



The Marconi Society *Marconigram*

A PUBLICATION PRODUCED BY THE MARCONI SOCIETY AT COLUMBIA UNIVERSITY

2006 MARCONI PRIZE TO BE AWARDED ON WEST COAST TO JOHN M. CIOFFI

Leading Stanford Researcher and DSL Pioneer Receives Top Honor

Stanford University Electrical Engineering Professor John M. Cioffi, a prolific inventor whose pioneering research helped create DSL (digital subscriber line) circuits which brings broadband Internet access to hundreds of millions of people, has been named the 2006 Marconi Fellow. The prestigious award recognizes scientific contributions in the field of communications science and the Internet.

**“LASTING CONTRIBUTIONS
TO HUMAN PROGRESS”
CITED BY MARCONI SOCIETY**

Cioffi will receive this honor – and the \$100,000 Marconi Prize that accompanies it – at the annual Marconi Society Award Gala on October 12, 2006 at the Menlo Circus Club in Atherton, California. It is the first time in the

Society’s 32-year history that the event has been held on the West Coast. The all-day Symposium will take place at the Computer History Museum.

“The annual Marconi Prize recognizes those living scientists who, like Guglielmo Marconi, the inventor of radio, share the determination that advances in communications and information technology be directed to the social, economic and cultural improvement of all humanity,” said John Jay Iselin, president of the Marconi Society. “John Cioffi’s remarkable career personifies this spirit.”

The Marconi Prize has been awarded yearly since 1975 and some of the world’s most influential communications technology pioneers have been designated Fellows, including nine West Coast winners. In addition to



Cioffi, they include Larry Page and Sergey Brin (Google co-founders), Nobel Prize-winning physicist Arthur L. Schawlow, Internet pioneer Paul Baran, wireless communications visionary Andrew J. Viterbi, and public key cryptography developers Martin Hellman and Whitfield Diffie. In 2005, Intel founder Gordon Moore

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JOHN M. CIOFFI – 2006 MARCONI FELLOW

received the Marconi Society's Lifetime Achievement Award, an award given out only three times in the Society's history.

Born and educated in Illinois, Cioffi earned a BSEE at Champaign in 1978 and joined Bell Laboratories in New Jersey as a modem designer. He later attended Stanford University, eventually earning a Ph.D. He was just 35 years old when his research resulted in a DSL modem that far surpassed the industry's standard. This led to the creation of his company, Amati Communications Corporation, in 1991. It was later purchased by Texas Instruments.

Cioffi's continued research has led to dozens of income-producing ventures and more than 70 patents – 30 of them licensed through Stanford alone and more than 50 issued or pending that belong to various other companies for whom he worked. Currently he and his Stanford team are exploring Dynamic Spectrum Management (DSM), a recent improvement on DSL. This led to a new venture, ASSIA, where Cioffi currently serves as Chairman.

Robert W. Lucky, Marconi Foundation chairman and 1987 Fellow, notes, "Like the Society's namesake, Guglielmo Marconi, Cioffi's work has helped immeasurably to spread knowledge and intellectual

resources across the planet. The successful deployment of DSL to much of the world made it possible for millions more people to access all that the Internet has to offer."

The two Symposium Chairman, Martin Hellman and Vinton Cerf also praise Cioffi. Hellman, Stanford University professor emeritus and 2000 Marconi Fellow, says, "John is among the most innovative and successful researchers I've known. His determination to push the technology in the face of considerable skepticism can largely be credited for the development of DSL, the way in which approximately two-thirds of broadband access is delivered worldwide. John is a true visionary."

Cerf, the 1998 Marconi Fellow, adds "It's hard to overestimate the impact John has had on telecommunications and the Internet." Cerf who is commonly referred to as one of the "founding fathers of the Internet" is now Google's Chief Internet Evangelist. "The high speed DSL modem Cioffi helped to design is now used all over the world-and is the principal way by which broadband access to the Internet is obtained, outside the US. There is no doubt he will continue to have a major impact on communications theory and application in the future."

UPCOMING SYMPOSIUM CO-HOSTED WITH THE COMPUTER HISTORY MUSEUM

Unleashing the Potential of Communications

8:30 a.m.

Registration, Coffee

9:00 a.m.

Welcome and Introductions

9:15 a.m.

