Awards

Marie R. Pistilli Women in EDA Achievement Award

Jan Willis - *Senior Vice President, Industry Alliances, Cadence Design Systems, Inc.*

For her significant contributions in helping women advance in the field of EDA technology.

P.O. Pistilli Undergraduate Scholarships for Advancement in Computer Science and Electrical Engineering

The objective of the P.O. Pistilli Scholarship program is to increase the pool of professionals in Electrical Engineering, Computer Engineering, and Computer Science from under-represented groups (women, African American, Hispanic, Native American, and physically challenged). In 1989, ACM Special Interest Group on Design Automation (SIGDA) began providing the program. Beginning in 1993, the Design Automation Conference provided the funds for the scholarship and SIGDA continues to administer the program for DAC. DAC normally funds two or more $4000 scholarships, renewable up to five years, to graduating high school seniors.

The 2007 winners are:

Erin Powers - *attending Harvey Mudd College, Claremont, CA*

Sean Sanders - *attending Georgia Institute of Technology, Atlanta, GA*

For more information about the P.O. Pistilli scholarship, contact Dr. Cherrice Traver, ECE Dept., Union College, Schenectady, NY 12308. email: traverc@union.edu.

A. Richard Newton Graduate Scholarships

The DAC Executive Committee has chosen to name our existing DAC Graduate Scholarships after the late Professor A. Richard Newton. We feel that supporting young faculty and graduate research is an appropriate way to honor his vision and carry out some of his goals.

Each year the Design Automation Conference sponsors several $24,000 scholarships to support graduate research and study in Design Automation (DA), with emphasis in "design and test automation of electronic and computer systems". Each scholarship is awarded directly to a university for the Faculty Investigator to expend in direct support of one or more DA graduate students. The criteria for granting such a scholarship expanded in 1996 to include financial need. The criteria are: the academic credentials of the student(s); the quality and applicability of the proposed research; the impact of the award on the DA program at the institution; and financial need. Preference is given to institutions that are trying to establish new DA research programs.

Advisor: Kartik Mohanram, *Department of Electrical and Computer Engineering, Rice Univ., Houston, TX*
Students: Quming Zhou, Mihir Choudhury
Design Optimization for the Robustness to Single-event Effects in sub-100nm Process Technologies

Advisor: Baris Taskin, *Department of Electrical and Computer Engineering, Drexel Univ., Philadelphia, PA*
Student: Vinayak Honkote
Routing for Resonant Clocking Technology in Multi-GHz Range

2006 Phil Kaufman Award For Distinguished contributions to EDA: Sponsored by the EDA Consortium

Dr. Robert Dutton, *Robert and Barbara Kleist Professor of Engineering at Stanford Univ. and Director of the Integrated Circuits Laboratory*

Robert Dutton is the recipient of the prestigious 2006 Phil Kaufman Award for his contributions as the "Father of TCAD (Technology Computer Aided Design)" which he pioneered and helped transition into successful industrial and commercial deployments.

Awards

IEEE Emanuel R. Piore Award

Randal E. Bryant - *Carnegie Mellon Univ., Pittsburgh, PA*

The IEEE Emanuel R. Piore Award was established by the IEEE Board of Directors in 1976 for outstanding contributions in the field of information processing in relation to computer science, deemed to have contributed significantly to the advancement of science and to the betterment of society. The Award is named in honor of Emanuel Piore, who was an enlightened American scientist who understood the value of basic scientific research, as well as that of applied research. The award is sponsored by the IEEE Emanuel R. Piore Award Fund.

IEEE Circuits and Systems Society
2007 Industrial Pioneer Award

Rob A. Rutenbar – *Carnegie Mellon Univ., Pittsburgh, PA*

For pioneering contributions to the development of EDA tools for synthesis of analog/mixed-signal integrated circuits and to their dissemination into widespread use in semiconductor industry by industrial cooperation and by starting up a CAD company.

