis of Manufacturability-Oriented Technologies

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Modeling and Extraction of Interconnect Parasitic under Process Variation

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SRAM Variability Measurements

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Embedded Microcontroller to Improve Power, Performance and Yield

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Highly Scalable Interconnect Optimization Algorithms for Integrated Synthesis/Layout System

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Extremely Fast Placement Algorithms

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