

The BEST OF MIZZOU

STORY BY
PHOTOS BY

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MIZZOU HAS ALWAYS BEEN AN island of learning in a sea of rolling farmland and prairie grass. University life has nurtured talented students such as playwright Tennessee Williams. Faculty teaching and research have been helping Missouri and the world since before cowboys and cattle drives. Students and faculty alike have mingled with the most inventive scientific minds of their times, from Thomas Edison to Marie Curie.

Although much has changed since students first stepped on campus in 1839, much remains the same. MU is still an opening in the prairie, maintaining its traditional role as an incubator of invention. Here are a handful of MU's high points of achievement through the years.

OF COWBOYS AND CATTLE

By 1866, Southwest Missouri farmers were fed up. They loaded their rifles and took the law into their own hands. Meeting Texas cowboys at the border, the farmers stampeded, stole or shot the intruders' cattle, and they beat, lynched or drove the cowboys back into Indian territory.

Why the violence? The Civil War was over. Texas cowboys were hoping to profit from high cattle prices by driving hundreds of thousands of longhorns north for

shipping. Problem was, besides gobbling up all the grass, a similar drive eight years earlier had brought Texas fever, which cost hundreds of thousands of dollars in lost livestock. The Missouri farmers weren't about to let that happen again, and their terrorist tactics pushed the cowboys to bypass the state.

MU entomologists took a more civilized approach, establishing in 1893 that the cattle tick carried the disease. They eventually eradicated it through studies of the tick's habits and movement at the MU Agricultural Experiment Station.

MU entomologists attacked other agricultural plagues with equal vigor. C.V. Riley figured out that the piercing and sucking phylloxera insect was killing French grapevines in the 1870s. He grafted French vines onto resistant Missouri root stock to save the crop, and the French wine producers made him a Hero of France.

THOMAS EDISON'S DYNAMO

Back when electricity was virgin territory, Thomas Edison was attracted to the spirit of invention at MU. Edison donated a dynamo and incandescent lamps in 1882 to jump-start the first electrical engineering program west of the Mississippi, formally established three years later under Professor Benjamin Thomas. The new-fangled electrical gadgetry was set up in Academic Hall, making it the first major public building west of the Mississippi to be electrically lit. Rumor has it, however, that this electrical work eventually failed, causing the fire that burned down the building.

Samuel Laws, who later became president of the University, may have been the key to Edison's relationship with MU. Laws invented the stock ticker machine in 1863 in New York, and his then-assistant, Thomas Edison, perfected it.

The College of Engineering's technological breakthroughs have come at some opportune times. Just before World War II, Professor Don Waidelich developed the steady state transform mathematical formula that was the foundation of radar, a key technology the Nazis didn't have. When Waidelich, now professor emeritus, developed the formula in the 1930s to study repeating electronic patterns, the government saw its potential for inter-

preting radar and sonar signals. After the war, the formula was adopted all over the world.

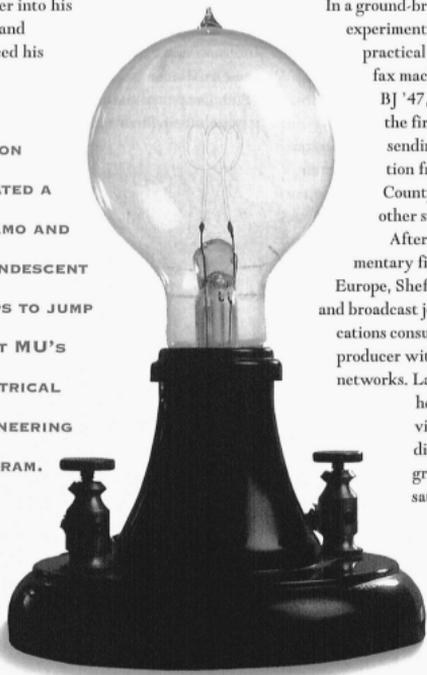
CONSPICUOUS COINAGE

Long before the masses drooled at the excesses seen on *Lifestyles of the Rich and Famous*, MU's famed scholar Thorstein Veblen was attacking the conspicuous consumption of the robber barons of his day.

Veblen coined the term conspicuous consumption in his 1899 ground-breaking book, *Theory of the Leisure Class*, which attacked predatory capitalism. This free-thinker and socialist, who liked to shake up the status quo, caused a stir when he joined MU's economics department in 1911.

Veblen came to Mizzou after his 1909 resignation from Stanford University, reputedly because he had taken a female admirer into his home and divorced his wife.

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Several years earlier, he left the University of Chicago after its administration worried that his attacks on capitalism would anger the university's chief benefactors, the Rockefellers. But Veblen quickly boosted the MU economics department to an outstanding scholarly reputation.