IEEE Circuits and Systems Society
2007 Outstanding Young Author Award

Zhuo Li - *IBM Austin Research Laboratory, Austin, TX*

For the paper entitled, *A Fast Algorithm for Optimal Buffer Insertion,* IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, vol. 24, no. 6, pp. 879-891, June 2005 (paper co-authored with Weiping Shi)

IEEE Transactions on Computer-Aided Design
2007 Donald O. Pederson Best Paper Award

Guoyong Shi - *Shanghai Jiao Tong Univ., Shanghai, China*
Bo Hu - *Cadence Design Systems, Inc., San Jose, CA*
C.-J. Richard Shi - *Univ. of Washington, Seattle, WA*

For the paper entitled, *On Symbolic Model Order Reduction*, IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, vol. 25, no. 7, pp. 1257-1272, July 2006

IEEE Transactions on Circuits and Systems
2007 Guillemin-Cauer Best Paper Award

Payam Heydari - *Univ. of California, Irvine, CA*
Massoud Pedram - *Univ. of Southern California, Los Angeles, CA*

For the paper entitled, *Model-Order Reduction Using Variational Balanced Truncation with Spectral Shaping,* IEEE Transactions on Circuits and Systems: Regular Papers, vol. 53, no. 4, pp. 879-891, April 2006

2007 IEEE Fellows

Ruchir Puri - *IBM Corp., Yorktown Heights, NY*
For contributions to automated logical and physical design of electronic circuits.
Anirudh Devgan - *Magma Design Automation, Inc., Austin, TX*
For contributions to electrical analysis, and simulation of integrated circuits.

ACM Paris Kanellakis Theory and Practice Award

Robert K. Brayton - *Univ. of California, Berkeley, CA*

For leading the development and practical realization of algorithms for logic synthesis and for electronic system simulation, thereby helping to create key enabling technologies for the Electronic Design Automation industry.

Awards

ACM Transactions on Design Automation of Electronic Systems (TODAES) 2007 Best Paper Award

Impact of intercluster communication mechanisms on ILP in clustered VLIW architectures • Volume 12, Issue 1, January 2007, Page 1

Anup Gangwar - *Freescale Semiconductor, Inc., India Pvt. Ltd., India*
M. Balakrishnan - *Indian Institute of Technology, Delhi, India*
Anshul Kumar - *Indian Institute of Technology, Delhi, India*

ACM/SIGDA Distinguished Service Awards

Daniel Gajski - *Univ. of California, Irvine, CA*
Mary Jane Irwin - *Pennsylvania State Univ., University Park, PA*
Donald E. Thomas - *Carnegie Mellon Univ., Pittsburgh, PA*
Chuck Shaw - *Cadence Design Systems, Inc., San Jose, CA*
For outstanding contributions to the creation of the SIGDA/DAC University Booth, on the occasion of its 20th edition.

Soha Hassoun - *Tufts Univ., Medford, MA*
Steve P. Levitan - *Univ. of Pittsburgh, Pittsburgh, PA*
For outstanding contributions to the creation of the SIGDA Ph.D. Forum at DAC on the occasion of its 10th edition.

Richard Auletta - *Cadence Design Systems, Inc., Louisville, CO*
For over a decade of service to SIGDA as University Booth Coordinator, Secretary/Treasurer, and Executive Committee Member-at-Large.

ACM Outstanding Dissertation in Electronic Design Automation Award

Haifeng Qian - *Univ. of Minnesota, Minneapolis, MN*
For the dissertation entitled *Stochastic and Hybrid Linear Equation Solvers and their Applications in VLSI Design Automation*

SIGDA Outstanding New Faculty Award

Michael Orshansky - *Univ. of Texas, Austin, TX*
For a junior faculty member early in her or his academic career who demonstrates outstanding potential as an educator and/or researcher in the field of electronic design automation.

44th DAC Best Paper Candidates

Fifteen papers were nominated by the Technical Program Committee as a DAC Best Paper Candidate; six in front-end design and nine in back-end design. Final decisions will be made after the papers are presented at the conference. The awards for the best papers, one in front-end design and one in back-end design, will be presented at 12:30 on Thursday, June 7 in Ballroom 20ABC, just before the Keynote Address.

