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### ACM

The Association for Computing Machinery

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## ACM-IEEE COMPUTER SOCIETY AWARD HONORS INTEL'S KUCK FOR INNOVATIONS IN HIGH-PERFORMANCE COMPUTING

### *Kuck's Influence Evident in All Compilers Currently in Use*

**LOS ALAMITOS, CA, SEPTEMBER 23, 2010** – The second annual ACM-IEEE Computer Society Ken Kennedy Award will go to Intel Fellow David Kuck for advances to compiler technology and parallel computing that have improved the cost-effectiveness of multiprocessor computing. In this era of multicore architectures and petascale supercomputers, Kuck's contributions have been critical in adapting software to effectively use new hardware. He is set to receive the award at SC 10, the international conference on high-performance computing [<http://sc10.supercomputing.org/>] in New Orleans on Nov. 17.

Kuck's pioneering techniques are incorporated in every optimizing compiler in use today. His impact spans four decades and embraces a broad range of areas, including architecture design and evaluation, compiler technology, programming languages, and algorithms. During his career, he influenced the design of the Illiac IV, Burroughs BSP, Alliant FX, and Cedar parallel computers. The Kennedy Award also cited him for the widespread inspiration of his teaching and mentoring.

Kuck & Associates Inc. (KAI), the company Kuck founded in 1979, produced a line of industry-standard optimizing compilers that focused on exploiting parallelism. When KAI was acquired by Intel in March 2000, Kuck led the KAI Software Lab, a leading provider of performance-oriented compilers and programming tools used in the development of multithreaded applications. Multithreaded applications enable more efficient computing by spreading application workloads over multiple central processing units.

A professor of computer science and electrical and computer engineering at the University of Illinois Urbana-Champaign from 1965 to 1993, Kuck founded UIUC's computational sciences program. In

1983, he established its Center for Supercomputing Research and Development, which he directed for a decade. Kuck, an Intel Fellow, is currently a researcher in Intel's Software and Solutions Group, and is developing the hardware/software co-design of architectures, tools, and compilers based on performance, energy and cost.

His awards for computer architecture and software design include the IEEE Piore Award and the 1993 ACM-IEEE Computer Society Eckert-Mauchly Award [http://awards.acm.org/eckert\\_mauchly](http://awards.acm.org/eckert_mauchly) . He is a Fellow of the IEEE, ACM, and the American Association for the Advancement of Science, and a member of the National Academy of Engineering.

A graduate of the University of Michigan with a B.S. in electrical engineering, Kuck received both M.S. and Ph.D. degrees in engineering from Northwestern University. He was a Ford Foundation post-doctoral fellow and assistant professor of electrical engineering at the Massachusetts Institute of Technology.

ACM and the Computer Society co-sponsor the Kennedy Award <http://awards.acm.org/homepage.cfm?awd=167> , which was established in 2009 to recognize substantial contributions to programmability and productivity in computing and significant community service or mentoring contributions. It was named for the late Ken Kennedy, founder of Rice University's computer science program and a world expert on high-performance computing. Kennedy's own work was heavily influenced by Kuck. While on sabbatical at IBM, Kuck provided Kennedy with access to his Paraphrase system, generating the spark for Kennedy's research at both Rice and IBM.

The Kennedy Award carries a US \$5,000 honorarium endowed by the ACM Special Interest Group on Computer Architecture (SIGARCH) and the Computer Society. The inaugural award went to grid computing pioneer Francine Berman, vice president for research at Rensselaer Polytechnic Institute, for her leadership in building national-scale cyberinfrastructure.

## **About ACM**

ACM, the Association for Computing Machinery [www.acm.org](http://www.acm.org) , unites computing educators, researchers and professionals to inspire dialogue, share resources and address the field's challenges. ACM strengthens the computing profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM

supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

### **About the IEEE Computer Society**

The IEEE Computer Society [www.computer.org](http://www.computer.org) , one of IEEE's 38 societies, is dedicated to advancing the theory, practice, and application of computer and information processing technology. Through its conferences, applications-related and research-oriented journals, local and student chapters, distance learning campus, and technical committees, the Society promotes an active exchange of information, ideas, and technological innovation among its members.

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