Panel 1

**Lessons from the Past:
Roads to the Future**

Moderator: Jacob Ziv, Professor of Electrical Engineering, Technion, Israel Institute of Technology

Presenters: Claude Berrou, Professor, Electronics Department, École Nationale Supérieure des Télécommunications de Bretagne; **James L. Massey**, Professor Emeritus, Digital Systems Engineering, ETH, Zurich; **Henry Samueli**, Co-Founder, Chairman and Chief Technical Officer, Broadcom; **Andrew J. Viterbi**, President, The Viterbi Group, and Co-Founder, Qualcomm

10:30 to 10:45 a.m.

Coffee Break

10:45 a.m.

Panel 2

Today's Horizon: Impact and Implications of Broadband

Moderator: Vinton G. Cerf, Vice President and Chief Internet Evangelist, Google

Presenters: John Cioffi, Hitachi American Professor of Electrical Engineering, Stanford University; **David Forney**, Massachusetts Institute of Technology and retired Vice President, and Director of Technology, Motorola; **John F. Shoch**, Partner, Alloy Ventures (former President, Xerox Office Systems); **Gottfried Ungerboeck**, Technical Director and Broadcom Fellow, Broadcom

12:00 p.m.

Lunch

1:30 p.m.

Panel 3

Removing the Speed Bumps

Moderator: James L. Flanagan, Board of Governors and Professor Emeritus, Electrical Engineering, Rutgers University

Presenters: Whitfield Diffie, Chief Security Officer, Sun Microsystems; **Federico Faggin**, President and Chief Executive Officer, Foveon; **Martin E. Hellman**, Professor Emeritus, Electrical Engineering, Stanford University; **James K. Omura**, Technology Strategist, Gordon and Betty Moore Foundation (former Professor, Electrical Engineering, University of California at Los Angeles, and Co-Founder, Cylink)

2:45 to 3:00 p.m.

Coffee Break

3:00 p.m.

Panel 4

The Future

Moderator: Robert W. Lucky, Board Chairman, Marconi Society, former Executive Director, Communications Sciences Research, Bell Labs

Presenters: Robert E. Kahn, Chairman, Chief Executive Officer and President, Corporation for National Research Initiatives; **Leonard Kleinrock**, Professor of Computer Science, University of California at Los Angeles; **Robert M. Metcalfe**, General Partner, Polaris Venture Partners, and Founder, 3Com; **Greg Papadopoulos**, Chief Technology Officer and Executive Vice President of Research and Development, Sun Microsystems

4:15 p.m.

Symposium Ends

MAKE YOUR HOTEL RESERVATIONS EARLY

Rooms will fill up fast due to the Stanford University Alumni Weekend taking place the same time as our events.

List of Recommended Hotels

The official Marconi Hotel for the Symposium is the Sheraton in Palo Alto, 625 El Camino Real (650) 328-2800.

Other suggestions: Westin Hotel (650) 321-4422; Stanford Park Hotel, Palo Alto (650) 322-1234; Ritz Carlton, Half Moon Bay, (650) 712-7000





Crisis for American Entrepreneurship?

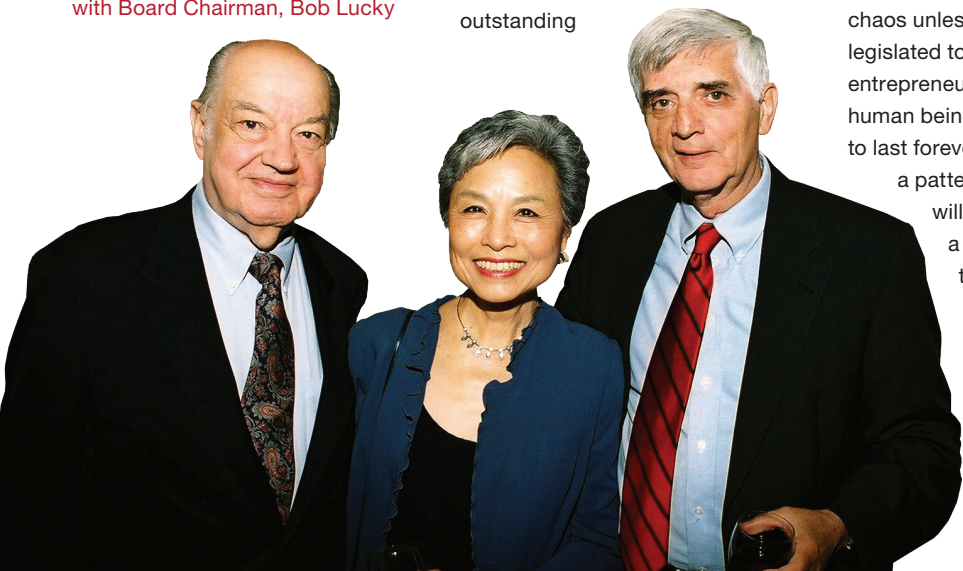
The Marconi Society hosted a Forum in New York on May 10 at the River Club, featuring Reed E. Hundt, Principal of Charles Ross Partners and past chairman of the Federal Communications Commission (FCC). He led a discussion before the distinguished group about China's rising competitive power which may pose a potential threat or open a window of opportunity for the "American Dream."

