

**Susan L. Graham, Pioneering Computer Scientist, to Receive  
2009 IEEE John Von Neumann Medal**

*Scientific Contributions and Leadership in the Field Have Greatly  
Influenced High-Performance Computing*

**PISCATAWAY, N.J. – 22 June 2009** – Susan L. Graham, a computer scientist who has made seminal contributions to computer program analysis, compiler code selection, and tools for developing software, is being honored by IEEE with the 2009 IEEE John Von Neumann Medal. IEEE is the world’s largest technical professional association.

The medal, sponsored by IBM Corporation, recognizes Graham for contributions to programming language design and implementation and for exemplary service to the discipline of computer science. The medal will be presented on 25 June 2009 at the IEEE Honors Ceremony in Los Angeles, Calif. For the first time, the IEEE Honors Ceremony will be broadcast live on the Web through IEEE.tv ([www.ieee.tv](http://www.ieee.tv)).

Known for taking her ideas through the full development cycle from practice to theory then back into practice, the results of Graham’s work are widely used in practical compiler systems that convert high-level programming language code into the target language instructions used by a computer. She has promoted the development and distribution of widely used software throughout her career, and her service to the field has been demonstrated through her work on national committees and as founding editor of a leading programming language journal.

Graham’s innovations include a sophisticated pattern-matching algorithm for generating machine code for high-level languages, which is important for today’s processors, and an important and useful elimination-style algorithm for analyzing the flow of values in a program. She introduced automatic error message generation as a useful tool, pointing the field in a new direction; was the co-creator of the Titanium language and system, which is used to develop parallel programs for scientific applications; and developed the “gprof” profiling tool for analyzing the execution efficiency of programs. Her current research interest is in developing interactive language-aware tools for creating and maintaining software.

Graham has served on several national advisory committees including the Presidential Information Technology Advisory Committee, for which she co-authored the report that helped convince the U.S. Congress to bolster information technology spending, and the National Research Council’s Future of Supercomputing committee. She also has served as the chief computer scientist for the National Partnership for Advanced Computational Infrastructure, where she ensured that the best computer science results were transferred into important high-performance computing applications. Graham was the founding editor-in-chief of the “Association for Computing Machinery (ACM) Transactions on Programming Languages and

Systems,” a role that helped her set the scientific standards for the field.

An IEEE member and member of the National Academy of Engineering, Graham is a Fellow of the Association for Computing Machinery, the American Association for the Advancement of Science and the American Academy of Arts and Sciences. Her honors include the ACM SIGPLAN Career Programming Language Achievement Award (2000), the ACM Distinguished Service Award (2006) and the Harvard Medal (2008). She received her bachelor’s degree in mathematics from Harvard University, Cambridge, Mass., and master’s and doctorate degrees in computer science from Stanford University, Palo Alto, Calif. She is currently the Pehong Chen Distinguished Professor of Electrical Engineering and Computer Science Emerita and a professor in the Graduate School at the University of California, Berkeley, where she has spent most of her professional career.

#### About IEEE

IEEE, the world’s largest technical professional association, is commemorating its 125<sup>th</sup> anniversary in 2009 by Celebrating 125 Years of Engineering the Future around the globe. Through its more than 375,000 members in 160 countries, IEEE is a leading authority on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. Dedicated to the advancement of technology, IEEE publishes 30 percent of the world’s literature in the electrical and electronics engineering and computer science fields, and has developed nearly 900 active industry standards. The organization annually sponsors more than 900 conferences worldwide. Additional information about IEEE can be found at <http://www.ieee.org>.