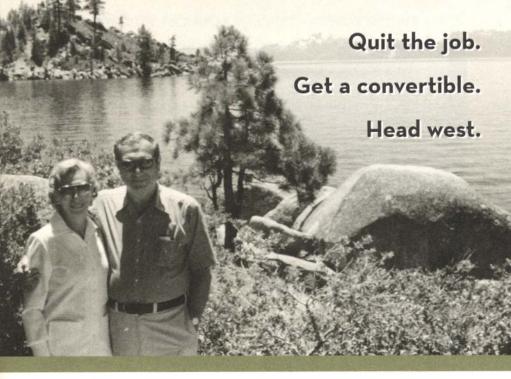


EUGENE KLEINER

ENGINEER, VENTURE CAPITALIST, FOUNDING FATHER OF SILICON VALLEY

SOURCE NOTE

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he year was 1956 and Eugene Kleiner, a Viennese-born mechanical engineer, was giving up a secure job and a nice Manhattan apartment and taking his wife, Rose, and 4-year-old son, Robert, with him into the sunset.

By his looks, Eugene Kleiner, tall and lean and hair cut neat—and almost always wearing a tie—was the antithesis of the beatnik generation of the time. "A nerdy young engineer in flannel suit and tie," the *Economist* magazine would later describe him. Kleiner's ride west, thanks to where he ended up, would change his life—and the life of the world as well.

The journey, which actually began in Vienna some 20 years earlier, as he fled the Nazis, would take Kleiner to the center of what some would call the Second Industrial Revolution. The Polytechnic graduate (Class of '48) would help lead a

small band of young scientists who helped create the transistor (or semiconductor), the integrated-circuit industry, and Silicon Valley, and then lead a small army of investors who would transform that valley into a Mecca of high-tech innovation.

A man who never lost his Old World charm and measured, deep Austrian accent, Eugene Kleiner was a passionate proponent of New World change. And change is surely what he, Rose and Robert got, in 1956, when they surveyed the flat and, compared with Brooklyn, empty California landscape that would be their new home. It was perhaps reassuring that it was known as the Valley of Heart's Delight, but, at the time, the wide swath of space south of San Francisco was mostly plum and walnut orchards. Santa Clara County, in 1950, was, in fact, America's prune capital.

Eugene Kleiner did not intend to

become a farmer or a producer of prunes. He was an engineer, and he came to California to build the future.

Build he did, helping to create one of the first, and most successful, tech companies—Fairchild Semiconductor. He also helped create, as a venture capitalist and investor, dozens of other companies, including Tandem, Genentech and Intel, which would rank among the world's most successful enterprises.

He would never write a book about his journey, but when an interviewer asked him once what he would title his autobiography if he were to write one, Kleiner replied, "Change Is All Right."

Escape From the Nazis

In fact, change saved Eugene Kleiner's life when he was just 15 and he and his family fled the Nazi juggernaut. He was born in Vienna on May 12, 1923, the last of Leon and Anna Kleiner's three children.

Leon Kleiner was a prosperous and successful shoe manufacturer, whose family lived well in a spacious apartment on the fourth floor of a residential building in Vienna's affluent central city first district. Eugene attended a mostly-Jewish school that was a short walk across the Danube.

The extended Kleiner family—both of Eugene's parents had brothers and sisters, who had children—was happy and close-knit. Eugene was especially close to his mother, who ran a small but successful retail shoe business while raising the children; and he adored his sister, Rose, who was just three years older than he. He had immense respect for his father, whom he idolized and from whom

Left: Eugene and his father, Leon Kleiner.

Right: Eugene's parents, Anna and Leon Kleiner, circa 1944.





he would learn a great deal about life and business. He always treasured a picture, taken of his father and him when Eugene was just ten and his father in his late 40s. "It was really remarkable how much alike we looked," Eugene recalled. "My father was about as tall as I am now [6'] and had a similar build. The face was slightly different. But in that picture, it is remarkable how much we looked alike."

Leon Kleiner also had a trait that would be one of his son's hallmarks. "My father had many setbacks in his life," Eugene would recall, "but he was a very positive person. Even under the worst conditions, he was very optimistic." Young Eugene would get a chance to see this optimism severely challenged as he watched his father lose everything, including almost his life, and survive.

Eugene was only 14 years old when the Nazis marched into Vienna in March 1938. Within days of the "quiet invasion," Eugene's gym instructor was wearing a swastika button; several days later, the Jewish students were told to stop coming to class. On the streets, Eugene noticed bands of young Aryans, also wearing swastika buttons, accosting people they thought were Jews and beating them.

"My father told us to stay out of sight as much as possible," Kleiner recalled. Leon Kleiner, as a prominent businessman who was active in his synagogue, was well aware of the implications of the hateful Hitlerian message. While always expressing hope that the Nazis were a passing fad, he was also quietly sending money to one of his relatives in Switzerland to hold for him—"just in case."



Eugene's passport photo, 1938

His worst fears were quickly realized, as the Nazis took over Kleiner's shoe factories and then, early one November morning, knocked on his apartment door. "We were all at home when they came," Eugene recalled. "We had to stand in the fover and we were not allowed to move. These were members of the [local] Nazi party, not in uniform but with the armbands with swastikas. One of the fellows had worked for my father, and my father had done favors for him. My father was more shocked by the presence of this young man and his being part of the group than he was by the group itself."

They ordered Leon to open his safe and then took the money and jewels he kept there. Then they ordered him to come with them. "We didn't know what to do next," recalled Eugene. "We were left there. Our leader gone." Panicked,

Eugene was only 14 years old when the Nazis marched into Vienna in March 1938.

Anna moved the family to the building's attic, where they stayed for a couple of days. Not until they got word that their father was alive in a city jail and would be freed soon did they emerge from hiding.

"Later, he told us about that first day, after they arrested him," Eugene recounted. "He and other Jews were taken from the police station and put into different lines. A police inspector, who knew my father (because Leon made boots for the police department), came up to him and said, 'Mr. Kleiner, you're in the wrong line here; this one goes to the concentration camps.' And he put my father in a line for petty thieves. It saved his life."

When Leon Kleiner was finally released from jail, nearly a month later, the seriousness of the situation was clear. The family began planning its escape in earnest.

Many years later, Eugene, by then a wealthy and famous engineer and entrepreneur known for his calm and cautious demeanor, would break down in tears as he recalled for an interviewer these dangerous times—and, for many of his relatives who were not fortunate enough to encounter a friendly cop, fatal ones.

It took nearly three years, with risky passages from Austria to Belgium, then (after the Nazis took that country) to Spain, to Portugal and, finally, a boat to America. The young Eugene watched his father, ever-resourceful, negotiate passport offices and checkpoints, but he also saw him conscientiously provide for his family. (It wasn't until many years later that Eugene learned that his father had sent money to Switzerland in advance.) In Brussels, for instance, the family lived for almost a year in a tiny apartment, from one visa extension to the next. "My father, being optimistic, felt that the war wouldn't last long and we would be returning to Vienna," said Eugene. And the Jewish community there, also nurturing a determination to live a normal life, established a school for teenagers. "It was, basically, a trade school," recalled Eugene, "and I learned the art of tool and die making." Eugene would always consider learning a trade to be "one of the most important things of my life."

