



**FOR IMMEDIATE RELEASE**

September 24, 2009

Alden B. Dow Museum of Science and Art presents:

**What: EXHIBIT: Einstein**

**When:** August 8, 2009 through December 6, 2009

**Where:** Alden B. Dow Museum of Science & Art at  
Midland Center for the Arts, 1801 W. St. Andrews Rd., Midland, MI 48640

**Cost: \$8 adults/\$5 children 14 and under/ Free for museum members**

**Information:** Call Ticket Office at (989) 631-8250 or (800) 523-7649 or [www.mcfta.org](http://www.mcfta.org)

MIDLAND, MI - His face is instantly recognizable; his name a synonym for "genius." Not since Galileo and Newton has one scientist so advanced our understanding of the universe as Albert Einstein (1879-1955). *Einstein*, a comprehensive exhibition that celebrates the life and theories of one of the greatest scientists of all time opens at the Alden B. Dow Museum of Science and Art at Midland Center for the Arts on August 8, 2009, and remains on view through December 6, 2009. Admission costs \$8 for adults, \$5 for students and is free for museum members. Tickets and more information are available by contacting the Ticket Office at 800-523-7649 or online at [www.mcfta.org](http://www.mcfta.org).

This absorbing exhibition brings together cutting-edge interactive exhibits that animate Albert Einstein's most revolutionary theories; videos about Einstein's life, science, and legacy; hands-on activities and a learning lab; and facsimiles of his manuscripts and personal letters. Visitors are introduced to a fresh perspective on Einstein, an extraordinary genius whose achievements were so substantial and groundbreaking that all our lives have been affected by his ideas.

A series of special events are being planned to supplement the exhibit, including family-friendly workshops and presentations by guest speakers. Details are still being finalized and will be announced soon.

"As the world headquarters to both The Dow Chemical Company and Dow Corning Corporation, there could be no better science town to host this revealing exhibition of Einstein's paramount

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contributions to scientific exploration and discovery,” said Bruce Winslow, director of the Alden B. Dow Museum.

The exhibition explores the legacy of Einstein, not only as a scientific genius who reconfigured our concepts of space and time, but also as a complex man actively engaged in the social and political issues of his era. *Einstein* also examines the phenomenon of his fame and his enduring status as a global icon whose likeness has become virtually synonymous with genius.

“Through this exhibition visitors will finally understand the pivotal role Einstein played in our modern understanding of the universe and its complex mysteries,” Winslow said. “This will be their ‘aha’ moment in perceiving his brilliance, and their arrival at finally knowing the broad impact of Einstein’s startling capacity for visualizing the miracles of the universe.”

The exhibition brings to life many of Einstein’s most astonishing visions of the universe—light’s constant speed, time as the fourth dimension, and space-time as a curved geometry—while at the same time revealing his passion for social justice and his speaking out against segregation, anti-Semitism, McCarthyism, and nuclear armament.

## **The Exhibition**

Einstein is divided into the following sections:

- **Einstein’s Revolution**—Visitors are introduced to how radically Albert Einstein’s work in physics reconfigured our modern understanding of the universe. In 1919, Einstein shot to international fame when British astronomers observing a solar eclipse confirmed one of the most astonishing predictions of his General Theory of Relativity: that the Sun’s gravity deflects light from distant stars. The classic Newtonian view of gravity as a simple force between objects was overthrown by Einstein’s vision of gravity as the result of objects warping space-time. A large video installation graphically simulates this by distorting the images of visitors by the imaginary gravity of a projected black hole.
- **Life and Times**—This section traces Einstein’s personal life, from his birth in Germany in 1879 to his passionate and often chaotic adult life. Einstein’s life was punctuated with love affairs, one of which led to his second marriage to his cousin, Elsa Loewenthal. On display in this section include a facsimile of Einstein’s high school report card, which shows excellent grades in physics and algebra, and a hand-cast replica of his 1921 Nobel Prize for Physics. A short video, narrated by Emmy Award-winning television, film, and stage actor Alan Alda, familiarizes visitors with Einstein’s life and accomplishments and introduces some basic physics concepts encountered in the exhibition.

