Dr. Mary Jane Irwin to Receive 2019 Phil Kaufman Award

Cited for Extensive Contributions to EDA Through Technical Efforts, Community Service, Leadership

MILPITAS, CALIF. — October 1, 2019 — Dr. Mary Jane Irwin, Evan Pugh Professor and A. Robert Noll Chair Emeritus in Engineering in the Department of Computer Science and Engineering at Pennsylvania State University, has been selected to receive the 2019 Phil Kaufman Award for Distinguished Contributions to Electronic System Design.

The Phil Kaufman Award is presented annually by the Electronic System Design Alliance (ESD Alliance) and the IEEE Council on Electronic Design Automation (CEDA). The award ceremony and dinner will be held Thursday, November 7, from 6:30 p.m. until 9:30 p.m. at The GlassHouse in San Jose, Calif. Registration information will be available soon at http://bit.ly/2naHXwL.

Dr. Irwin is being honored for her extensive contributions to EDA through her technical efforts, service to the community and leadership. During her tenure at Pennsylvania State University, she mentored countless students and contributed to technology through her substantial research and numerous publications. Her research included creating EDA tools then using them in computer architecture research, an approach that gave Dr. Irwin influence in both academia and industry.

According to Dr. Valeria Bertacco, Arthur F. Thurnau professor of Electrical Engineering and Computer Science and associate dean for Physical Sciences and Engineering in the Rackham Graduate School at the University of Michigan, Dr. Irwin is a leader and mentor in the EDA and computer architecture communities. “Her multiple decades of standout contributions have inspired many young researchers to follow in her footsteps,” notes Dr. Bertacco. “Dr. Irwin’s research has been sought-after by industry and government alike because of its transformational and translational impact. Her work has led to novel designs that pushed the power envelope of computing and advanced modern design methodologies.”

“Dr. Irwin has had a tremendous impact on education, particularly VLSI systems design, computer arithmetic, EDA and low-power computer architecture,” adds Dr. David Atienza, president of IEEE-CEDA and professor of Electrical Engineering at EPFL. “Her course materials and textbooks have been used around the world to train numerous electrical and computer engineers who have become leaders in key IC and EDA companies such as Intel, AMD, Cadence and Mentor.”

Bob Smith, executive director of the ESD Alliance, offers: “Dr. Irwin’s research was visionary and ahead of its time. She became concerned about power consumption in the mid-1990s, long before it was a key topic. This made a substantial impact on current designs ranging from battery-operated devices to data centers.”

“Her technical achievements are great, her service to the community outstanding, and her support and mentoring for those who will follow are key factors in sustaining and growing the EDA field and opening it to an increasingly diversity of participants,” concludes Dr. Bertacco.

About Dr. Mary Jane Irwin, the 2019 Phil Kaufman Award Recipient
Mary Jane Irwin has been on the faculty at Penn State since 1977 where she currently holds the title of Emerita Evan Pugh University Professor in Computer Science and Engineering. Prior to her retirement in 2017, she also was the A. Robert Noll Chair in Engineering in the Department of Computer Science and Engineering. Her research and teaching interests include computer architecture, energy-aware and reliability-aware systems design, emerging computing technologies, and VLSI systems design and design automation.

Dr. Irwin is known for her contributions in energy-aware systems design and tools — in particular, the development of SimplePower, a cycle-accurate energy estimation tool and its use in designing energy-efficient architectures. Additional contributions include the design and prototyping of VLSI architectures for signal and image processing applications for the discrete wavelet transform. She authored or co-authored more than 200 journal, refereed conference publications and advised more than 25 Ph.D. students. Her research has been supported primarily by the National Science Foundation.

A fellow of The Institute of Electrical and Electronic Engineers (IEEE) and The Association for Computing Machinery (ACM), she was elected to the US National Academy of Engineering (NAE) and the American Academy of Arts and Sciences.

Other honors include IEEE/CAS VLSI Transactions Best Paper of the Year, the Anita Borg Technical Leadership and the ACM Athena Lecturer awards. Also, the Ten-Year Retrospective Most Influential ASP-DAC Paper, the 25 Years of FPL Most Influential Papers, ACM/SIGDA Pioneering Achievement and the EDAA Lifetime Achievement awards.

Dr. Irwin was chair of the Design Automation Conference (DAC) in 1999 and a member of the DAC Executive Committee for many years. She was the 2004 recipient of the Marie R. Pistilli Women in EDA, a prestigious annual honor that recognizes individuals who have visibly helped to advance women in electronic design. The award is named for the late Marie R. Pistilli, former organizer of DAC and close friend of Dr. Irwin, who valued equality, diversity and acceptance.

As well, Dr. Irwin and Marie Pistilli co-founded the Workshop for Women in Design Automation, now known as Women in Electronic Design, in 1996.

Among her other professional service activities are editor-in-chief of ACM's Transactions on the Design Automation of Electronic Systems and founding co-editor-in-chief of ACM's Journal on Emerging Technologies in Computing System. She was an elected member of the Computing Research Association's Board of Directors, of ACM Council and Vice President of ACM.

Dr. Irwin received her Master of Science and Ph.D. degrees in computer science from the University of Illinois, Urbana-Champaign, and is the recipient of an Honorary Doctorate from Chalmers University in Sweden.

About the Phil Kaufman Award
The Phil Kaufman Award honors individuals who have had a demonstrable impact on the field of electronic system design through technology innovations, education/mentoring, or business or industry leadership. The award was established as a tribute to Phil Kaufman, the late industry pioneer who turned innovative technologies into commercial businesses that have benefited electronic designers. Last year's recipient was Dr. Thomas W. Williams, former senior technical staff member at IBM and Synopsys' chief scientist and Synopsys fellow, noted as the co-author with Dr. Ed Eichelberger for the paper describing Level Sensitive Scan Design (LSSD).

About the IEEE Council on Electronic Design Automation (CEDA)
The IEEE Council on Electronic Design Automation (CEDA) provides a focal point for EDA activities spread across seven IEEE societies (Antennas and Propagation, Circuits and Systems, Computer, Electron Devices, Electronics Packaging, Microwave Theory and Techniques, and Solid-State Circuits). The Council sponsors or co-sponsors over a dozen key EDA conferences including: the Design Automation Conference (DAC), Asia and South Pacific Design Automation Conference (ASP-DAC), International Conference on Computer-Aided Design (ICCAD), Design Automation and Test in Europe (DATE), and events at Embedded Systems Week (ESWEEK). The Council also publishes IEEE Transactions on Computer-Aided Design of Integrated Circuits & Systems (TCAD), IEEE Design & Test (D&T), and IEEE Embedded Systems Letters (ESL). The Council boasts a prestigious awards program in order to promote the recognition of leading EDA professionals, which includes the A. Richard Newton, Phil Kaufman, and Ernest S. Kuh Early Career Awards. The Council welcomes new volunteers and local chapters.

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About the Electronic System Design Alliance
The Electronic System Design (ESD) Alliance, a SEMI Strategic Association Partner representing members in the electronic system and semiconductor design ecosystem, is a community that addresses technical, marketing, economic and legislative issues

affecting the entire industry. It acts as the central voice to communicate and promote the value of the semiconductor design ecosystem as a vital component of the global electronics industry. Visit www.esd-alliance.org to learn more.

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