Meantime, his father had somehow become part-owner of a small shoe factory in Brussels. "I was amazed at how he did that," said Eugene. "He didn't even speak the language."

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The Brooklyn Years

Eugene in the Army, circa 1945

hey arrived in New York in May 1941, as Eugene was turning 18-more than three years after the Nazi's had taken over Vienna. They settled in Brooklyn, where an aunt of Leon's lived. As was the family's instinct, all immediately found work and soon moved into a large brownstone at 1631 Union Street near Eastern Parkway.

Leon quickly picked up jobs in the leather trade and would eventually own another shoe factory. His eldest son, Bernhard, already an accountant, got a job, as did his daughter, Rose. Eugene, thanks to the trade school in Brussels, found work as an apprentice toolmaker, making a dollar an hour. "It seemed like a lot of money at the time," he recalled. And making tools—parts for aircraft landing gears—was the right job as America entered the war. He was soon making two dollars an hour and training women to work the assembly line.

As a displaced person who was not American, Eugene could have easily had a deferrment from military service, but he was itching to do his share to defeat the Nazis, explaining: "I had a personal thing to settle with them." After being drafted, he was first sent to train with the ski mountain infantry,

From left to right: Eugene and sister, Rose, 1944 Rose and Eugene's wedding portrait, 1947 John Streubel, dean of students, Polytechnic Institute of Brooklyn, 1945.





since he had skied as a child. But when it was discovered that he also spoke German, he was dispatched to Georgia to interview and guard German prisoners of war. It was in the Army that Eugene Kleiner became an American citizen. He would later remark, in answer to a question about what in his life he would do over if he could, "Be born in the United States."

Getting An Education

Though his parents' practical advice ■ to learn a trade proved to be an enduring aide and inspiration for him, Eugene knew that America offered much-and offered much more if one had an education. So when he heard that the GI Bill would pay veterans to attend college, he jumped at the opportunity.

In 1945, he presented himself to the admissions office at what was then Polytechnic Institute of Brooklyn. There was only one problem. "I did not have a high school diploma," he later remarked. But the 22-year-old Army veteran earned an interview with John Streubel, dean of students, who had been with Polytechnic for several decades and who could spot talent. He arranged for Eugene to take a high school equivalency test and then accepted him into the engineering program before he had even passed the test—with the proviso that Kleiner earn all As and Bs in his first semester or he would be expelled. It was a kindness for which Eugene would always be grateful. "Well, he did earn those As and Bs," explains Richard Thorsen, the current vice president for development and university relations. "The rest, as they say, is history."

The GI Bill paid for tuition and books, but only about \$20 a month for living, so

(continued on page 10)

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Rose Kleiner: A Partner of Towering Strength and Generosity

ose Wassertheil was the oldest of three children born to Pincas and Klara Wassertheil in 1925 in Katowice. Poland. Her father was a prosperous textile merchant and, in September of 1939. could afford a family vacation to see the great World's Fair in Queens, New York, which had opened the previous April as a resplendent model for "Building the World of Tomorrow." The theme couldn't have been more appropriate for the 13-year-old Rose, as her future was all but thrust upon her in mid-Atlantic passage, as World War Il engulfed her family's homeland. Immigration officials, unsure of what to do with them, sent the Wasserthiels to Ellis Island. from which they were rescued by a greatuncle in Brooklyn.

In fact, the Fair was metaphor for what would be Rose's life, as the world of tomorrow, built on 1,200 acres of marshy wasteland, represented an optimistic celebration of economic prosperity and personal freedom through science and technological innovation. Rose, who loved people, music and the opera, had no idea how large a role she would play in that technological future.

Rose Wassertheil Kleiner, 1949



Adjusting quickly to the American ethos, she enrolled in a Brooklyn high school, defying European conventions—and her parents' wishes. Later she enrolled in Brooklyn College. There she earned a degree in sociology. It was while at the college that she organized an "Excursion Club" for recent immigrants and met Eugene Kleiner, her mechanical engineering Prince Charming, whom friends described as reserved as Rose was gregarious. It was a match that seemed made in heaven.

After marriage, while Eugene was finishing his bachelor's degree at Polytechnic and then his master's at New York University, Rose worked at the Quaker House in Manhattan—the beginning of a lifelong commitment to helping others.

A career as a social worker was curtailed by a series of events: the arrival of the couple's first child, Robert in 1952, and the relocation in 1956 of the small family 3,000 miles west to establish a new life in California. Their second child, Lisa was born in 1959. Yet, she was always active in community works, and arranging the social life for her workaholic and more taciturn husband.

"Gene was a retiring guy, almost bashful," recalled Gordon Moore, one of the Fairchild Eight and, later, co-founder of Intel. "He was not really outgoing. His wife, Rose, was just the opposite."

Moore's wife, Betty, added, "She loved parties. She loved theater. She played the piano. She sang in a madrigal group as well." Bob Noyce, another of the Fairchild Eight and co-founder of Intel, was part of the group. "If anyone was going to get everyone together it was Rose," Mrs. Moore added. "She was a real networker."

Rose organized the wives as well. "We called ourselves 'The Fairchild Wives."

recalled Mrs. Moore. "We would get together for luncheons fairly often and talk about family and what we anticipated down the road."

In 1974, on her 49th birthday, Rose's children gave her a new leather briefcase, to be used, they explained, when she went back to school. Three years later, she graduated from the University of California, Berkeley School of Social Welfare, with a master's degree in social work and a specialization in gerontology.

Rose took a job as the founding director of the Senior Day Health Program of Palo Alto and in 1982 founded Older Adults Care Management, an agency that provides home-care services and care management for the elderly. "It was quite successful—for this type of business," recalled her husband, who was then one of the country's leading experts on successful businesses. "She didn't make a lot of profit, but she didn't have to go out and raise money for it either." They used some of their own money the first couple of years, but after that it was self-supporting.

What her husband had done for the semiconductor and venture capital world, Rose did for the field of senior care, establishing procedures and practices that would help create a professional field of caring for the elderly.

"I believe that it is a holy enterprise to understand the needs of people and to help them," she told one interviewer, "yet at the same time leave them with their dignity and their pride."

"She was a classy lady," said Betty Moore. In retirement, like her husband, she continued to serve. She was on the board of the International Tremor Foundation, the Duke University Council on Aging and the Advisory Council of the Mt. Sinai Medical Center in New York. She and Eugene endowed the Eugene

and Rose Kleiner Chair in Aging at Berkeley's School of Social Welfare. The board room of the International Longevity Center in New York is named for her.

She even wrote a children's book, in 1996, titled "The Little Horse that Ran Away."