Robert W. Lucky, Chairman of the Marconi Society, and formerly Executive Director of AT&T Bell Labs Communications Science Research Division, was the Commentator. Jonathan R. Cole, the John Mitchell Mason Professor, Columbia University, acted as Moderator.

Those present (industry leaders, academics, journalists, and Marconi Society supporters) entered into a lively discussion on whether or not the Chinese economy today is a threat or an opportunity.

China's rapidly rising star epitomizes the trend in expansive globalization. Hundt's concern about the impending economic

Marconi Board members, Paul Baran and Rosalind Whitehead, with Board Chairman, Bob Lucky



threat from China prompted him to write a book, "In China's Shadow: the Crisis of American Entrepreneurship." It will be available at bookstores in the fall, and explores the rapid rise of Chinese entrepreneurship and America's response. To sustain the American dream, he asks Americans to consider the "difficulties of action, the possibilities of action, and the reasons for hope."

Hundt points out that not only do countries such as China and India possess cheap labor, but most importantly, they are also rich with talent. Thirty years ago U.S. industries published 85% of the international research papers on communications technology, a stark contrast to the 3% in 2005. Today, that research is conducted by universities, half of which are in Asia; furthermore, 70% of the U.S. papers are submitted by authors with Asian surnames.

During the spirited discussion, guests lamented the diminishing numbers of American-born undergraduates pursuing studies in science and technology. While the U.S. is providing its students with a diploma and burdening them with hundreds of thousands of dollars in outstanding



Reed Hundt speaks at New York Forum

college debts, Asian-born students – fully subsidized by their governments – are returning home, bound for careers in the high-tech sector.

Hundt contends that we are not only educating engineers who return to their countries of origin, but also training the next generation of foreign-born leaders. "What you see in China today," said Hundt, "is a national commitment to overtake America in less than a decade. ... in business training, to provide ranks of managers to create a more efficient economy."

Hundt predicted that the U.S. economy may be doomed to chaos unless open markets are legislated to pave the way for entrepreneurs. "Neither God nor human beings meant this [system] to last forever. We must look for a pattern of leadership that will hopefully give rise to a new form of culture that will commit us to a collective action in support of entrepreneurship."

THE MARCONI SOCIETY

The Marconi Society was established in 1974 through an endowment set up by Gioia Marconi Braga, daughter of Guglielmo Marconi, the Nobel laureate who invented the radio (wireless telegraphy). The Society is best known for its \$100,000 Marconi Prize, awarded annually to an outstanding individual whose scope of work and influence emulate the principle of "creativity in service to humanity" that inspired Marconi. Through symposia, conferences, forums and publications, the Marconi Society promotes awareness of major innovations in communication theory, technology and applications with particular attention to understanding how they change and benefit society.

Additional information about the Marconi Society and the Marconi Fellows can be found at www.marconisociety.com.

ANDREW VITERBI

President, The Viterbi Group



Andrew Viterbi, the 1990 Marconi Fellow, is a pioneer in the field of Wireless communications. He will be one of the Presenters at the October 12 Symposium, and in a recent interview, he discussed the Marconi Society and the impact Guglielmo Marconi has had on the world.

"What hath electromagnetic propagation wrought?" Viterbi said. "Marconi brought that nascent science to life. He was the first high tech entrepreneur.

"The telecommunications industry owes him respect and remembrance. His achievements had a tremendous impact on humanity and it just keeps growing. Today, because of his achievements, people can communicate anytime and anywhere, with almost anyone. *Imagine that!*"

Viterbi is the Chairman of the Marconi Jury Selection Committee which picks a new Marconi Fellow each year. Before founding The Viterbi Group, he was co-founder of Linkabit, and a co-founder of Qualcomm.

UPCOMING SYMPOSIUM

Advance Registration

A Commemorative Journal of supporters celebrating the 2006 Marconi Prize will be available after the Symposium and Gala Awards Dinner.

For more information on these events email MarconiExecDir@aol.com. To register online, go to www.acteva.com/go/marconisociety.

Cut out and return by October 6

(Please request a Sponsorship Package if interested)

_____ Single Gala Dinner Tickets at \$250 each

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