California Historical Society

Legends of California

Honoring the Traitorous Eight

Tuesday
May 10, 2011
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Celebrating California’s Legendary Spirit of Innovation
The Traitorous Eight – Founders of Silicon Valley

Tuesday, May 10, 2011 • 6:00 PM
The St. Regis San Francisco
125 Third Street, San Francisco, California

6:00
Reception in Sculpture Room
Entertainment by Alex Conde Carrasco, jazz flamenco piano

6:45
Presentation in Gallery Ballroom
Paul Saffo, Master of Ceremonies
(Managing Director, Discern Analytics)
Something Ventured, film clip
Legends of California Award Presentation
Jan Berckefeldt, Board President
David Crosson, Executive Director

7:45
Closing dessert reception in Sculpture Room

From left to right: Gordon Moore, C. Sheldon Roberts, Eugene Kleiner, Robert Noyce, Victor Grinich, Julius Blank, Jean Hoerni, and Jay Last
From the moment that the name was first introduced in a Spanish romance novel four centuries ago, California has been a legendary place and a place of legends. Beginning with Queen Calafia and continuing through Father Serra, the Gold Rush, the 1906 earthquake and fire, Hollywood, and Silicon Valley, no place in America, and few places in the world, have generated more legends than California. Even the California Dream, whatever it is, is legendary.

The California Historical Society annually recognizes individuals, businesses, and organizations that have made legendary contributions to the creation of California and America with the Legends of California Award.

Nothing is more legendary than California's remarkable commitment to risk taking and to innovation, particularly as exemplified in the entrepreneurial spirit of Silicon Valley. The California Historical Society is proud to recognize California's legendary spirit of innovation by honoring the living founders of Silicon Valley, known in California legend as the Traitorous Eight.

In 1957, eight brilliant young men left Shockley Semiconductor Laboratory in Mountain View, California, to form Fairchild Semiconductor. Collectively, Julius Blank, Victor Grinich, Jean Hoerni, Eugene Kleiner, Jay Last, Gordon Moore, Robert Noyce, and C. Sheldon Roberts became known as the Traitorous Eight. Together and individually they embodied the expertise, ethic, and vision that gave birth to hundreds of companies, dozens of industries, and a new entrepreneurial model that revolutionized the way that businesses do business around the world.

We honor four of these living legends tonight: Julius Blank, Jay Last, Gordon Moore, and C. Sheldon Roberts.

This is the first time that a broadly-mandated history organization has honored the people who shaped the legendary risk-taking spirit of California's Gold Rush into the modern model of technological and entrepreneurial innovation that has transformed the world. By presenting the Legends of California Award to the living members of the Traitorous Eight, the California Historical Society recognizes their legitimate place in the history of the state and the nation. They truly are Legends of California.
Julius Blank was born in New York City in 1925. After graduating from high school in 1940, he worked as a machine tool operator during the day while attending the City College of New York Engineering School at night.

Blank was inducted onto the US Army in 1943 and served as an rifleman with the 8th Infantry Division and was wounded in action in December 1944. He returned home in 1946 and resumed studies in mechanical engineering at CCNY with support of the GI Bill and his wife, Ethel, who he married in 1948.

He graduated with a degree in Mechanical Engineering in 1950. His first job was with Babcock and Wilcox in Barberton, Ohio, manufacturing large steam boilers.

After working for Goodyear Aircraft and Western Electric, where he had assignments in electroplating and metal finishing, Blank joined Shockley Semiconductor Laboratory in April 1956 as a Senior Staff Engineer. He left Shockley in 1957 to found Fairchild Semiconductor.

At Fairchild, Blank designed the manufacturing facility (called the “fab”) and ran plant engineering in collaboration with Eugene Kleiner. Blank went on to found Xicor, a manufacturer of non-volatile memories, in 1978.
Jay Last was born in Butler, Pennsylvania, in 1929 and received a B.S. in Optics from the University of Rochester in 1951 and a Ph.D. in Physics from MIT in 1956. He joined Shockley Semiconductor Laboratories for a year and in 1957 became one of the eight founders of Fairchild Semiconductor Corporation. At Fairchild he designed the first commercial silicon planar transistors and then directed the research and development group that produced the first integrated circuit chips.

In 1961, Last left Fairchild to set up the semiconductor division of Teledyne, Inc. Many of the circuits that his division produced were used in the control and information gathering systems for the first space voyage to the moon. He later became Vice President for Technology, overseeing the technical interaction of Teledyne’s 150 separate divisions.