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- **Light**—A kinetic light sculpture using innovative LED technology to create moving light patterns helps visitors visualize Einstein’s most revolutionary theories on the nature of light. This section introduces visitors to the late 19th-century notion of light as a wave moving through mysterious “ether.” In 1905, Einstein upset this widely accepted notion when he published his Special Theory of Relativity, which recognizes the speed of light as a universal constant (regardless of the observer’s frame of reference), and proposes that space and time are relative and not absolute.
- **Time**—A tremendous wall display of digital clocks, each ticking off the seconds, hours, and days at a different rate, graphically illustrates Einstein’s radical understanding that the length of any interval of time varies according to how fast the “clock” and the observer are moving. Specifically, the closer a traveler gets to the speed of light, the slower time passes as measured by an outside observer. In Einstein’s universe time travel to the future is a real possibility, and this is lightheartedly underscored with clips from several well-known science fiction movies.
- **Energy**—As a startling postscript to his Special Theory of Relativity, Einstein realized that energy and mass are intimately related. It is this discovery—that mass can be converted to energy and energy to mass—that is expressed in perhaps the most famous mathematical equation ever written:  $E=mc^2$ . Visitors can delve deeper into the reasoning behind the formula by touching individual components of the equation on an interactive “blackboard.” Graphic panels reveal the difference between fusion (combining two atomic nuclei to produce a heavier nucleus) and fission (splitting an atomic nucleus) as methods of releasing tremendous energy.
- **Gravity**—Visitors follow Einstein’s steps as he reconsiders gravity not as a force but as the effect of massive objects warping space-time (space is conceived of having four dimensions: length, width, height, and time). It is this discovery—that mass tells space-time how to curve, and curved space-time tells mass how to move—that forms the basis of Einstein’s General Theory of Relativity. On an interactive wall, visitors see the mass of their own bodies warping the images on the screen, just as a bowling ball bends the fabric of a trampoline. The closer visitors are to the screen, the greater the distortion. Visitors can also increase or decrease the space-time-distorting powers of a black hole (an astronomical phenomenon predicted by Einstein’s theory) by changing variables on a computer simulation.
- **Einstein in Peace and War**—This section explores Einstein as a complex political figure and a lifelong pacifist whose convictions were painfully reshaped in the horrifying years leading up to World War II. Einstein wrote a letter to President Roosevelt on August 2, 1939, warning him that “it may become possible to set up a nuclear chain reaction in a large mass of uranium” and that the Nazis might be using uranium to build a nuclear bomb. He urged Roosevelt to pursue research into how the U.S. could build the bomb first. Later, Einstein regretted his involvement and spent the rest of his life advocating an end to nuclear weapons.

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- **Global Citizen**—Einstein used his worldwide fame to advocate for his deeply held political beliefs. Letters on display show that he was a passionate humanitarian who spoke out against segregation, anti-Semitism, McCarthyism, and nuclear armament. He was also a dedicated Zionist who campaigned for the establishment of a Jewish homeland in the Middle East while also pleading for cooperation between Jews and Arabs. Einstein always made time to reply to the many letters he received from children all over the world. Several examples of this charming and humorous correspondence are featured on graphic panels in this section.
- **Learning Lab**—This lab offers visitors and school groups a hands-on opportunity to experiment with many of the physics concepts presented throughout the exhibition. Museum laboratory instructors and specially trained Einstein explainers are available to help visitors try out a variety of experiments that link Einstein’s work to the latest technology and cutting-edge scientific research, including transmitting sound via laser light and tracing the ghostly tracks of cosmic rays traveling at nearly the speed of light through a cloud chamber.
- **Einstein’s Legacy**—In the last decades of his life in Princeton, New Jersey, Einstein searched for a “theory of everything,” a single principle underpinning the entire universe and describing all physical phenomena from the smallest atomic particle to the largest galaxy. This “Grand Unified Theory” eluded him, but the search for such a theory remains one of the hottest topics in physics today. Videotaped interviews with some of today’s leading physicists, including S. James Gates, Professor of Physics at the University of Maryland; Kip Thorne, Feynman Professor of Theoretical Physics at the California Institute of Technology; Alan Lightman, Adjunct Professor of Humanities at the Massachusetts Institute of Technology and author of Einstein’s Dreams; and Vera Cooper Rubin, Senior Researcher at Carnegie Institute’s Department of Terrestrial Magnetism, reveal the lasting impact of Einstein as a role model for scientists all over the world.

## **Organization**

Einstein is organized by the American Museum of Natural History, New York; The Hebrew University of Jerusalem; and the Skirball Cultural Center in Los Angeles.

## **Support**

This tour of Einstein is made possible by TIAA-CREF. In Midland, Einstein is sponsored by The Dow Chemical Company and Dow Corning Corporation. Media sponsor is Citadel Broadcasting.

