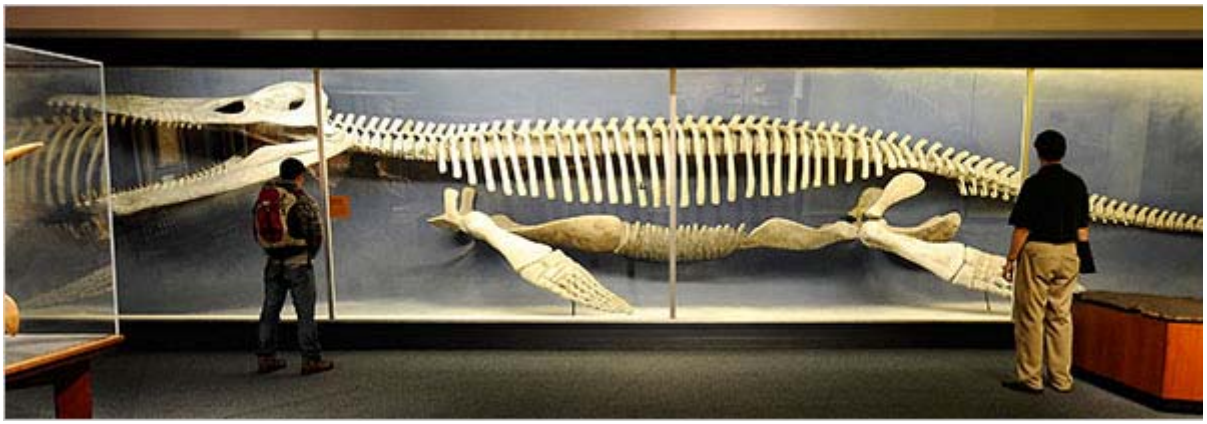
AMERICAN JOURNEYS | BOSTON

A Science Lover's Kind of Town



CJ Gunther for The New York Times

OLD TO NEW The Harvard Museum of Natural History displays ancient bones and generates lightning bolts.

By ETHAN GILSDORF
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WHEN you run an ice cream parlor down the street from the Massachusetts Institute of Technology, you expect your customers to chat about stem cell research or trade theories about neutrinos between licks of burnt caramel. But Gus Rancatore, whose Toscanini's shop in Cambridge, Mass., is renowned as much for its deep-thinking clientele as for its sundaes, discovered long ago that catering to the technology-minded crowd could have unforeseen advantages.

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One day, two M.I.T. students who were "working in superconductors," Mr. Rancatore said, took a good look at his ice cream machine, visible through his

transformed its inefficient gear-drive mechanism into a lean, mean, belt-driven machine. That was 23 years ago. “We still use the machine,” Mr. Rancatore said. “Another generation of M.I.T. engineers just tuned it up this summer.”

In metropolitan Boston, including Cambridge, home of Harvard and M.I.T., and the technology corridor out on Route 128, the story is amusing, but not particularly surprising. At least since the early 1700s, when its cutting-edge physicians first offered smallpox inoculations, Boston has been a leader in sciences both theoretical and applied. Today, it’s still a town for science lovers, and the mood can be either serious or playful. If you’re the kind of person whose idea of fun is probing the structure of DNA or designing a faster toy bobsled, Boston is an inspiring place to spend a few days.

An essential stop on the science circuit is the MIT Museum, on Massachusetts Avenue a block or so from M.I.T.’s nuclear reactor. Recently expanded to 15,000 square feet of floor space (a 5,000-square-foot addition opened just over a year ago), the museum features invitingly devised rotating exhibits on new M.I.T. research, as well as permanent exhibits.

One day last month, some visitors examined prototype parts for stackable urban cars, which looked more like shopping carts than vehicles, while others walked slowly backward at the “Eight Einsteins” exhibit. As they moved, “hybrid illusions” of faces of Einstein morphed into Freud, Madonna and John Lennon before their eyes. Created by Aude Oliva, a cognitive science professor, and her colleagues, the images are helping researchers learn more about visual cognition and how the brain functions.

Hanging from the ceiling in one corner were M.I.T.-designed submersible vehicles — made to move on their own in deep-ocean areas too dangerous for divers — including Jason Junior, the one that snooped around the wreck of the Titanic. Upstairs, permanent exhibits demonstrated the institute’s more established work in robotics, voice recognition and DNA research. Prof. Harold Edgerton’s groundbreaking stroboscopic photography is on display there; you’ll probably recognize his famous bullet-through-the-apple shot.

Fiddle with the “Remarkable Double Piddler Hydraulic Happening Machine,” which uses a strobe light to deconstruct a water stream into individual droplets. Or examine the displays chronicling M.I.T.’s work on radar in World War II and navigational systems for the Apollo space missions. There’s also a video of the annual mechanical engineering

Multimedia

Slide Show

Boston's Science Circuit

Map

Boston

The museum also owns hundreds of 3-D holograms, the largest and most extensive collection in the world, said Seth Riskin, curator of a new juried exhibit called "Luminous Windows: Holograms for the 21st Century" (running Dec. 5 through March). The show will feature six large-scale holograms from international artists, some as tall as five feet, to be displayed in the museum's ground-floor windows and facing outward, visible to nighttime passersby. Two dozen smaller holograms — from a portrait of Keith Haring to images of brains and a coal molecule — are part of the permanent exhibit.

While the MIT Museum's character is tranquil and contemplative, the justly renowned Boston Museum of Science can seem like pandemonium, especially on weekends. There are literally hundreds of interactive and informational displays and kiosks on dozens of topics: optics, reproduction, computers, live butterflies, remote sensing and much more. A rare Triceratops skeleton recently became the latest permanent exhibit. The exhibits are arranged helter-skelter in three confusing wings over three levels. Plunge right in anyway — this stop, too, is obligatory — but focus and pace yourself.

You can learn how radiology, wind turbines and biomethane digesters work. To please "Star Wars" fans, a full-scale model Naboo N-1 Starfighter, from "The Phantom Menace," dangles from the ceiling beside real spaceships from a galaxy not so far, far away.

At Galileo's Drop Stop, test for yourself whether different masses fall at the same rate. An exhibit called Mathematica, created by Charles and Ray Eames, explains concepts like celestial mechanics, probability and the Zeta Function (don't ask) with endearing circa-1961 models and falling plastic balls. Teaching moments are everywhere: the men's rooms have signs explaining how the infrared sink technology works.

For the biggest "wow" factor (aside from the IMAX movies and planetarium shows, at least) visit the Theater of Electricity and its Van de Graaff generators and Tesla coils. "We need people who are particularly full of electric charge," joked Diana DeLuca, a program coordinator who made one volunteer's hair stand on end, much to the delight of the audience. The show got better: a supersize Van de Graaff generator crackled with one million volts and created a shockingly beautiful indoor lightning show.

"A lot of the presenters here have math and engineering degrees," Ms. DeLuca said.

The generators came to the museum from M.I.T., where their inventor, Dr. Robert Van de Graaff, taught physics — one example of the ways the area's dozens of universities and research labs have infused Boston with innovation. Faculty members at Harvard and M.I.T. alone have racked up 49 Nobel Prizes in the sciences. The microwave, the safety razor, the instant camera and the video game were all invented in the Boston area. All around town, there are places to trace some of this legacy.

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