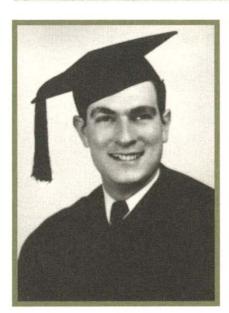
Shortly before her death, from cancer, in 2001, she donated her Older Adults Care Management organization, worth

Rose and Eugene at their wedding reception, 1947



more than \$4 million, to the Institute on Aging. The Western Regional Chapter of the National Association of Professional Geriatric Care Managers, a group she helped found, honors her each year by bestowing The Rose Kleiner Award for contributions to elder care management.

For those who believed that Eugene Kleiner's special gift was an optimistic spirit, they could readily see in his wife of 54 years, a kindred soul. "I have always tried not to complain," she once said, "but to see what I can do about something, to embrace life no matter what it brings."



Graduation from Polytechnic, 1948.

Eugene lived with his parents during college. He made it quick, finishing in just three years instead of the normal four. "To do that you have to work very hard," said Thorsen. "It was incredible."

Eugene paid careful attention to his father's business instincts and manners, one of which was the habit of hard work. At the time, the young Kleiner applied those habits to learning and teaching. After graduation from Poly in 1948, he worked nights at the school, as a toolmaking instructor. During the day, he pursued a master's degree at New York University.

He even made time for courtship and marriage.

Love and Marriage and Western Electric

Eugene had met Rose Wassertheil, two years his junior, not long before entering the Army, when he joined the "Excursion Club," a social club for young emigrés in Brooklyn. In fact, the pretty, dark-haired Polish-born Rose—had started the "Excursion Club," giving every indication that she, like Eugene, was going to make the most of America. In fact, like Eugene, she was a child of European privilege whose Jewish ancestry made her family a target of Hitler's thugs.

Unlike Eugene, whose coming to America was harrowing, Rose's immigrant adventure was almost serendipitous: war broke out in Europe in the fall of 1939 while she and her family were on a ship in the Atlantic, enroute to New York to see the World's Fair. The Wassertheil's boat docked in New York. "They didn't know what to do with us," Rose recalled. The vacationing family—suddenly stateless—ended up on Ellis Island. "We had to stay there until my great-uncle, who lived in New York, said that he would youch for us."

The Wassertheil's "escape" was thus a relatively simple boat ride across New York Harbor.

The experience, though, was in keeping with Rose's effervescent personality—as was her founding of the Excursion Club in keeping with what would be a lifelong devotion to helping others. (See

Rose told Eugene that she wanted to be a social worker, and he responded by saying she could help him—by becoming his wife.

sidebar, pages 8 and 9.) Eugene Kleiner, then a young mechanical engineering student from Polytechnic, was among the first to join the group. He and Rose, a student at Brooklyn College, became friends and dated. During her senior year, she sent him a ticket to an operetta that she was producing. After the performance, while walking home, Rose told Eugene that she wanted to be a social worker, and he responded by saying she could help him—by becoming his wife.

"I fell in love with him because of his deep voice," Rose would later say. "I assumed anyone with a voice like that could sing beautifully. But he can't even carry a tune!"

The couple married in January 1947. Even if Eugene couldn't carry a tune, the wedding march was a song that they hummed together through more than 50 years of marriage.

Their lives seemed wonderful, as Eugene settled into a job as an engineer at Western Electric, the country's leading telephone manufacturer. The Kleiners were riding the post-war economic boom in their new country. Western Electric, which traced its roots to the 1850s when it was making parts for Western Union, was part of the powerful Bell Telephone system. During World War II, Western Electric manufactured half of the nation's radar equipment and all of what was used by the American Army, Navy and

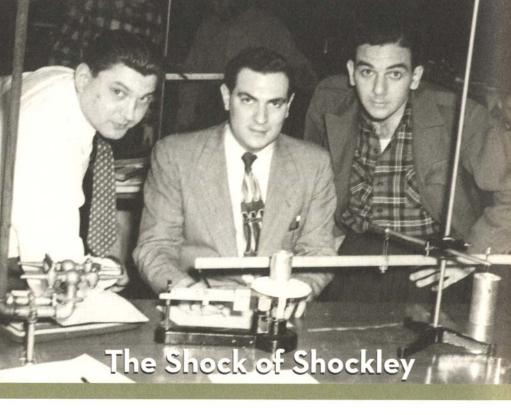
Marine forces in the war. Its scientists had written the book on quality-control manufacturing.

"They were my idols," recalled Joan Albin, the eldest daughter of Eugene's sister and the first American-born Kleiner. Joan, then five years old, was the flower girl at their wedding and would visit them often in the Manhattan apartment they moved into after Eugene had completed his master's degree and began working for Western Electric. "I would spend weekends with them in their Central Park West apartment," recalled Joan, a physician. "It was wonderfully decorated. Very modern. They were wonderful."

Kleiner, responsible for making relays for telephone equipment, appreciated how good he had it. As he would say, "I was at Western Electric for almost six years, and once you're there for three years, you have a lifetime job."

Thus, family and friends were shocked when he announced, in 1956, that he was quitting the job and moving to California. Joan Albin remembers the day very well, as her uncle, Eugene; aunt, Rose; and cousin, Robert, drove away from the Kleiner family's Brooklyn brownstone. "My grandmother was so upset," she says. "I was very sad. My mother was sad. But it was great that they had the courage to do that. My aunt Rose was singing, 'California Here We Come."

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es, it was a courageous decision but not an ill-considered one. In fact, for Eugene Kleiner it was the opportunity of a lifetime: to work with William Shockley, the man who had invented the transistor, or semiconductor, the most famous physicist of his day.

Shockley was working at Western Electric's research cousin, Bell Labs, when he called Kleiner to say he was forming a company to make the next generation of transistors and wanted Kleiner to join the start-up team. Kleiner listened. Shockley had the financial backing of Arnold O. Beckman, owner of a successful manufacturer of scientific measurement equipment.

How could Eugene say No? "It would have been easier for me to stay where I was," he said. But as he

explained later, "The job had become routine. Making more and more telephone equipment. Millions of relays, which, at the time, was the heart of the telephone system. I couldn't see making another 10 million or 50 million relays for the rest of my life."

Another young scientist whom Shockley recruited, Robert Noyce, a 28-yearold MIT-trained physicist at Philco, later recalled his call from the famous physicist, "It was like picking up the phone and talking to God.... He was absolutely the most important person in semiconductor electronics. Getting that job meant you would definitely be playing in the big leagues."

Kleiner and Noyce must have come highly recommended because the list of Shockley recruits reflected his search for Kleiner and colleagues at Western Electric, 1948.

the country's best and brightest young scientists: Gordon Moore, a physical chemist from the Applied Physics Lab at Johns Hopkins; Jean Hoerni, a Swissborn, double-PhD chemist from Caltech; Jay Last, a photo-optics expert from Corning Glass; Sheldon Roberts, a metallurgist from Dow Chemical; Victor Grinich, a son of Croation immigrants with a PhD in electrical engineering from Stanford, who was then working for the Stanford Research Institute; and Julius Blank, a mechanical engineer from City College in New York.