After leaving Teledyne in the late 1970s, Last’s activities have demonstrated a boundless curiosity. He has established an art book publishing company, founded the Archaeological Conservancy, and compiled a huge personal collection of orange crate labels. Last has donated his private collections of nineteenth century American lithographic prints and related graphic materials to the Huntington Library in San Marino and has given his collection of art from the Lega tribe in the eastern Congo to UCLA’s Fowler Museum.
Gordon E. Moore is the retired chairman and CEO of Intel Corporation. After leaving Shockley Semiconductor Laboratory in 1957 to co-found Fairchild Semiconductor, Moore joined Robert Noyce in co-founding Intel in 1968. (Intel derives its name from “integrated electronics.”) Moore initially served as executive vice president of Intel, became president and CEO in 1975, and was elected chairman and CEO in 1979. He remained CEO until 1987 and was named chairman emeritus in 1997.

Moore is widely known for “Moore’s Law,” in which in 1965 he predicted that the number of components the industry would be able to place on a computer chip would double every year. In 1975, he updated his prediction to once every two years. While originally intended as a rule of thumb, “Moore’s Law” has become the guiding principle for the semiconductor industry to deliver ever-more-powerful chips at proportionately decreased costs.

A native of San Francisco, Moore received a B.S. in chemistry from the University of California and Ph.D. in chemistry and physics from the California Institute of Technology. Moore and his wife established the Gordon and Betty Moore Foundation in 2000 in order “to achieve significant, lasting, and measurable results in environmental conservation, science, and the San Francisco Bay Area.”

Moore serves on the board of trustees of the California Institute of Technology. He is a director of Gilead Sciences, Inc., a member of the National Academy of Engineering, and a Fellow of the Royal Society of Engineers. He received the National Medal of Technology in 1990 and the Medal of Freedom, the nation’s highest civilian honor, from George W. Bush in 2002.
C. Sheldon Roberts was born in 1926 in Rupert, Vermont. He received his Bachelor’s degree in metallurgical engineering from Rensselaer Polytechnic Institute in 1948, and his Master’s degree and Ph.D. in metallurgy from the Massachusetts Institute of Technology.

Roberts worked for the Naval Research Lab and Dow Chemical Company before joining Shockley Semiconductor Laboratory in Mountain View, California. Roberts and seven colleagues left Shockley to found Fairchild Semiconductor, the pioneering firm in the field of integrated circuits. With his Fairchild colleagues, Jean Hoerni and Jay Last, Roberts later co-founded Amelco Semiconductor, now Teledyne.

Roberts served as a Rensselaer Trustee for 15 years and he was inducted into Rensselaer’s Alumni Hall of Fame in 1999. He also served on the board of the San Francisco Conservatory of Music and as Trustee for ASM International. Roberts holds several patents in the semiconductor field; and, he has authored articles for professional journals and a book on magnesium and its alloys.
Paul S. Otellini is president and chief executive officer of Intel Corporation. He became the company's fifth CEO on May 18, 2005, succeeding Craig R. Barrett.

Otellini received a Bachelor’s degree in economics from the University of San Francisco in 1972, and an MBA from the University of California, Berkeley, in 1974. Since joining Intel in 1974, Otellini has managed several Intel businesses, including the company’s PC and server microprocessor division and the global sales and marketing organization.

In 2002, Otellini was elected to Intel’s board of directors and promoted to president and chief operating officer. He was named CEO in May 2005, a role in which he’s focused on driving the company’s growth and mission to deliver innovative, energy-efficient products.

Under Otellini’s guidance, Intel aims to usher in a new era when portable wireless computing is available anytime, anywhere. The company also is focused on bringing the next billion people online with affordable computers tailored to their needs.

Otellini serves on the board of directors of Google, Inc. and on the President’s Council on Jobs and Competitiveness.
Paul Saffo is a forecaster with over two decades of experience helping corporate and governmental clients understand and respond to the dynamics of large-scale, long-term change.

He is Managing Director of Foresight at Discern Analytics, and he teaches at Stanford University, where he is a Consulting Associate Professor in the Engineering School.


A card-carrying futurist, Paul also is proud to be a member of the California Historical Society.
Other Members of the Traitorous Eight

Victor Grinich (1924 – 2000), originally named Victor Grgurinović, was born in Aberdeen, Washington, to Croatian immigrants. He served in the United States Navy during World War II. To make his last name easier to pronounce during military roll calls, he officially changed it to "Grinich".

Grinich received a Bachelor's degree from the University of Washington in 1950, and a Ph.D. in 1953 from Stanford University. Like his seven colleagues, Grinich left Shockley to found Fairchild in 1957. According to fellow Fairchild alumn, Julius Blank, Grinich “probably did more to push the analog circuitry than anyone else I know.”

