

## ***Envisioning the Engineering Adventures that Lie Ahead***

This talk reflects back on the emergence and impact of modern microelectronics and computing - to help us frame and envision the adventures that lie ahead in micro/nano engineering. References:

[1] National Research Council Committee on Innovations in Computing and Communications: Lessons from History, Funding a Revolution: Government Support for Computing Research, National Academy Press, Washington, D.C., 1999.

[2] Lynn Conway, "Reminiscences of the VLSI Revolution: How a series of failures triggered a paradigm shift in digital design", IEEE Solid State Circuits Magazine, Vol. 4, No. 4, Fall 2012, pp. 8-31.

### **Lynn Conway**

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Lynn Conway is Professor of EECS, Emerita at the University of Michigan. Lynn joined IBM Research in 1964 after earning her B.S. and M.S.E.E. at Columbia University. While at IBM she made foundational contributions to computer architecture, including the invention of multiple-out-of-order dynamic instruction scheduling. Lynn joined Xerox Palo Alto Research Center in 1973, where she invented concise scalable MOS design rules and, along with Carver Mead, innovated novel new methods for VLSI chip design. Building on this work, Lynn became principal author of the famous Mead-Conway text, Introduction to VLSI Systems, and she also pioneered and introduced at M.I.T. the new form of intensive university VLSI design course that taught these methods - thereby launching a world-wide revolution in chip design in the late 1970's. Lynn also invented, prototyped and demonstrated the internet-based rapid-chip-prototyping infrastructure institutionalized by USC-ISI as the MOSIS service. Lynn's innovative infrastructure enabled the rapid development of many thousands of chip designs, leading to the fabless/foundry microelectronics business model and to numerous Silicon Valley startups in the '80's and beyond. Lynn later served as Assistant Director for Strategic Computing at DARPA, and in 1985 joined the University of Michigan as Professor of EECS and Associate Dean of Engineering. An IEEE Life Fellow, Lynn has won a number of awards for her work, including election to the National Academy of Engineering.