All but two of them were under 30; Kleiner, at 33, was the oldest. Shockley, himself only 46, called his new recruits "my PhD production line." (Only the New York boys—Kleiner and Blank—didn't have PhDs) The plan had been to set up shop in Palo Alto, California, at the Stanford Research Park, a 650-acre complex established in 1951 and already being talked about as a ground-breaking experiment in joining business and academics. But when the new recruits arrived in Palo Alto, they found there was no space for them at the park. Instead, they were quartered in an old cinderblock shed, formerly a storage facility for apricots, down the road in nearby Mountain View.

There were other, early signs that

Shockley's genius was not in business. His interviews with his prospective recruits, for instance, included ink blot and IQ tests as well as detailed personal questions he asked with a stopwatch in his hand. Kleiner, thinking the physicist was joking, kept telling him how much he loved his mother.

Unfortunately, it was no joke. Signs of management dysfunction multiplied quickly. Shockley posted employee salaries on a bulletin board, threatened to dismiss employees for routine errors and staged elaborate public firings, preceded by lie detector tests.

Recalled Kleiner: "His management style, to say it kindly, was original."

For Kleiner, in charge of inventing the equipment to manufacture the new company's semicondutor chips, his boss was a bigger hindrance than help. "Shockley knew nothing and was of no help," Kleiner recalled, "but he wasn't smart enough to admit it." Shockley gave Kleiner orders about what to build and each time he did, Kleiner said, "it was a monstrosity. We once had to raise a roof to fit in something he designed, and it never worked."

Recalled Gordon Moore, "Shockley had ideas that he was going to be producing something. Eugene was one of the key people for Shockley. He was going to be setting up the manufacturing."

Then came a day when the young Shockley scientists thought that perhaps it

"It was like picking up the phone and talking to God.... He was absolutely the most important person in semiconductor electronics. Getting that job meant you would definitely be playing in the big leagues." was all a bad dream. That was November 1, 1956, when they learned that Shock-ley—and his former Bell Labs colleagues Walter Brattain and John Bardeen—had won the Nobel Prize in Physics for their invention of the transistor. "We couldn't believe it when he won," said Kleiner. "We hoped it meant maybe he wasn't crazy."

Shockley treated his workers to a champagne breakfast at a Palo Alto restaurant at 7 a.m that day, just after getting his call from Stockholm. A picture taken of the event shows a dozen men, including Kleiner, toasting Shockley—a picture that high-tech historians Everett M. Rogers & Judith K. Larsen say represents "the beginning of the semiconductor industry in Silicon Valley."

The irony is that, if Shockley had succeeded in producing the transistor he envisioned, what today is Sillicon Valley would have been known as Germanium Valley. Besides the management problems, Shockley and his young scientists differed on the fundamental question of how best to make the new transistors. Kleiner and his colleagues believed that an integrated circuit was best built on silicon, not germanium, the element favored by Shockley.

We know who won. But it was a battle that seems, in retrospect, as dramatic as the changes that it wrought.

Rebels With a Cause

As 1957 began, Shockley's company in operation for almost a year and struggling to perfect its technologies was still months away from producing anything for sale. Yet, the business plan had projected the production of thousands of transistors a week by then.

"He may have won the Nobel Prize for the transistor," Kleiner said, "but he never actually manufactured one."

The day before the company's first anniversary, several of the young scientists complained to Shockley about "a general feeling of resentment" and "mental stagnation" at the company. The complaint had little effect.

Eventually, some of the disgruntled scientists decided to go directly to Arnold Beckman. But the owner, after promising to bring in a professional manager, balked, deciding that such a job would damage Shockley's reputation. He told the would-be mutineers, "Take it or leave it."

By this time, recalled Moore, "We felt we had burned our bridges. There was no way we could continue to stay."

When Shockley went to Cape Cod for a working vacation that summer, the young scientists plotted their exit strategy.

Seven of the eight men scraped together \$3,500 between them, hardly enough to start a company. So they began searching for a company to hire them all. But it was Kleiner, the old man of the group at 34, who hit on what proved to be a breakthrough idea. He wrote a letter to a friend of his father's at Hayden Stone, a New York investment bank.

Shockley and his young scientists differed on the fundamental question of how best to make the new transistors. Kleiner and his colleagues believed that an integrated circuit was best built on silicon, not germanium, the element favored by Shockley.

"The letter basically said," as Kleiner later explained, "Here we are. We don't like the Nobel Prize winner we are working with, but we like each other. Would you please give us a few million dollars so we can start a company?" (See sidebar, pages 16 and 17.)

Kleiner's letter found its way to Arthur Rock, a young security analyst at Hayden Stone, who himself was not long out of Harvard Business School.

"Lucky for me," Rock would later say. That letter would change both men's lives—and the history of American computer technology.

Rock found Fairchild Camera and Instrument to underwrite the group's proposal to make semiconductors in a new company called Fairchild Semiconductor. More specifically, the new company would be underwritten by Sherman Fairchild, son of the company's founder and IBM's single largest stockholder. He was fascinated by these young scientists and their plan to create and manufacture a better transistor. No one had done any market research, but Fairchild agreed to give them \$1.5 million—a lot of money in 1957—in return for the option to buy the company from them for \$3 million in two years.

When Shockley returned from his month-long vacation, he got the news. Though he couldn't have known what this defection would mean to his company—or the history of semiconductor technology—Schockley's entry in his notebook for the day was ominously short. "Wed 18 Sep—Group resigns."

In fact, he was stunned, and began calling the group, now joined by Noyce, "the Traitorous Eight."

"We took it as a compliment," said Kleiner.

Overnight Shockley's lab lost its "productive heart," as one Silicon Valley historian put it. Within a year, the Nobel Laureate was out of business.

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The Letter that Changed the World

ditor's Note: In a special section of its magazine devoted to the "founding documents of the electronics age," Forbes ASAP in May of 2000 called Eugene Kleiner's 1957 three-page letter to the Hayden Stone investment firm in New York the "Declaration of Independence of the Digital World." Speaking for the group of seven (Robert Noyce would soon make it eight) then working for Nobel laureate William Shockley, Kleiner voices the group's "dissatisfactions" and their desire to start a company that would produce silicon-diffused transistors. "Had these pages not been sent—and responded to," said Forbes, "the world we live in today would be profoundly different." That letter is reprinted below.

This prospectus is to introduce a group of seven senior scientists and engineers who have been working together in the development of transistors and other semiconductor devices. Appendix I contains their biographical sketches. Because of seemingly insuperable problems with the present management, the group wishes to find a corporation interested in getting into the advance semiconductor device business. If such suitable backing can be obtained the present group can reasonably expect to take with them other senior people and an excellent supporting staff totaling about thirty people. Thus a backer has the opportunity to obtain at one time a well-trained technical group by supplying enlightened administration and support.

