Jay Moskowitz (Phy'70)

Rhonda Vanover

Wizard of Inventions

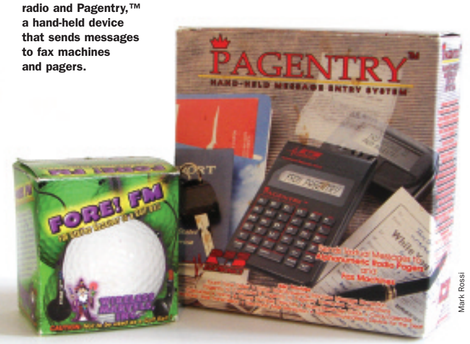
Boundless curiosity, a fascination with science and technology and a genuine passion for creative problem-solving—a skill cultivated during his years at The Cooper Union—led Jay Moskowitz (Phy'70) through a successful career as an entrepreneur and inventor for more than three decades. Since he earned his bachelor's degree in physics, his professional achievements have included launching six start-up companies, conceptualizing and bringing dozens of unique products to market and designing complex protocols for wireless communications. His versatile background, which spans multiple industries, also includes contributing his expertise to space exploration as a system designer of the National Aeronautics and Space Administration's SKYLAB space station simulator used to train astronauts.

Each of the firms Moskowitz founded was intended to provide a forum to explore innovative product concepts, then manufacture and distribute his creations. "Wireless Marvels is an entity I formed to experiment with ideas," says the founder, president, CEO and "chief wizard" of this Florida-based corporation. All of his inventions are conceived from personal interests, such as investing: TICKERTEC™ is a real-time stock market quotation and analysis system he developed and SoftStop™ is an online service that allows traders to increase profitability before selling their securities.

Moskowitz has applied his capabilities in problem solving and technology to design protocols and communication systems for radio paging, cellular telephony, wireless instant messaging and even a system for navigating ships at sea. Pagentry,™ a product he developed in the 1980s, was pivotal as an early generation of the Personal Digital Assistant and the start of wireless text messaging. The hand-held device sends messages to fax machines and pagers. For many years, the patented product was listed in *Guinness World Records* as the world's smallest fax machine. More recently, he executed a product concept that speaks to his lighter side: FORE! FM,™ a golf-ball radio. The idea for this novelty item was inspired by an irresistible interest in the marketing opportunity to reach a captive audience of 200,000 spectators at the 2002 U.S. Open on Long Island.

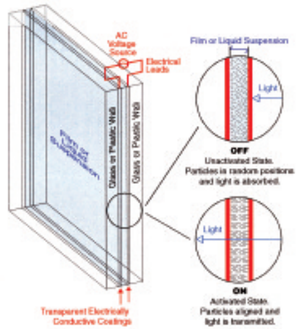
These days, the savvy entrepreneur has set his sights on a revolutionary product that offers a practical solution for conserving energy. SPD-Smart™ Glass (SPD stands for Suspended Particle Device) is glass that can change from clear to dark, or any level of transparency in between, within a second. Moskowitz likens it to transition lenses in eyeglasses, but points out one critical difference: "Through electronics, users can precisely control how much light goes through the glass at any given time, and change it instantaneously."

After years of following the activities of Research Frontiers Inc., the developer and licenser of this light-control technology, Moskowitz realized the breadth of possibilities and widespread applications large and small—from windows in skyscrapers, automobiles and aircraft to skylights and ski goggles. So he decided to establish his newest venture, SPD Control Systems Corp., to develop the patent-pending electronics that enable users to remotely control the amount of light streaming through Smart Glass. Companies such as Hitachi and Nippon Sheet Glass/Pilkington will produce chemical components and the glass while SPD Control Systems will create the controls to switch the tint. The product is



Mark Rossi

Some of Moskowitz's inventions include the FORE! FM™ golf-ball radio and Pagentry,™ a hand-held device that sends messages to fax machines and pagers.



left and opposite page: SPD-Smart™ Glass changes from clear to dark within a second. Moskowitz is developing electronics to remotely control the amount of light coming through the glass.

already creating a buzz among industry insiders and its potential to reduce energy consumption and costs by as much as 20 percent earned a nod at the March 2005 Cleantech Venture Forum IX in San Francisco, CA. (The conference is sponsored by Cleantech Venture Networks, an association of venture capitalists who invest in clean and renewable technology.)

