



THE FRANKLIN INSTITUTE

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NEWS RELEASE

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**BENJAMIN FRANKLIN, BOWER AWARD LAUREATES ANNOUNCED:
INTERNET PIONEER PAUL BARAN WINS \$250,000**

**World's Top Scientists in Cancer, Artificial Intelligence, Computers,
Wireless Communications, Astronomy, & Chemistry Honored**

April 26th ceremony to be hosted by ABC News Anchor Cokie Roberts

Philadelphia, January 23, 2000 – The Franklin Institute Awards, one of America's oldest science award programs, announced today the names of the scientists whose breakthrough work in the fields of cancer, artificial intelligence, wireless communications, astronomy, computers, engineering and chemistry have earned them the prestigious 2001 Benjamin Franklin Medals and Bower Awards.

The 2001 laureates are: **Judah Folkman, Alan Guth, Marvin Minsky, K. Barry Sharpless, Rob Van der Voo, Bernard Widrow, Irwin Mark Jacobs and Paul Baran.** Baran, widely recognized for creating the technology for the "heart" of the Internet, will receive the coveted Bower Award for Achievement in Science and the accompanying \$250,000 cash prize.

In the spirit of discovery embodied by **Benjamin Franklin**, The Franklin Institute has recognized breakthroughs in science and technology since 1824 through its international awards program. The Institute will honor these scientists with a gala awards celebration where each laureate receives a gold medal and one laureate wins the \$250,000 cash prize. This year's ceremony, to be held on April 26th, will be hosted by ABC News Anchor **Cokie Roberts.**

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America's Oldest Science Award Announces /2

The Institute's award laureates are among the most recognized and influential scientists of the past two centuries. This year's laureates are now included in an exclusive list of honorees who are a virtual "who's who" of 19th and 20th century scientists including **Albert Einstein, Thomas Elva Edison, Marie Curie, Edwin Hubbell, Francis Crick, Zhores Alferov, James Watson and Steven Hawking.**

The Benjamin Franklin Medal 2001 laureates are recognized for:

- **The Benjamin Franklin Medal in Life Science** is awarded to **Judah Folkman**. He is being honored for his founding of the field of angiogenesis research and the demonstration that angiogenesis is a necessary factor in the conversion of abnormal cells to malignant tumors (cancer).
- **A Benjamin Franklin Medal in Computer and Cognitive Science** is awarded to **Marvin L. Minsky**. Minsky's work on the development of a conceptual model of the mind has guided additional research on artificial intelligence and deepened our understanding of the nature of human intelligence plus broadened our awareness of what a machine can do.
- **A Benjamin Franklin Medal in Earth Sciences** is awarded to **Rob Van der Voo**. Van der Voo has made outstanding contributions to the field of paleomagnetism (magnetization in ancient rocks). He has reconstructed ancient continental positions that have lead to a better understanding of the plate tectonic processes that have been active for the past billion years.
- **The Benjamin Franklin Medal in Physics** is awarded to **Alan Guth**. Guth proposed a revolutionary concept, now at the heart of current work in the understanding of the early universe, in which he said that the universe undergoes a rapid expansion in the first stages of the Big Bang. His concept has provided an explanation of several long-standing problems in cosmology, most notably the universe's apparent flatness and the observation that the cosmic background radiation is the same in all directions.

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America's Oldest Science Award Announces /3

- **The Benjamin Franklin Medal in Engineering** is awarded to **Bernard Widrow**. Widrow pioneered work in Adaptive Signal Processing as exemplified by the LMS algorithm, adaptive filters, adaptive control, adaptive antennas, noise cancellers, artificial neural networks and directional hearing aids.
- **The Benjamin Franklin Medal in Chemistry** is awarded to **K. Barry Sharpless**. Sharpless provided innovative contributions to the development of broadly useful and commercially viable catalytic oxidation chemistry for the selective production of bioactive molecules with the proper right or left "handedness" which allows for the manufacture of safer and more effective drugs and agricultural chemicals.

The Bower Award 2001 laureates are recognized for their work with the following:

- **The Bower Award For Business Leadership** is awarded to **Irwin Mark Jacobs**. Jacobs developed code division multiple access (CDMA) technology, a highly effective commercial system for compressing and transporting messages. This technology has become a standard in cellular telephone service. Jacobs' foresight and vision combined with his business expertise has created a new, world technology standard.
- **The Bower Award and Prize for Achievement in Science and the \$250,000 cash prize** is awarded to **Paul Baran** for his early development of packet switching, the foundation of modern communications networks, in particular, the Internet. Baran's concept created a system of connected nodes, places where a message could be received and then retransmitted. His revolutionary ideas were used to create the ARPANET in 1970, created chiefly for the Defense Department and for university research. ARPANET became the Internet in 1983.

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America's Oldest Science Award Announces /4

Founded in honor of America's first scientist, **Benjamin Franklin**, The Franklin Institute is one of America's premier centers of science education and development. More information on the awards program or the week of activities can be found on the Institute's web site, www.fi.edu or by calling (215) 448-1329.

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