This group of seven people, which represents a majority of the senior staff, is presently working at the Shockley Semiconductor Laboratory of Beckman Instruments Inc., which is headed by Dr. William Shockley, who has recently received the Nobel Prize in Physics for his contribution to the invention of the transistor while working at the Bell Telephone Laboratories. The organization has been in operation for about a year and a half doing research and development in transistors. During this period much progress has been made in the field of silicondiffused devices. This has been accomplished at a cost of over a million dollars.

Our present dissatisfactions have arisen primarily from Shockley's confusing and demoralizing management. Although great scientific ability is indeed useful in attracting together such an unusually able-group of technical people as we have, good administrative ability is necessary to use them effectively. Inadequacies in the leadership from this standpoint were brought as a last resort to the attention of Dr. A.O. Beckman. Some adjustments were made by him. However, they are insufficient to allow morale to rise to the point where we can rapidly accomplish success as a productive profit-making organization. Many people are seriously considering leaving the organization. A group feeling arose to the effect that rather than leave one by one, we would much prefer to stay together. We believe that we are much more valuable to an employer as a group.

We have an experienced and well-diversified group of men with background in the fields of physics, electronics, engineering, metallurgy and chemistry. These men are not only outstanding in their own special field, but have learned during the past year to work together effectively. We fully realize that it appears very

paradoxical that the technical caliber of the group reflects the great attraction of Dr. Shockley for these people initially, yet the present pending breakup of the group reflects a later complete disillusionment with his leadership. Nevertheless, this is the situation as it stands. The horizontal ties in the group are strong and adequate technical leadership is present within it. It appears to have no person who has ambitions as a manager at top level. As a result, it is the aim of the group to negotiate with a company which can supply good management. We believe that we could get a company into the semiconductor business within three months which would represent a considerable saving in cost and time.

Negotiations should be concluded as soon as possible in order to preserve the unity of the group. Details of the separation of the group from the present organization can be worked out later, but it would be well to make this separation as quickly as possible after a commitment has been made.

We estimate that within three months after the organization has been started, barring unforeseen delays in obtaining a suitable building, most of the important equipment can be in operating condition and the pilot production phase started. The pilot production and development phase will extend an additional six months during which time we expect to produce sample devices for prospective customers or for an internal market in the organization with which we are associated. Full production planning will then be initiated.

The initial product will be a line of silicon-diffused transistors of unusual design applicable to the production of both high-frequency and high-power devices. It should be pointed out that the complicated techniques necessary for producing these semiconductors have already been worked out in detail by this group of people, and are not restricted by any obligation to the present organization. Also, it should be emphasized that we intend to carry on from the beginning a research program consistent with our manpower availability in order to attain and hold a superior position in the semiconductor field.

The final number of senior people who would leave the Shockley organization to form the nucleus of the new company would probably be about ten, the exact number depending on the timing of the negotiations and the conditions under which the new enterprise is set up. In addition to these senior personnel, we have an excellent supporting staff. While we have not approached them directly, we are confident on the basis of our past interactions with them that nearly all of them would choose to follow our group. In this specialized field, this supporting staff has had to be trained at great cost of time and money. Because of this experienced staff, and also because of the group's own attachment to the lower San Francisco Peninsula area, we would want to establish the operation here south of San Francisco.

It is estimated that the establishment of this new enterprise and its efficient operation in the first year will require an expenditure in the neighborhood of \$750,000. About one-third of this amount would be needed in the first three months in order to purchase initial equipment for the enterprise. Income from sales during the first year is not expected to reduce significantly the estimated capital outlay. This estimate allows for rental costs, but does not include any expenditures for the construction of a new building. A more detailed listing of proposed first-year expenditures is in Appendix II.



he day after their en masse resignation, September 19, 1957, the eight men signed their contract with Fairchild and launched Fairchild Semiconductor. They would soon be known as The Fairchild Eight. They wasted no time putting their considerable talents and energies to work. By mid-October, they had leased a building at 844 East Charleston Road in Mountain View, a mile north of Shockley's lab on San Antonio Road.

It was that same month that the Soviet Union shocked the world with its launch of the first Sputnik satellite. The event was transformative for the United States, which realized that its Cold War enemy now had a significant edge in space technology. The ensuing rush to close "the missile gap" meant a frantic search for new technology, including the high-frequency transistors that the new Fairchild Semiconductor would begin to produce.

A new California Gold Rush had begun, and Kleiner was in the middle of the mother lode. Robert Noyce, the son of an Iowa minister, was the nominal manager of the new operation, but he ran a loose ship, setting a management tone and style that would come to be hallmark of the industry, which would literally grow up around them. No one had titles, or reserved parking, or private offices, and there were no middle managers. At sales meetings, the men served brownies and whiskey. Early on, Fairchild headquarters sent in a manager to run things, but "he was awful," Kleiner

recalled. "After we saw him manage, we decided we could manage ourselves." And they did. "There was no magic to it," Kleiner said.

But there was hard work to it. These men, in the prime of their productive lives, formed a team that was larger and more productive than the sum of the parts. They were racing to build something that had not been built, a challenge that meant that they had to build the machines to build the transistors. There were no blueprints, no books, no manuals. This was Eugene Kleiner's job—and he loved it.

"I did things at Fairchild Semiconductor I never thought I could do," he explained. "My early responsibility was to build equipment for manufacturing semiconductors—equipment that didn't exist at that time. You couldn't buy it because no one was making it."

He made furnaces that produced extreme high temperatures, but were controlled to within a half of a degree. He made crystal growers, which he had never done before.

"I knew what needed to be done because of my engineering degree, my advanced degree and my years with Western Electric," Kleiner recalled. "But none of us really knew how to do it because what we did had never been done before."

They all pitched in. "In the early days

Left: The Fairchild Eight, from left to right, Gordon Moore, Sheldon Roberts, Eugene Kleiner, Robert Noyce, Victor Grinich, Julius Blank, Jean Hoerni and Jay Last.

Right: Eugene Kleiner at the groundbreaking for the Fairchild Building headquarters, 1961. we had PhDs on the production line just to get the process nailed down," he recalled. "I had to try to produce these things according to specific cautions that we established. It was difficult. Essentially, I had to tell the people on the production line, don't use your imagination. Don't make any changes. Just follow the process the way it has been established."

Fairchild produced groups of wafers containing hundreds of transistors, and it was Kleiner who had to ensure they were made properly and to an exacting standard. He and his engineers invented a robotic production system still used today. He demanded that the process be clean and dust-proof. He instituted nosmoking rules before anyone else. He wrote detailed process manuals, hundreds of pages in length, "in several editions," Kleiner recalled. "The manuals had to be revised several times, before they became clear enough to be followed by a relatively unskilled person."

In less than a year after the company was launched, Fairchild shipped its first 100 transistors—packaged in a Brillo carton—to IBM in the fall of 1958. By December, they had over \$500,000 in revenues for the year—their first—and were earning a profit. In the first eight



months of 1959, their second year in existence, Fairchild Semiconductor was making transistors for the Pentagon's Minuteman nuclear missiles and had sales of \$2.8 million. There were large purchases from Hughes, Sperry, Arma Bosch and other digital avionics companies.