Veblen wrote several important books before leaving Mizzou in 1918 to join Herbert Hoover's national food administration. True to form, he was later driven to resign because he supported the Bolshevik Revolution in Russia. He then wrote *Higher Learning in America*, a famous satirical analysis of modern higher education, took over as editor of the left-wing journal *The Dial*, and founded the New School for Social Research in New York.

GET YOUR FAX PAPER HERE

In a ground-breaking 1949 experiment demonstrating the practical application of the fax machine, David Shefrin, BJ '47, MA '49, distributed the first fax newspaper, sending financial information from campus to Boone County National Bank and other sites in town.

After working as a documentary film maker in post-war Europe, Shefrin became a print and broadcast journalist, communications consultant and multimedia producer with the three major networks. Later at IBM, he helped develop the videocassette, laser disc, digital video programming and IBM's satellite information network.

Shefrin was a product of the unique blend of theoretical explanation



MU'S CLIFTON
EDOM IS THE
FATHER OF
PHOTOJOURNALISM.

and practical experience taught at the MU School of Journalism. The world-famous Missouri Method kindled a spark of creativity in many a student. Founded in 1908, the school was first of its kind in the world. Its faculty have included Clifton Edom, the father of photojournalism, and Walter Williams, whose Journalist's Creed is the benchmark by which later journalists have measured their ethical systems.

The *Columbia Missourian* is the first and only commercial daily newspaper with a student staff, and KOMU-TV is the first and only university-owned commercial network television station in the country. The school is also the home of the Freedom of Information Center, which is the only national research center that reports on government, news media and societal actions affecting the flow of information throughout the world.

OLD TEXTS AND NEW TALENT

"A writer is a fisherman of the deep, with old, partially useful nets," Jack Kerouac said in a letter to his friend Ed White, first published in the *Missouri Review*. The magazine has hooked new readers by discovering talented writers and unpublished texts by literary giants.

Named one of the "mighty oaks" of publishing by *Esquire* magazine, the *Missouri Review* has tripled its readership over the last five years to achieve the highest circulation among U.S. university-based literary magazines.

The *Review* has lately discovered the likes of E.C. Hinesy and Talvikki Ansel, 1995 and 1996 winners of the Yale Younger Poet award, the nation's most prestigious award for emerging poets. The magazine also gained national attention by publishing selections from the Dead Sea Scrolls and previously unknown works by Mark Twain, William Faulkner and Tennessee Williams. *Journ '32*, DHL '69. Recently, critical praise came from the Mark Twain Forum for publishing Twain's play, *Colonel Sellers*, called the best unpublished Twain text this century.

The comedy chronicles the get-rich-quick schemes of Mulberry Sellers, including the "humanitarian" sale of his worthless land in Tennessee to the government for \$3 million to start a college. "How shall the nation become possessed of this noble domain?" Sellers asks. "Let Congress buy it!"

PUT THIS IN YOUR PIPE

Even the most ardent non-smoker would find it difficult to disdain the corncob pipe, made from the Missouri Meerscham corn variety. Along with the Missouri mule, it's one of the state's enduring symbols.

In the 1940s, however, Missouri farmers saw that the strain was weakening. The cobs were growing too soft. If the

problem continued, the world-leading Missouri corncob pipe industry would soon be extinct.

MU geneticist Marcus Zuber came to the rescue in the 1950s and 1960s, developing hard-

cob corn varieties. He also

released a corn line that became the parent of hybrids accounting for about one-seventh of all the corn grown in the United States. That was just part of a long line of MU contributions in genetics.

In 1927, L.J. Stadler discovered that radiation would multiply mutations in plants, a breakthrough that led to faster development of new varieties. Barbara McClintock, DS '68, whose discovery that genetic elements could migrate within the genome—first presented officially in 1951—would gain her a 1983 Nobel Prize, was a Mizzou

faculty member for five years. She then transferred to the Carnegie Institution of Washington's Cold Spring Harbor research laboratory.

MU wheat geneticist E.R. Sears' research in the 1950s developed techniques to transfer genes from wild grasses to cultivated wheat for disease resistance. His wife, Lotti Sears, an established geneticist in her own right, played a major role in determining the genetic structure of wheat.

Research in the 1920s by W.C. Etheridge, Charles Helm, L.F. Williams and J. Ross Fleetwood, BS Ag '21, MA '24, introduced soybeans to Missouri, and experiments in the 1980s by Sam Anand at the Delta Center

near Portageville, Mo., led to the development of varieties resistant to the cyst nematode, a microscopic roundworm that causes millions of dollars in damage to the nation's crop each year.

And MU's genetic advances weren't limited to plants. In 1987 Ronald Sprouse and Harold Garner genetically engineered the endobactoid vaccine, now being adapted for human application, to prevent colic, a leading cause of death in horses. In the future, Randall Prather's research into the cloning of swine may lead to the use of pig-to-human organ transplants.

