to this topic would be of great benefit to the control community.

SPONSORS
The symposium was made possible with the support of its sponsors at the University of Illinois. The organizers thank the Coordinated Science Laboratory, the Information Trust Institute, the Office of Public Engagement, the Institute of Natural Resource Sustainability, the Graduate College, the Department of Mechanical Science and Engineering, and the Illinois Student Senate for their contributions to this effort. Of particular note are the Environmental Change Institute and the Department of Electrical and Computer Engineering, both of which provided scholarship funds for graduate and undergraduate students to attend the symposium. Finally, in addition to the above campus units, Honeywell International provided essential sponsorship, which helped ensure a smooth execution of the event.

FUTURE EVENTS
Building on the momentum generated by this event, the next Symposium on Emerging Topics in Control and Modeling will be held on April 22 and 23, 2010 at the University of Illinois, with a focus on biomedical systems. Interested readers are urged to visit the Symposium Website (http://biomedsym.beckman.illinois.edu/index.html) for further details.

Kira Barton
Neera Jain
Silvia Mastellone
Yoav Sharon
Shreyas Sundaram

2009 American Control Conference

The 2009 American Control Conference (ACC) was held June 10–12, 2009 at the Hyatt Regency Riverfront in St. Louis, Missouri. The ACC is organized under the auspices of the American Automatic Control Council (AACC) and the U.S. National Member Organization of the International Federation of Automatic Control (IFAC). The ACC brings together individuals working in control, automation, and related areas from the American Institute of Aeronautics and Astronautics (AIAA), the American Institute of Chemical Engineers (AIChE), the Association for Iron and Steel Technology (AIST), the American Society of Civil Engineers (ASCE), the American Society of Mechanical Engineers (ASME), IEEE, the International Society for Measurement and Control (ISA), and the Society for Computer Simulation (SCS).

The conference venue provided an excellent environment for interaction among the attendees and for the enjoyment of the local attractions and rich culture. Although it rained briefly on Tuesday evening, the weather was generally good and did not deter attendees from viewing St. Louis from Kemoll’s Top of the MET (42nd floor) restaurant. We had excellent food and unlimited beverages along with sights of the riverfront, ballpark, and downtown.
The 2009 ACC Operating Committee

General Chair: Karlene A. Hoo, Texas Tech University
Program Chair: John Chiasson, Boise State University
Vice Chair for Special Sessions: Fahmida Chowdhury, National Science Foundation
Vice Chair for Invited Sessions: Biao Huang, University of Alberta
Vice Chair for Industry and Applications: Danny Abramovitch, Agilent Labs
Vice Chair for Student Affairs: Hosam Fathy, University of Michigan
Exhibits Chair: Richard T. O’Brien, Jr., United States Naval Academy
Finance Chair: Jing Sun, University of Michigan
Local Arrangements Chair: Shirley Dyke, Washington University at St. Louis
Publications Chair: Andrea Serrani, Ohio State University
Publicity Chair: Lawrence Holloway, University of Kentucky
Registration Chair: May-Win Thein, University of New Hampshire
Workshops Chair: Michael R. Moan, Raytheon

The success of this conference can be attributed to the 2009 operating committee, attendees, authors, presenters, and chairs. The logistics in bringing the event together were masterfully handled by the capable and enthusiastic operating committee and their devoted graduate and post-doctoral students. This team spent three years volunteering their time in planning and executing a smooth and successful conference.

THE TECHNICAL PROGRAM

The exciting and diversified technical program was put together by Program Chair John Chiasson and Vice-Chairs Biao Huang, Danny Abramovitch, and Fahmida Chowdhury. The reviewers and associate editors deserve praise for their perseverance in obtaining and completing the reviews. To assemble the technical program, the operating committee had the support of the program committee under the leadership of John Chiasson. The program for the 2009 ACC was based on material submitted by authors worldwide, with 1418 submissions, an increase of 10% from 2008. The final manuscript acceptance rate was 68%, which led to a high-quality program. The final program consisted of 129 contributed sessions, 29 invited sessions, and five tutorial sessions distributed over three days of the conference. In addition, several special sessions and industrial-sponsored sessions were distributed throughout the conference. Five sessions were scheduled on Wednesday, four sessions on Thursday, and two sessions on Friday.