It was an amazing startup—and clear proof to Shockley and his backers that the renegades had been right.

Fairchild opened a new factory in Mountain View in the summer of 1959. Naturally, Sherman Fairchild was quick to exercise his option, which was already looking like one of the best deals in business history, paying \$3 million (in addition to his initial \$1.5 million) for a company that would earn \$21 million in 1960, only its third year in operation. Still, for the eight men who contractually had to sell to Fairchild, the \$250,000 each received was a lot of money.

"I felt like a multimillionaire," Kleiner recalled.

In a few short years, he would be one in fact—as would most of his colleagues at Fairchild. Together they had transformed silicon manufacturing and changed the face of the high-tech revolution.

"It is entirely possible that there would be no silicon in Silicon Valley if Fairchild Semiconductor had not been established," recalled Arthur Rock.

The Edex Interlude

K leiner's role in Fairchild's phenomenal creation was singular, but there was no doubt in his mind that this was a group effort and so he kept in his study a framed picture, signed by all of the Fairchild Eight.

It was perhaps not surprising that as Fairchild's explosive success leveled and matured, their entrepreneurial founders would seek new challenges. In 1962, not long after the "buyout," Kleiner left Fairchild. He was one of the first to strike out on his own to start a company.

He now had his own money, and his fame in the Valley also gave him the clout to raise money. He used his money and clout to start Edex, for Education Excellence, and built the first "teaching machine."

Though there were computers at the time, most were built by IBM and were the size of cars. Kleiner's teaching machine sat on a desk and, using telephone relays, was interactive, complete with audio-visual presentations and score-keeping capability. Kleiner sold his machine to Bank of America, which used it to train loan officers. He took his creation to schools, explaining: "We tried it with three groups of high school dropouts in South San Francisco and



"I did things at Fairchild Semiconductor I never thought I could do...My early responsibility was to build equipment for manufacturing semiconductors—equipment that didn't exist at that time. You couldn't buy it because no one was making it."

Oakland. They were tough kids. By using the machine, they really participated and they were shouting at each other, 'I told you to put a comma there,' things like that. It was exciting."

The machines quickly caught the eye of Raytheon, the big defense contractor, which was looking to expand into hightech. It bought Edex in 1965 for \$5 million, giving Kleiner, still just 42 years old, another financial windfall. His contract called for him to stay with the company for a year; it felt like a lifetime. "I was supposed to be selling to the education market," he recalled, "and here my business card said 'Missiles Division.' That ended most sales conversations." And then Raytheon wanted to send him to Indiana. "You just don't move from Palo Alto, California, to Michigan City,

Below: Eugene and Rose with their children, Lisa and Robert.

Left: Eugene Kleiner photographed in 1966.

Indiana. The place is best known for having a penitentiary."

He left Rayethon as soon as he could, quitting in 1965.

A Family Man

ugene took his wife and children Robert and Lisa, born in 1959, to Europe for two months in 1967, in part to show his children his birthplace; in part to think about what to do next. Typical of his personality, Kleiner included his family in his life. Still in his mid-forties and having helped launch the Second Industrial Revolution, he was still taking family vacations. In the late 1950s, for example, his sister, recently divorced, sent her three daughters to California to live with Eugene and his family. Joan, the eldest, recalled that her uncle, then in the midst of creating Fairchild, always seemed to have time to help her with her homework. "He was very good with geometry," she recalled.

Even after Joan and her sisters moved back to New York a year later, Joan



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recalled, her uncle Eugene would visit whenever he came to the city. "He would come by, take me for a walk and buy me an egg cream. He was simply wonderful."

"He made a commitment to my mother to do everything he could to compensate for the 3,000 miles," recalled Susan Albin, the second daughter of Eugene's sister. "There was a never ending back and forth of gifts, letters, trips, phone calls. They did everything they could to make sure we—the cousins grew up together." (The influence seems clear: Susan Albin would become a professor of engineering at Rutgers University.) Susan's sister, Karen Madigan, an architect, was born in 1952, the same vear as Robert Kleiner. The Kleiner clan took regular family vacations, including the Albin girls, to Lake Tahoe.

"It was heavenly," recalled Susan of their summers in California.

"He was a very loving father," recalls Robert. "No matter how busy he was, he was always home for dinner." Spending time with family was how he recharged his batteries.

It was during the European trip with his family that he realized that what he loved to do most was start and build companies. He was, after all, an engineer. "Making money was not quite as important to him as enjoying how he was making it," says his son Robert. "Whenever he was asked what he did for a living, whether it was filling out a form in a doctor's office or meeting someone new, he always said, 'engineer.' He never said 'businessman' or 'venture-capitalist."

Dining out with Eugene and Rose is Eugene's sister, Rose Kleiner Kopelson.

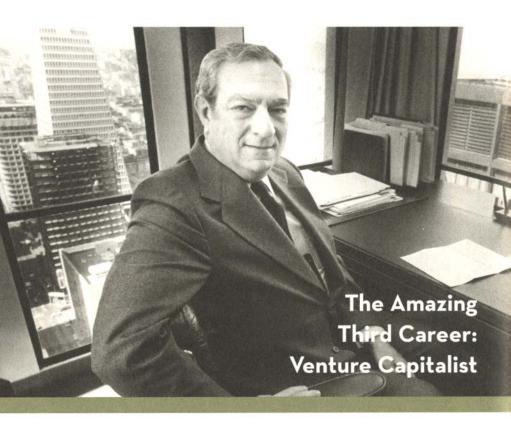






Top: Left to right: Dr. Joan Albin (Eugene's niece), Julie Thyssen (Joan's daughter), Anna Juliar (Susie's daughter), Rose Albin (Eugene's sister), Susan Albin (Eugene's niece), Zoe Madigan (Karen's daughter) and Karen Madigan Albin.

Bottom: The entire Kleiner family, clockwise starting at the top left, Matt Chanoff, Lisa Kleiner Chanoff, Eli Chanoff, Rose Kleiner, Eugene Kleiner, Joyce Kleiner, Robert Kleiner, Jake Kleiner, Yael Chanoff and Talia Chanoff, 1995.



ost of the original Fairchild
Eight were moving on to
other things, fueling a burst of
entrepreneurial energy unprecedented
in modern times. Between 1966 and
1969, Fairchild managers and engineers
started nineteen new companies. Those
included National Semiconductor, founded
in 1967 by Don Valentine, a Fairchild
marketing executive; Intel Corp., started
by Noyce and Moore in 1968; Intersi,
co-founded by Hoerni, in 1968; and
Advanced Micro Devices, founded by
Jerry Sanders, another Fairchild marketing department executive in 1969.

In fact, most of the high-tech firms started in the valley in the 1960's were started by "Fairchildren," as one business writer christened them. By then each Apollo moon shot would use a million silicon-based computer chips—all made on machinery that Eugene Kleiner invented. Gordon Moore would say then that there were "more transistors made in the world every year than raindrops fell on California."