In 1968, Grinich left Fairchild Semiconductor to found a string of small companies, including Escort Memory Systems, and start teaching at UC Berkeley and Stanford University. In 1975, he published the classic textbook, Introduction to Integrated Circuits.
Trained as a theoretical physicist, Jean Hoerni (1924-1997) held undergraduate and Ph.D. degrees from the University of Geneva and another Ph.D. from Cambridge University.

Hoerni invented the planar manufacturing process in which a silicon wafer is repeatedly coated with silicon oxide and precisely engraved so that the components of a transistor can be deposited in interconnected layers on the surface. This method led to the development of the modern integrated circuit.

Like the other members of the Traitorous Eight, Hoerni joined Shockley Semiconductor in 1956 and left in 1957 to form Fairchild Semiconductor. Along with other Shockley alumni, Jay Last and Sheldon Roberts, Hoerni founded Amelco (known now as Teledyne) in 1961. In 1964, he formed Union Carbide Electronics, and in 1967 Intersil.

Hoerni was awarded the Edward Longstreth Medal in 1969 and the McDowell Award in 1972.
Eugene Kleiner (1923–2003) helped found two industries—
integrated circuits and venture capital. As one of the
original founders of Kleiner Perkins, the venture capital
firm, which later became Kleiner Perkins Caufield Byers,
Kleiner helped provide initial capital to companies that
traditional investors found too unproven to support,
many of them technology and biotech firms.

In 1938, Kleiner fled with his family from Vienna, Austria,
arriving in New York two years later and serving in the
U.S. Army during World War II. He earned a Bachelor’s
degree in mechanical engineering from the Polytechnic
University of New York and a Master’s degree in industrial
engineering from New York University.

After briefly teaching engineering, he joined Western
Electric. He was among the first to accept an offer to join
William Shockley in 1956. When he and seven colleagues
decided to establish their own semiconductor company
in 1957, it was Kleiner who obtained the initial investment
in the new company from Sherman Fairchild.

Kleiner later invested his own money in Intel, a
semiconductor firm founded in 1968 by fellow Fairchild
founders Robert Noyce and Gordon Moore. In 1972
he joined Hewlett-Packard veteran Tom Perkins to
found Kleiner Perkins. The rest, as we are wont to say,
is history.
Robert Noyce (1927–1990) developed the technology that would eventually become the microchip. As one of the original computer entrepreneurs, he founded two companies that would largely create the modern semiconductor industry and reshape the way that the world communicates and work is done—Fairchild Semiconductor and Intel.

A Grinnell College professor introduced Noyce to the first generation transistors. After receiving his Ph.D. from MIT and a brief stint making transistors for Philco, Noyce joined Shockley in California in 1956.

A year later, he joined seven colleagues in founding Fairchild Semiconductor, and in 1968 he joined Gordon Moore in founding Intel. At Fairchild, he invented the integrated chip—a chip of silicon with multiple transistors etched into it at once—which was a necessity for the next great breakthrough at Intel—the invention of the integrated microprocessor.

At both companies, Noyce introduced the casual, flexible, and collegial work environment that soon came to define the industry and the region. In recognition of his influence in the economy, politics, and corporate culture of the region, Noyce became known as the Mayor of Silicon Valley.
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About the California Historical Society

Founded in 1871, the California Historical Society (CHS) inspires and empowers Californians to make the past a meaningful part of their contemporary lives. CHS is the designated official historical society of the State of California, with corporate offices in San Francisco.

CHS fulfills its mission throughout the state by:
• Fostering scholarship
• Promoting and enhancing history education in California
• Stimulating public exploration on the meaning of the past in contemporary life

Scholarship
CHS maintains and shares one of the four major research collections on California history, including some of the most cherished and valuable documents and images of California’s past. California History remains one of the most respected state history journals in the country, with an enviable record of introducing groundbreaking scholarship and challenging interpretations.

History Education
The online California History Timeline has become an invaluable web-based tool for classroom history teachers. CHS is one of the leading organizations in a broad-based network addressing the needs of classroom history and social science educators.

Public Programs
CHS has pioneered the presentation and discussion of critical issues in history that impact our daily lives. In recent years, CHS has expanded public service through partnerships with other organizations throughout the state, such as the Bancroft Library, Chinese Historical Society of America, Autry National Center, and University of Southern California.

Membership
Please consider joining the California Historical Society. Members receive:
• California History, a quarterly journal published by CHS since 1922
• California Chronicle, a quarterly newsletter highlighting CHS activities that keeps members up to date on programs, events, and exhibits.
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To become a member of the California Historical Society, contact:

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