Lately, Moskowitz says he's been looking at windows in a very different way. "There's an enormous amount of glass in the world. Considering energy consumption and the potential to reduce the cost of energy and increase efficiency, this is the perfect time for this product." Though in its infancy now, he predicts that Smart Glass will become mainstream in a few years' time and eventually become the standard for all types of window applications. As his professional history suggests, he finds it both exhilarating and rewarding to identify a niche product and watch it evolve once it hits the market. "Finding these little niches gives you minimal competition and really allows you to capture market share."

Moskowitz, a Brooklyn, NY, native from Canarsie, remembers what sparked his childhood interest in science as if it were yesterday: a fifth-grade field trip to Brookhaven National Laboratory on Long Island. "We toured the facility and stood next to a live nuclear reactor," he recalls. "The scientists walked us through a computer that looked bigger than my elementary school. We all huddled around an oscilloscope that was connected to a computer that looked like the one built into a mountain in one of my favorite movies, *Colossus: The Forbin Project*." The experience fueled his curiosity so much that he developed an insatiable appetite for books about science. With the determination and self-discipline of any successful entrepreneur, the youngster rode the subway to the library daily to explore nuclear physics and chemistry. He read books by the dozens, no matter how far over his head the topics were. He even wrote away to the Atomic Energy Commission for pamphlets on isotopes, fusion, nuclear chemistry and other related subjects. Recently, he donated this set of 25 booklets—now nearly a half-century old—to the Smithsonian.

Moskowitz's inquisitiveness continued to move him to action during high school when he set up an elaborate chemistry and physics lab in his parents' basement in Brooklyn. There he constructed a Jacob's ladder that shot electrical flames six feet high, built a generator to create lightning bolts' static electricity and experimented with various chemicals, recording their interactions. Fortunately, there were no dangerous explosions and no end to the curiosity that earned him several first-place prizes in science competitions, as well as the opportunity to study physics at The Cooper Union. Unlimited access to the computer room on campus and being continually challenged in problem solving were the two strongest influences on his career pursuits. "In physics, there isn't necessarily a straightforward way to approach a problem," he recalls. "They taught us concepts—understanding pieces of the puzzle and then letting us glue everything together. When you piece it all together, you'll find the answer. That's exactly what I do today."

Phillip Ennis

This custom home theater houses Moskowitz's collection of more than 300 science fiction movies.

In the early 1970s, Moskowitz worked as a systems programmer and analyst, and later entered the U.S. Army Reserve. In less than a decade, he launched his first start-up, Intersystem Software, and by the late 1980s, he added senior-level positions with major players in the software and telecommunications industries to his resumé. In 2000, 13 years after establishing RTS Wireless, a communications firm, he sold the venture for $110 million. Today, Moskowitz resides with his wife Debbie in both Florida and New York and dedicates his time to overseeing Wireless Marvels and SPD Control Systems.

A member of The Cooper Union Alumni Association's Florida chapter, he is also active in the Institute of Electrical and Electronic Engineers, the Association of Computing Machinery and the Personal Communications Industry Association. He professes that work has always been his favorite hobby and he has no plans for retirement anytime soon. At home in New York, he escapes to outer space in an elaborate custom theater that houses his collection of more than 300 science fiction movies and memorabilia, including autographed movie posters and robot models from classics such as *Forbidden Planet* and *The Day the Earth Stood Still*. He also enjoys vacationing with his two children, Erik, a law student, and Leah, an opera singer.

Looking back on his years at The Cooper Union, Moskowitz says, "The school is an amazing place to give students the tools to affect the world around them," which is precisely what he hopes to accomplish with his latest endeavor. "I established SPD Control Systems because I believe that this glass is going to become ubiquitous. We can make a significant impact worldwide with a product that will be used by hundreds of millions of people every day. What better satisfaction can any engineer have than creating something that will be used by so many people for ages to come?"

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