## **American Museum of Natural History**

The American Museum of Natural History is one of the world’s preeminent scientific, educational, and cultural institutions. Since its founding in 1869, the Museum has advanced its global mission to discover, interpret, and disseminate information about human cultures, the natural world, and

the universe through a wide-reaching program of scientific research, education, and exhibitions. The institution comprises 45 permanent exhibition halls, state-of-the-art research laboratories, one of the largest natural history libraries in the Western Hemisphere, and a permanent collection of 30 million specimens and cultural artifacts. The Museum supports research divisions in Anthropology, Paleontology, Invertebrate and Vertebrate Zoology, and the Physical Sciences and shares its treasures and discoveries with approximately five million on-site visitors from around the globe each year. In addition, the Museum's Web site, [www.amnh.org](http://www.amnh.org), extends its collections, exhibitions, and educational programs to millions more beyond the Museum's walls.

### **The Hebrew University of Jerusalem**

The Hebrew University of Jerusalem, Israel's first university and a symbol of the cultural rebirth of the Jewish nation in its ancestral homeland, is a multidisciplinary institution of higher learning and research. It has become a scientific center of international repute, with formal and informal ties extending to and from the worldwide scientific and academic community. Since its inauguration in 1925, The Hebrew University has grown from three modest institutes of Jewish Studies, Microbiology, and Chemistry to an internationally renowned institution offering academic programs in a wide variety of disciplines, from the humanities and social sciences to medicine, agriculture, and computer science. The Hebrew University's Web site is [www.huji.ac.il](http://www.huji.ac.il).

### **Skirball Cultural Center, Los Angeles**

The Skirball Cultural Center is dedicated to exploring the connections between four thousand years of Jewish heritage and the vitality of American democratic ideals. The Skirball's 15-acre campus opened to the public in 1996. Since then, it has welcomed more than three million visitors. Every week the Skirball is host to a diverse range of music, theater, dance, film, family programs, and distinguished speakers from all over the world. The Skirball's Web site is [www.skirball.org](http://www.skirball.org).

### **Upcoming Exhibits** at the Alden B. Dow Museum of Science & Art:

ALDEN B. DOW MUSEUM SCHOOL FACULTY & STUDENT EXHIBITION  
August 22 – September 26, 2009

PAREIDOLIA: New Ceramic Works by James Freeman  
October 17, 2009 – January 3, 2010  
Ceramics by the winner of the 2007 Greater Michigan Art Exhibition Solo Exhibition Award.

49TH ANNUAL GREATER MICHIGAN ART EXHIBITION  
October 17, 2009 - January 3, 2010  
One of the few remaining statewide juried exhibitions.

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WATERWORKS- Soak Up the Science!

January 23, 2010 - April 25, 2010

Explore the physical properties of water, the harnessing the power of water, and water's role in our everyday lives.

## Hours

**Summer Museum Hours** (through September 7, 2009)

Wednesday – Saturday: 10 am to 4 pm

Open until 6 pm on Thursdays

CLOSED SUNDAYS, MONDAYS, TUESDAYS & MAJOR HOLIDAYS

**Regular Museum Hours** (beginning September 8, 2009)

Wednesday – Saturday: 10 am to 4 pm

Open until 6 pm on Thursdays

Sunday: 1 pm to 5 pm

CLOSED MONDAYS, TUESDAYS & MAJOR HOLIDAYS

## Admission

Tickets to *Einstein*, which include museum admission, are \$8 for adults, \$5 for students, and free for museum members. Tickets can be purchased in advance by calling 800-523-7649, or visiting [www.mcfta.org](http://www.mcfta.org).

## Public Information

For additional information, the public may call 800-523-7649 or visit the museum's Web site at [www.mcfta.org](http://www.mcfta.org).

**The Alden B. Dow Museum of Science and Art (ABDM)** celebrates discovery, creativity and individual expression through art, science and the interplay between them. Exhibitions in the Museum, classes at the Museum School, multiple outreach programs, a permanent collection and various special events are all components in the ABDM programming.

**Midland Center for the Arts, Inc.** is a non-profit, tax-exempt corporation formed under the laws of the State of Michigan incorporating six groups: Alden B. Dow Museum of Science and Art, MATRIX:MIDLAND, Midland County Historical Society, Midland Symphony Orchestra, Music Society and Theatre Guild. Activities at Midland Center for the Arts are supported in part by the Michigan Council for Arts and Cultural Affairs, a partner agency of the National Endowment for the Arts. For the latest Center news, visit our web site at [www.mcfta.org](http://www.mcfta.org).

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