In addition to the submitted papers plenary talks were given by George Verghese, Massachusetts Institute of Technology, “Getting to the Gray Box: Some Challenges for Model Reduction,” Panos Antsaklis, University of Notre Dame, “From Hybrid to Networked Cyber-Physical Systems,” and Asuman Ozdaglar, Massachusetts Institute of Technology, “Learning and Dynamics in Networks.” Asuman was the 2008 Eckman awardee. A video of their presentations can be found on the web page http://a2c2.org/conferences/acc2009/plenary.html.

The five special sessions organized by Vice Chair for Special and Interactive Session Fahmida Chowdhury, were “Modeling and Control of Micro and Nanosystems,” “Simulation of Atomic Force Microscope with Applications to Image Analysis and Control Design,” “Controls Research and Development in India: A Conversation with M. Vidyasagar,” “Control Engineering and Related Systems Approaches for Improving Behavioral Health,” and “Batch Online Analytics for Every User.”

The industrial sponsors included Boeing, Emerson Process Management, Honeywell, National Instruments, the Mathworks, and United Technologies Research. Their contributions are greatly appreciated. For the first time, a special student contest, the Collective Intelligence Challenge Problem, sponsored by Michael Moan of Raytheon was held and well attended. In addition, the IEEE Control Systems Society (CSS) and AACC Technical Committees on Control Education sponsored two evening sessions, “Preparing Tomorrow’s Scientists and Engineers for the Challenges of the 21st Century,” which featured the National Science Foundation Graduate-K–12 (GK–12) Program Director Sonia Ortega, and “The Power, Beauty, and Excitement of a Field that Spans Science, Technology, Engineering and Mathematics” workshop for high school teachers.

The permanent record of the conference is in the form of CD proceedings, which was designed and assembled by the Publications Chair Andrea Serrani, with the program information transferred from PaperPlaza managed by Pradeep Misra.

THE TUTORIALS

The industry and applications tutorials were organized by the Industry and Applications Vice Chair Danny Abramovitch. These tutorials, which focused on applied research, were “A Tutorial on the Control of Wind Turbines and Wind Farms,” “Bridging the Gap Between Academia and Industry,” “Business and Bandwidth: A Tutorial on How Business and Use Models Affect Industrial Control,” “Applied Fractional Calculus in Controls,” and “Control in Modern Printing Systems: Modular Reconfigurable Media Paths, Color Consistency, Fuser Process, and Registration.”

THE EXHIBITS

Exhibits Chair Rich O’Brien recruited nine exhibitors during this hard economic climate. The exhibitors were well integrated with other events at the conference by locating their booths.
Opening reception at Kemoll’s Top of the Met (42nd floor).

2009 ACC General Chair Karlene Hoo (Texas Tech University) welcomes the participants to the 2009 ACC.

Plenary speaker George Verghese (MIT).

Plenary speaker Panos Antsaklis (University of Notre Dame).

Plenary speaker Asu Ozdaglar (MIT).

2009 ACC Technical Program Chair John Chiasson (Boise State University) introducing the plenary session.
The Best Student Paper Competition award went to Raghvendra Cowlagi (right). The award was made by 2009 ACC Technical Program Chair John Chiasson (left). Pictured are the other finalists (from left) Brian Rigney, Vinicius Mariano, and Aline Maalouf.

Richard E. Bellman Control Heritage Award winner George Leitmann (University of California, Berkeley) for distinguished career contributions to the theory or application of automatic control.

O. Hugo Schuck award to Robert Gregg (left) and Mark Spong (right) with ACC President Wayne Bequette (middle).

ACC Vice Chair for Publications Andrea Serrani (Ohio State University).

Conference lunch.

Exhibits.
Special Student Contest organizer Michael Moan (Raytheon, 2009 ACC vice chair for workshops).

2009 ACC student volunteers from Texas Tech University, Washington University at St. Louis, and the University of New Hampshire.

2009 ACC Local Arrangements Chair Shirley Dyke prepares the 2009 ACC student volunteers for their roles.

Closing ceremony festivities at the Hyatt Riverfront St. Louis Ballroom.