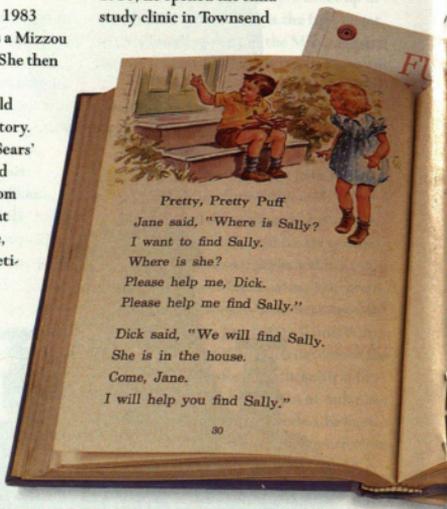
WHERE IS DICK? WHERE IS JANE?

Dick and Jane made learning to read fun for a generation. In the 1940s, education Professor Sterl Artley helped pioneer the Dick and Jane series, which roughly paralleled the elementary grade levels. In 1985, *Esquire* columnist Bob Greene called him "probably the most widely read author writing in English."

The president and a founder of the International Reading Association, Artley came to Mizzou in 1946. In 1950, he opened the child study clinic in Townsend



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Hall, one of the first of its kind in the country. Artley was a pioneer in the field of reading remediation. He promoted a then-new holistic approach to education and child development that focused attention on the overall reasons for a child's reading difficulties rather than concentrating only on the reading problem itself.

THIS MAGNET MAKES CARS GO

One day in 1983, General Motors gave MU nuclear scientist Bill Yelon a bag of magnetic powder it had created by accident and asked him to find out what it was. Based on Yelon's work, GM developed a magnetic substance called MagneQuench, which has cut by half the weight of the automaker's electric motors.

Using neutron diffraction at MU's research reactor, Yelon studied its composition and properties, refined it and duplicated it. He found it was composed of iron, neodymium and boron and found that it could form a lightweight, brittle electromagnet. Before it was discovered, only rare and expensive elements such as cobalt could be used to make the magnets.

The reactor also has developed several

important radiopharmaceuticals to relieve the pain of bone cancer. These include rhenium-186 and samarium-153 as well as inventions such as theraspheres, which are biodegradable balls that target a dose of radiation to a specific tumor while limiting damage to nearby healthy tissue.

MUSEUM WORTHY

Alongside Dorothy's ruby slippers and the original Star-Spangled Banner, a small pile of dirt from Sanborn Field rests on the Smithsonian Institution's shelves.

A 1945 sample from Plot 23, collected by MU soils department chairman William Albrecht, Grad '19, provided the golden mold used to make the penicillin-like wonder drug aureomycin.

Albrecht collected the sample for his friend and former MU colleague Benjamin Duggar, a botanist at American Cyanamid's Lederle Laboratories.

The eight-acre field located at the corner of College Avenue and Rollins Road in Columbia is the oldest experimental field west of the Mississippi and a national landmark. But it's not the only famous

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**HUGH STEPHENSON
DEVELOPED THE
FIRST CARDIAC
CRASH CART.**



MU field. The first soil erosion experiments in the nation were performed at the Duley-Miller soil erosion plots on the southeast side of University Hospital. The experiments formed the basis for the Soil Conservation Service's national program.

I NEED THE CRASH CART— STAT!

Where would TV doctor dramas such as *ER* be without the crash cart developed by physician Hugh Stephenson Jr.?

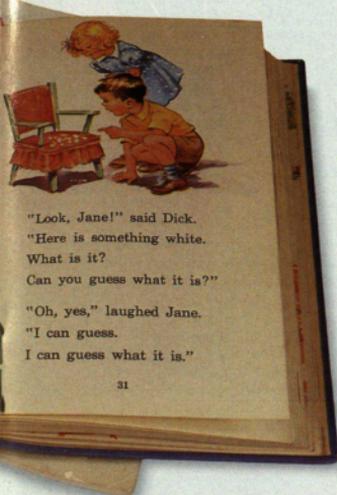
Built in 1950 during an internship at New York University, the first crash cart included a cardiac defibrillator, which could deliver an electric shock directly to the heart to restore effective beating.

Stephenson, AB '43, BS Med '43, professor emeritus of surgery, also developed the first course in cardiopulmonary resuscitation for physicians. His textbook, *Cardiac Arrest and Resuscitation*, first published in 1958, is in its fourth edition.

TOWARD THE FUTURE

What might the future hold? One glimpse of its possibilities may have come this fall when MU launched what may be the first virtual reality classroom in the nation.

Whatever changes the future may bring, the University's use of knowledge to improve our quality of life is sure to continue. ☉



"Look, Jane!" said Dick.
"Here is something white.
What is it?
Can you guess what it is?"
"Oh, yes," laughed Jane.
"I can guess.
I can guess what it is."

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