3.4 *Simulink-Based MPSoC Design Flow: Case Study of Motion-JPEG and H.264*

6.2 *Width-dependent Statistical Leakage Modeling for Random Dopant Induced Threshold Voltage Shift*

8.1 *Voltage-Frequency Island Partitioning for GALS-based Networks-on-Chip*

9.1 *Interdependent Latch Setup/Hold Time Characterization via Euler-Newton Curve Tracing on State-Transition Equations*

13.1 *Endurance Enhancement of Flash-Memory Storage Systems: An Efficient Static Wear Leveling Design*

14.1 *Comparative Analysis of Conventional and Statistical Design Techniques*

16.1 *Period Optimization for Hard Real-time Distributed Automotive Systems*

17.3 *Towards An Ultra-Low-Power Architecture Using Single-Electron Tunneling Transistors*

20.1 *Characterization and Estimation of Circuit Reliability Degradation under NBTI using On-Line IDDQ Measurement*

23.1 *Progressive Decomposition: A Heuristic to Structure Arithmetic Circuits*

24.1 *Parameter Finding Methods for Oscillators with a Specified Oscillation Frequency*

27.2 *RQL: Global Placement via Relaxed Quadratic Spreading and Linearization*

30.4 *New Test Data Decompressor for Low Power Applications*

33.3 *On-The-Fly Resolve Trace Minimization*

34.1 *An Integer Linear Programming Based Routing Algorithm for Flip-Chip Design*

Student Design Contest

The Student Design Contest promotes excellence in the design of electronic systems by providing a competition for graduate and undergraduate students at universities and colleges. It is co-organized by ISSCC and DAC. This year we received nearly 50 submissions in three categories:. operational systems, operational chips, and conceptual designs based on simulation. 9 award winners were selected.

The Student Design Contest is jointly sponsored by DAC, industry sponsors, and ISSCC.

Awards will be given at the DAC Pavilion on Monday, June 4 from 12:00pm - 1:00pm. The ceremony will include brief overview presentations from each winning project team.

Award Contributors:

Student Design Contest Co-Chairs		
William J. Bowhill Intel Corp. Hudson, MA	Byunghoo Jung Purdue Univ. West Lafayette, IN	Alan Mantooth Univ. of Arkansas Fayetteville, AR

2007 Student Design Contest Winners

• *A Wireless Implantable Microsystem for Continuous Blood Glucose Monitoring*
Mohammad Mahdi Ahmadi, Graham A. Jullien - *Univ. Of Calgary*

• *Design of an Ultra-Low Voltage UWB Baseband Processor*
Vivienne Sze, Anantha P. Chandrakasan - *MIT*

• *HBS: A Handheld Breast Cancer Detector Based on Frequency Domain Photon Migration*
Keun Sik No, Qiang Xie, Pai H. Chou - *Univ. of California, Irvine*
Richard Kwong, Albert Cerussi, Bruce J. Tromberg - *Beckman Laser Institute*

• *An Energy-Efficient Reconfigurable Multiprocessor IC for DSP Applications*
Guichang Zhong, Alan N. Willson, Jr. - *Univ. of California, Los Angeles*

• *The Scale Vector-Thread Processor*
Ronny Krashinsky, Christopher Batten, Krste Asanovic - *MIT*

• *A 94dB SFDR 78dB DR 2.2MHz BW Multi-bit Delta-Sigma Modulator with Noise Shaping DAC*
Jianzhong Chen, Yong Ping Xu - *National Univ. of Singapore*

• *A 230mV-to-500mV 375KHz-to-16MHz 32b RISC Core in 0.18µm CMOS*
Jian-Shiun Chen, Yi-Ming Wang, Yu-Juey Chang, Jinn-Shyan Wang, Tien-Fu Chen, Chingwei Yeh - *Natl. Chung Cheng Univ.*

• *A 152mW/195mW Multimedia Processor with Fully Programmable 3D Graphics and MPEG/H.264/JPEG for Handheld Devices*
Jeong-Ho Woo, Ju-Ho Sohn, Hyejung Kim, Hoi-Jun Yoo - *KAIST*
Euljoo Jeong, Jongcheol Jeong, Suk Joong Lee - *Corelogic, Inc.*

• *A 252Kgates/4.9Kbytes SRAM/71mW Multi-Standard Video Decoder for High Definition Video Applications*
Chih-Da Chien, Yi-Hung Shih, Chien-Chang Lin, He-Chun Chen, Chih-Wei Wang, Cheng-Yen Yu, Jiun-In Guo - *Natl. Chung Cheng Univ.*
Chih-Liang Chen, Ching-Hwa Cheng - *Feng-Chia Univ.*