Registration Chair May-Win Thein (University of New Hampshire) and Program Chair John Chiasson (Boise State University).

Russ Rhinehart (AACC outgoing treasurer) and Karlene Hoo (2009 ACC general chair and AACC workshop chair).

Willy Wojsznis speaking at the special session sponsored by Emerson Process Management.

Ian Petersen (Australian Defence Force Academy).
in the highly visible foyer area in front of the ballrooms, meeting rooms, and conference registration desk. This setting allowed for ready contact and interaction among the conference attendees and exhibitors.

THE WORKSHOPS
The preconference workshops held on Monday and Tuesday before the main conference technical program were organized by the Workshops Chair Michael Moan. A total of six one-day workshops (three on Monday and three on Tuesday) were held. The workshops were “Model Predictive Control: Design and Implementation Using Matlab,” “On Stock Market Trading and Portfolio Optimization: A Control Systems Perspective,” “Quantitative Local Analysis of Nonlinear Systems Using Sum-of-Squares Decompositions,” “Real-Time Optimization of Nonlinear Dynamical Systems,” “Optimal Control of Switching/Hybrid Systems with Applications to Hybrid Electric Vehicles, dc-dc Converters, and Autonomous Mobile Robots,” and “Applied Fractional Calculus in Controls and Signal Processing.”

LOCAL ARRANGEMENTS
AND SOCIAL EVENTS
One of the highlights of the conference was the social program organized by the Local Arrangements Chair Shirley Dyke, which included healthy choices each morning for all participants, and coffee breaks twice a day, which featured special foods of St. Louis, including Ted Drewes ice cream, pretzels, Fitz soda pop, and Gooey butter cake. The opening ceremony included an open bar, toasted ravioli, and locally brewed Schlafly beer. The view from the Top of the Met looking over the riverfront and the various athletic stadiums was breathtaking. The conference luncheon was held on Thursday at the Hyatt, which was preceded by the awards ceremony. The closing reception was also held at the Hyatt with a menu of carved meats, hot plates, vegetarian delights, open bar, and a potpourri of sweets.

THE AWARDS
The AACC presents a series of five awards each year to recognize excellence and achievement for technological, scientific, and educational contributions in the field of automatic control. These awards, along with the Best Student Paper Award, were presented at the awards ceremony. The awardees this year were:

- **Donald P. Eckman Award:** Paulo Tabuada (University of California at Los Angeles) for pioneering contributions in the design and implementation of hybrid and embedded control systems.
- **Control Engineering Practice Award:** Suresh M. Joshi (NASA Langley Research Center) for outstanding contributions to control systems analysis and synthesis methodologies for advanced aerospace vehicles and systems.
- **John R. Ragazzini Award:** George Stephanopoulos (Massachusetts Institute of Technology) for outstanding contributions in process control and systems engineering education through classroom teaching, textbook and monograph publication, and graduate student mentorship.
- **Richard E. Bellman Control Heritage Award:** George Leitmann (University of California, Berkeley) for distinguished career contributions to the theory or application of automatic control. The award is the highest recognition of professional achievement for U.S. control systems engineers and scientists.

CONFERENCE ATTENDEES
Registration Chair May-win Thein managed the registration process and the registration desk during the conference. She and her team were kept busy by the 1008 conference attendees. Among the attendees, 263 were students, an increasingly important crowd of young participants in this conference. Vice Chair for Student Affairs Hosam Fathy managed the activities devoted to the students. One of the activities is the financial travel support that the conference provides to students with funds provided by the AACC, NSF, CSS, the ASME Dynamic Systems and Control Division, and the industrial sponsors. Another important activity for the students is the Best Student Paper Competition. The winner this year was Raghvendra Cowalgi for the paper “Shortest Distance Problems in Graphs Using History-Dependent Transition Costs with Application to Kinodynamic Path Planning.” The other finalists were Brian Rigney, Aline Maalouf, and Vinicius Mariano. Hosam Fathy went the extra distance by creating an automated system to help students find roommates and to assist in a timely manner with student affairs.

Publicity Chair Lawrence Holloway aptly handled promotion of the conference, which contributed to making ACC a major conference for the controls community.