Kleiner could not have picked a better time to become a "rainmaker." By then he had some experience with building companies and had already invested \$100,000 in a new venture-capital fund started by Arthur Rock; he became a limited partner in the business and helped evaluate technology ideas that came their way. Among the first to receive his help were his old colleagues. Eugene gave Moore and Noyce \$100,000 to help them launch Intel, which would grow

into the greatest industrial engine in the Bay Area. By 2004, Intel was worth some \$220 billion.

Between 1967 and 1972, Kleiner enjoyed himself. "It was fun being involved in starting companies," he would recall. "The variety, not being tied down to a job that would become routine....
For the first time in my life I didn't have any day-to-day responsibilities."

About this time, Henry Hillman, the Pittsburgh steel magnate, called Kleiner, inviting him to move to Pittsburgh and help him invest \$4 million. "I didn't think Pittsburgh was any better than Michigan City," Kleiner said. "I told him no." So Hillman said that he could stay in California and would still get the \$4 million to invest—if he could come up with another \$4 million.

A banker friend of Kleiner, Sandy Robertson, suggested teaming up with Tom Perkins, whom Robertson had helped with his Spectra-Physics laserdevice company. (The year before, Kleiner had been the first investor in Robertson's venture-capital business.) Perkins was a 40-year-old MIT-trained engineer who had just quit Hewlett-Packard—for the second time. He had sold his laser company for 130 times his original investment and was looking for new ventures. The two were different in age, background and temperament. Perkins, 10 years Kleiner's junior, had grown up in a New York suburb, had a Harvard MBA, and was as outgoing and extravagant as Kleiner was reserved and parsimonious. At Hewlett-Packard, where he had run several departments, Perkins was known to walk across desks

to answer a phone that had rung more than twice. (He would later become a leading San Francisco socialite and marry Danielle Steel, a best-selling author.) Kleiner, with his deep voice and Viennese accent, had the air of old-world charm and manners and was known for steady, studied reflection.

"Eugene had the semiconductor world covered," recalled Robertson. "Tom had the computer world covered."

They set up a breakfast meeting at Rickey's Hyatt House in Palo Alto on a summer morning in 1972. "We met there at 7:30 in the morning and it was fascinating to see the immediate rapport," said Robertson. "The energy of that breakfast was wonderful. The conversation was so intense we forgot about the time and finally got kicked out of the restaurant four hours later, as they were setting up for lunch." That was Friday morning. Kleiner and Perkins met again on Saturday and again on Sunday. "Monday morning they called me," recalled Robertson. "They said, 'We're on the same wavelength. We both think the same way and we've both been operating managers. We think we can work together and our philosophy of venture capital is the same-let's go and raise a \$10 million fund."

Perkins would recall: "I got a sense of confidence from Eugene. At our first meeting, he said, 'You and I can make it happen,' and he really meant it. He gave me a sense of confidence and optimism. That's my greatest debt to Eugene."

Kleiner and Perkins shook hands, created their own company, Kleiner Perkins (KP), then proceeded to revolutionize the venture-capital industry.

With their contacts and accomplishments, KP quickly raised the \$4 million needed to pull in Henry Hillman's \$4

Eugene Kleiner at Kleiner Perkins, San Francisco, 1971.



million. That same year they opened for business at 3000 Sand Hill Road, in Menlo Park, a new commercial development that would become famous as a hotbed of Silicon Valley dealmaking, a kind of Wall Street west; indeed, office space at 3000 Sand Hill Road would eventually cost more than on Wall Street. Tom Ford, the developer who rented to Kleiner and Perkins, would show his appreciation for his early venture-capitalist tenants, by endowing a professorship at Stanford: the Kleiner Perkins, Mayfield and Sequoia Chair in Engineering.

In fact, KP was so successful so early that the partners never spent the full \$8 million in their first fund. "It was one of the greatest venture-capital returns of all time," recalled Robertson. "It funded Tandem Computers and Genentech. I think the best merger I ever did in my life was introducing those two guys to each other and raising their first fund."

Unlike other financiers, who simply

On to new things: the original Fairchild Eight, reunited in 1985—from left to right: Gordon Moore, Sheldon Roberts, Robert Noyce, Eugene Kleiner, Victor Grinich, Julius Blank, Jean Hoerni and Jay Last.

loaned money to startups and held their breath, Kleiner considered himself an engineer and a "technologist" and threw himself into his investments. Perkins brought the same philosophy to the table. Together, KP became known for "incubating" companies into existence—and profitability.

"The other VCs would turn over the money to the entrepreneur and then just watch in the grandstand," explained Kleiner, "only asking questions after a company went south. We weren't going to be checkbook investors."

He and Perkins wanted part ownership of the company, wanted a seat on the board of directors; often, they paid some-

one to invent a company. For instance, they hired Jimmy Treybig, a Hewlett-Packard electrical engineer and encouraged him to develop his idea for a reliable computer. The result was Tandem. Genentech, was an idea hatched by Bob Swanson, a KP associate dispatched by Kleiner and Perkins to find a company to start. After a year's research, Swanson proposed genetic engineering, about which no one knew anything. "We turned to high school biology for help," Kleiner recalled, "but that didn't help us very much. We got David Packard on the board and he, too, didn't know much about biotech."

By continued focus and diligent research, and by bringing in Herbert Boyer, a Stanford geneticist, to do "the science," they found a way. And the rest, like much of what KP did, was history. Their \$200,000 investment in Genetech in 1976 was worth \$160 million when the company went public four years later.

"We just didn't wait around for deals to come to us," said Kleiner. "You have to create the deals to be really successful."

In the same way that he designed manufacturing methods to make computer chips, Kleiner systematized the creation of money. "What Eugene Kleiner and Tom Perkins tried to do is create a dispassionate system for winning more often than losing, even if instinct ultimately governed," wrote David Kaplan in his 1999 book, *The Silicon Boys: and Their Valley of Dreams.* "In the process, they created a new vocabulary of money, even if the system sometimes looked like a crapshoot to outsiders."

Kleiner would recall: "When we began, entrepreneurship was in its early stages and entrepreneurs didn't have the same grasp of business they now have. We had more experience than most entrepreneurs the first time around. As a result, we participated with the entrepreneur in building companies. We were involved in the start-up and in the corporate governance. We sat on boards, and were involved in most major decisions.... We saw ourselves as builders of companies rather than just investors."

In incubating Tandem Computer, for example, they hired Treybig to start it and owned 40 percent of the company and then, as Kleiner noted, "spent a fair amount of time at Tandem, where we were part of management, although we did not take any salaries. This was true of every one of our investments."

Such was their success—their \$1.5 million investment in Tandem in 1973 was worth \$88 million by 1981—that it didn't take long before KP was more like an exclusive country club than a retail store. In 10 years, their \$8 million fund was worth \$400 million. Investors and entrepreneurs alike were lining up at KP's door. "Helping entrepreneurs find their way was a source of great pride for him," said son Robert.

