

Donald Bitzer, a pioneer of cyberspace and plasma screens, dies at 90

He helped shape cyberculture as the father of PLATO, a computer-based educational network that sparked the development of plasma screens and digital messaging.

Today at 7:54 p.m. EST

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Donald Bitzer, an electrical engineer who invented the plasma screen with two colleagues, was a longtime professor at the University of Illinois at Urbana-Champaign and then at North Carolina State University in Raleigh. (Marc Hall/North Carolina State University)



By [Harrison Smith](#)

Years before the internet was created and the first smartphones buzzed to life, an educational platform called PLATO offered a glimpse of the digital world to come. Launched in 1960 at the University of Illinois at Urbana-Champaign, it was the first generalized, computer-based instructional system, and grew into a home for early message boards, emails, chatrooms, instant messaging and multiplayer video games.

The platform's developer, Donald Bitzer, was a handball-playing, magic-loving electrical engineer who opened his computer lab to practically everyone, welcoming contributions from Illinois undergrads as well as teenagers who were still in high school.

Dr. Bitzer, who died Dec. 10 at age 90, spent more than two decades working on PLATO, managing its growth and

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development while also pioneering digital technologies that included the plasma display panel, a forerunner of the ultrathin screens used on today's TVs and tablets.

“All of the features you see kids using now, like discussion boards or forums and blogs, started with PLATO,” he said during a 2014 return to Illinois, his alma mater. “All of the social networking we take for granted actually started as an educational tool.”

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An Illinois native, Dr. Bitzer had just finished his PhD and joined the Illinois faculty when he got involved with a proposal to develop a computerized educational program. The university had set up a committee in 1959 to explore the concept, but was unable to agree on a proposal until Dr. Bitzer stepped in and offered his vision for PLATO, which stood for Programmed Logic for Automated Teaching Operations.

Under his direction, the platform was launched on the school's groundbreaking ILLIAC I computer, a hulking five-ton mainframe built from 2,800 vacuum tubes. Students could use computer terminals to access course materials through a limited campus network, run off TV signals generated by the ILLIAC I.

To expand the platform, Dr. Bitzer worked to build a better display for the computers, which operated on cathode-ray tubes that caused the screen to flicker. Partnering with fellow Illinois professor Gene Slottow and graduate student Robert Willson, he helped invent the plasma display, using gold electrodes to excite neon gas held within thin panes of glass. Energized to a plasma state, the gas illuminated pixels, forming words and images.

While the earliest plasma screens were illuminated with a single color, orange, full-color plasma display systems were available by the early 1990s. Within a decade, the screens had become a household fixture, used for computers as well as high-definition televisions.

Dr. Bitzer continued to work on PLATO as it took off in the

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1970s, expanding to universities, grade schools, corporations and government agencies. Messaging and communication apps proliferated on the platform, developed by users who found that the system could be a source of entertainment and connection, not just education.

To encourage innovation, Dr. Bitzer maintained an unusually open culture at his lab, where users as young as 12 designed parts of the system, according to Brian Dear, an author and tech entrepreneur who chronicled PLATO's history in a 2017 book, "The Friendly Orange Glow." (Its title referred to the hue of early plasma screens.)

Dr. Bitzer "encouraged young people — anyone with an interest — to show up, wander in, ask questions," Dear said in a phone interview. "He always sought out the brightest people, regardless of their background, and hired and encouraged women" at a time when the field was dominated by men.

"I interviewed hundreds, even thousands of people for the book over almost 30 years," Dear said. "The one common thread was their undying loyalty to Bitzer and the lab, thanks to the culture he created."

Although PLATO struggled to adapt to the rise of the internet, its applications influenced other developers in Silicon Valley, including visiting researchers from Xerox PARC.

"When networks like the internet were still a research lab curiosity, Don Bitzer's multiuser PLATO system served as a dress rehearsal for what we do on those networks today — learn, teach, collaborate, chat, mail, play games, argue, and more," wrote Dag Spicer, senior curator at the Computer History Museum in California, in [a tribute to Dr. Bitzer](#). PLATO, he added, "was a postcard from the future of online communities, and its example would help make that future real."

The younger of two children, Donald Lester Bitzer was born in East St. Louis, Illinois, on Jan. 1, 1934. He grew up in nearby Collinsville, where his father ran a Plymouth-Dodge dealership. His mother, a homemaker, died of cancer when
he was 17

He was 1/.

Fascinated by math and science, Dr. Bitzer built ham radios and receivers and constructed his own arc lights, repurposing carbon electrodes from batteries. “They had trouble keeping him in the classroom,” his son David said, “because he’d much rather be home tinkering and experimenting.”

Dr. Bitzer studied electrical engineering at the University of Illinois, receiving a bachelor’s degree in 1955, a master’s in 1956 and a PhD in 1960.

In 1955, he married his high school sweetheart, Maryann Drost, who became a nurse and educator, incorporating the PLATO system into her work. They started a family and traveled the world, living on the outskirts of Kharagpur, India, for almost a year when Dr. Bitzer got a job as a visiting professor there in the 1960s. It was a thrilling experience, Dr. Bitzer recalled, although it took time to get used to seeing cobras in his garage.

His wife died in 2022. Dr. Bitzer’s death, at home in Cary, North Carolina, was confirmed by his son, who said the cause was congestive heart failure.

In addition to his son, survivors include a sister, three grandchildren and two great-grandchildren.

Dr. Bitzer left Illinois in 1989 to join the computer science faculty at North Carolina State University in Raleigh. He never retired, doing research late in life on artificial intelligence and convolutional coding, among other subjects.

A practicing magician — he liked to tell people he was a member of “IBM,” the International Brotherhood of Magicians — he incorporated magic tricks into many of his lectures, passing paper balls through solid plastic cups to explain the concept of induction, according to the Raleigh News & Observer.

Dr. Bitzer was elected to the National Academy of Engineering in 1974, was inducted into the National Inventors Hall of Fame in 2013 and was named a fellow at the Computer History Museum in 2022. In 2002, he shared an Emmv Award for technological achievement with Slottow

and Willson, for their work developing plasma screens.

While television manufacturers have increasingly turned to LED technology instead of plasma screens, Dr. Bitzer wasn't sorry to see the monitors go: He said he had always anticipated that the display's commercial fortunes would fade, and that new technology would replace it.

"That's why I'm trying to teach my students to think," he told Technician, the North Carolina State student newspaper, [in 2015](#). "If they can think, they can have new ideas that can be creative."

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By [Harrison Smith](#)

Harrison Smith is a reporter on The Washington Post's obituaries desk. Since joining the obituaries section in 2015, he has profiled big-game hunters, fallen dictators and Olympic champions. He sometimes covers the living as well, and previously co-founded the South Side Weekly, a community newspaper in Chicago. [X](#) [@harrisonsmith](#)