FINANCE
It is not the objective of any ACC to have a surplus after the conference. However, it is not uncommon for the ACC to have a net surplus, which is distributed back to the ACC member societies based on the number of papers and attendees from each society. The conference finances have been handled by the outstanding
and fastidious Finance Chair Jing Sun, who made sure that we stayed within budget, communicated to all individuals who needed to sign off on invoices, and tracked all financial matters relentlessly during the conference. At the time of this writing she is working diligently to remit the invoices, send invoices to societies, close the books, and prepare for the necessary audit.

**PERSONAL REFLECTION**

As the general chair for this conference, I would like to express my thanks to all the authors, session chairs, members of the program committee, numerous anonymous reviewers, PaperPlaza support team, student helpers, and members of the operating committee who made this conference a tremendous success. As most attendees know, the ACC is run 100% by volunteers who generously provide their time and effort to make the conference run smoothly. The merit of conference success is all yours! Last but not least, I would like to recognize our significant others, families, and friends who sacrificed when we were working on conference matters and absent from their lives!

Karlene A. Hoo
ACC 2009 General Chair

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**2009 ACC Education Workshops**

Two education workshops were held at the 2009 American Control Conference in St. Louis. The first workshop, “The Power, Beauty, and Excitement of a Field that Spans Science, Technology, Engineering and Mathematics,” took place on June 9. The workshop gave high school teachers the opportunity to meet with researchers and educators from academia and industry as well as National Science Foundation GK–12 fellows from Washington University, St. Louis, and Kansas University, Lawrence. The workshop focused on the importance of systems and control technology and its cross-disciplinary nature among high school teachers and students. Activities included presentations by control scholars and graduate students along with informal discussions. The talks were designed to be educational, inspirational, and entertaining while highlighting the rewards of being an engineer.

This year’s program included presentations on robots, mathematical models for medical treatments, and careers in mechatronics. Jessy Grizzle, Levin professor of engineering, University of Michigan, Ann Arbor, discussed his research to give robots the same sense of balance as humans. His videos featured MABEL, a bipedal robot designed to run. Mark Spong, dean of the School of Engineering and Computer Science and chair of Electrical Engineering at the University of Texas, Dallas, talked about the emerging area of mechatronics, which deals with the integration of mechanical systems, electronics, computer science, and control.

Models describing the dynamics of cancer growth under various treatments and how control systems can help doctors and scientists find the optimal drug protocol was presented by Urszula Ledzewicz, professor of mathematics and statistics, Southern Illinois University, Edwardsville. The relationship between seizures in animals and earthquakes was shown by Ivan Osovic, professor of neurology, University of Kansas Medical Center, Kansas City. Dominique Duncan, a graduate student in engineering at Yale University, discussed the use of diffusion geometry for detecting and predicting seizures.

Next, science, technology, engineering, and mathematics (STEM) fellows from Washington University, including C.J. DeGroot, Jeffrey Mitchell, Jose Lopez, and Kevin Derendorf discussed their experiences working with middle and high school students in St. Louis. They taught students about the math and physics involved in the analysis of a truss bridge, the basics of earthquake engineering, and using LEGO robots to promote STEM careers. A panel discussion on how to engage teachers and K–12 students in control engineering education, what role engineering plays in STEM education, and how to attract more students concluded the workshop.

This popular and inspirational workshop has been presented at every ACC and CDC since 2000. The workshop was sponsored by the IEEE CSS and AACC Technical Committees on Control Education. Bozenna Pasik-Duncan, professor of mathematics and courtesy professor of electrical engineering and computer science, the University of Kansas, and Shirley Dyke, professor of engineering, Washington University, were the organizers, assisted by Dominique Duncan, Yale University, New Haven. The organizers of the workshop wish to thank CSS and ACC and the organizers of the 2009 AACC for their support.

The second workshop, “Preparing Tomorrow’s Scientists and Engineers for the Challenges of the 21st Century,” was held on June 11. This presentation reflected on the challenges and opportunities for young investigators preparing for careers in science and engineering. Sonia Ortega, NSF Program Director for the Graduate STEM fellows in the K–12 Education (GK-12)