"It took us a while to realize the magnitude of the money," said Kleiner. Tom Perkins, who loved his fleet of antique cars and his yachts, finally convinced Kleiner to buy a Jaguar, one of his few luxuries. (He did indulge in shoes, a quiet memorial to his father, and had a collection of the best.) In fact, Kleiner's frugal tastes were legendary. Long after he had become a wealthy man, colleagues at KP noted that he would watch the drugstore ads and buy a carton of Crest toothpaste when it went on sale.

And though he never wrote a book, he became famous for his cryptic but incisive observations about business practice. Colleagues began collecting his favorite pieces of advice and circulating them as "Kleiner's Laws." (See sidebar.) These commandments resonated because they carried that special Kleiner mix of precise practicality and universal truth; they not only told of their author's serious approach to the venture-capital business, but also indicated the fun that went with it.

"He was the benevolent, wise father

figure," said Brook Byers, who joined KP in 1977. "A calm, wise person."

Behind that calm, dependable demeanor, however, was an intensely fearless entrepreneur. Byers recalls going to Kleiner when he was exploring an investment in Hybritech, the first company to produce monoclonal antibodies. There was still no such thing as the biotech industry and KP did about only

Kleiner's Laws

Admired by colleagues for his grace and brilliance, Eugene Kleiner was also known for his dry, cryptic wit. In countless meetings, he was known to drop certain pearls of business wisdom into a serious conversation. He himself never wrote them down and hence, over the years, anyone who offered a witty and wise one-liner at business meetings was accorded the accolade of having it called one of "Kleiner's Laws." Thus, there are variations, in order and in phrasing, but a young associate can still be reprimanded for violating one of "Kleiner's Laws."

On Financing

The time to eat appetizers is when they are being passed around.

On Boards of Directors

A good board will give you better advice than your mother.

On IPOs

Even turkeys can fly high in a strong wind.

On Long-Term Thinking Try to avoid the \$30,000 refrigerator.

On CEO Ego

Revisionist history usually begins during the IPO.

On the Need for a Board of Directors

It is difficult to see the picture when you are inside the frame.

On Ambiguity

After learning some tricks of the trade, many people think they know the trade.

On Customers

There are two types of early adopters: those who buy and those who want the product given to them.

On Start-up Fratricide

New companies dividing niche markets are like two bald men fighting over a comb.

Venture capitalists will stop at nothing to copy success.

On Crisis Management

There are times when panic is the appropriate response.

On Market Opportunity

After R&D is finished, make sure the dogs want to eat the dog food.

one deal a year in this discipline. Byers would have to take a leave of absence to start and run the company. "Would his career be over if the company failed?" he asked Kleiner.

"You should be taking these risks," Kleiner responded. "What do you want to be? Someone who invests with others your whole career or someone who invests in something you initiated?" Byers and KP went ahead with the deal. The company went public in 1981 and was sold in 1986 to Eli Lilly for \$400 million.

"Eugene and Tom are not investors,

they're builders," says John Doerr, who joined the firm in 1980. By this time Kleiner, approaching 60, was easing out of the business; his little company having incubated more than 90 high-tech firms into existence and growing his own firm's capitalization to \$230 million. As testament to what he had built, Kleiner Perkins Caufield Byers, as it had become, would continue scoring impressive financial victories, including investments in Netscape and Amazon and Sun and some 250 more companies—all started with money that Eugene Kleiner helped raise.

Below: Rose and Eugene with former Polytechnic President David C. Chang during the University's Mechanical Engineering Centennial (ME100) celebration in 1999.





That would Eugene Kleiner do in "retirement"? It was a question many friends and colleagues asked. Did he have any interests outside of building companies? Nobody really knew.

His children tried to interest him in hobbies. They gave him a set of golf clubs for his 55th birthday. "He never took a swing," says his son Robert. A bicycle arrived for his 60th birthday—"the odometer never went past zero." A telescope for his 65th birthday—with lessons!—but there was no stargazing. "None of it took," said Robert. "His hobby was business."

What had appealed to him in the venture-capital business, he explained, was "the variety and caliber of the people I meet." So, he kept doing what he loved: helping others build companies, for the rest of his life. He served on numerous corporate boards, advisory committees and college boards, including the Board

of his alma mater, Polytechnic University. He received an Honorary Doctorate of Engineering from Polytechnic in 1989. In 1999, the U.S. Post Office issued a stamp honoring Kleiner and the other men of the Fairchild Eight for their historic work in discovering how to mass produce the integrated circuit. In 1999, Polytecnic named him Outstanding Mechanical Engineer of the Century—a unique designation for a unique man—as the school celebrated the centennial of its mechanical engineering program.

"He was an absolute gentleman," recalled Thorsen, a former head of Polytechnic's mechanical engineering department, who first met the Kleiner's in the early eighties. "Very reserved, very polite. He did a lot of listening. But once he reached a conclusion, he was tenacious in presenting and defending his position."

Former Polytechnic President David Chang said of Kleiner: "His vision, determination and business acumen will serve as an inspiration to countless generations of Poly students. His legacy lives on and serves as a beacon to bright, ambitious men and women with a dream, with an idea, and the determination to make it happen."

Looking back on his life and career, Kleiner would say: "Actually, we live such a short time when you look at the whole spectrum. We've gone for thousands of years and we live for such a small, infinitesimal period. And what do you do with it? What can you do with it, really? You enjoy starting a family. It's one of the things that you do that has some continuity and permanency."

His niece Susan Albin recalls calling her uncle once in the 1980s, when he was a legend and semi-retired. His secretary explained that he probably couldn't talk to her since "he's on the phone with Alan Greenspan." But when she told Eugene who was on the phone, Susan recalls the secretary's coming back on the line and saying, "One moment, I'll put you right through."

"This is why he was so important to us," recalls Susan. "You could always count on Uncle Eugene. Good times and bad. He would always fly to New York for our graduations, our weddings."

Even at the end of his life, he remained an optimist. Daughter Lisa recalls visiting him, at home, as he endured the pain of cancer, and telling him what a remarkable life he had led. His reply: "Yes, but tomorrow is a new day."

He died, at home, on November 20, 2003. He was 80 years old.

"History will remember Kleiner as one of the fathers of Silicon Valley and modern venture capital," wrote Lawrence Aragon, editor of *Venture Capital Journal*, "but without his unfailing optimism he may not have been either."

As Eugene Kleiner himself noted, with characteristic understatement, "It was not a life that was wasted."

Left: Sitting by a mock-up of the 1999 33-cent stamp honoring the Fairchild Eight are, from left, Fairchild members Jay Last, C. Sheldon Roberts, Julius Blank and Eugene Kleiner '48 Hon'89.

Right: The Kleiners, circa 1995.







Top: President George Bugliarello congratulates Eugene Kleiner after he received an Honorary Doctorate of Engineering from Polytechnic in 1989.

Eugene Kleiner at home in California, 1986.

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Photos courtesy of the Kleiner Family Photo of the Fairchild Eight: Magnum Photos

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The Power of PolyThinking



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