What your MITID can do for you Exploring the artsy side of Boston

By Grace Young and Angelique Nehmzow ARTS EDITORS

Your MIT ID can get you free or heavily discounted admission to nearby arts venues. The Council for the Arts at MIT gifts these memberships and discounts as a way to greaten students' exposure to and appreciation for the arts. The following is a list of the places where you can flash your card. In addition, you can use it to check out museum passes from Hayden Library for guests in town.

So, even if you're excited about classes and all the activities taking place on campus, don't forget the whole of Boston and Cambridge is right at our doorstep, and is well worth exploring!

Museum of Fine Arts (MFA)

If you only go to one place on this list, go to the MFA! Your MIT ID gets you in for free. The museum houses a fantastic permanent collection of drawings, paintings, photographs, sculptures, furniture, and more, dating from ancient Egypt to the present era, from all around the world. You won't be able to see everything in one day; honestly, you could spend an entire year there.

The MFA also has well-curated temporary exhibitions, so there's always something new to see, and they also offer film screenings, concerts, and lectures. As a bonus, there are three quaint cafes in the museum, perfect for meeting with friends or catching up on a reading assignment.

Isabella Stewart Gardner Museum

Again, your MIT ID gets you in for free. This unique museum, built to emulate a 15thcentury Venetian palace, hasn't changed since opening in 1903, at the dying request of its founder, art collector and philanthropist Isabella Stewart Gardner.

The "old" wing features paintings, sculptures, and tapestries from the Renaissance through early 20th century, while the "new" modern wing houses special exhibits and a cute restaurant. "Gardner After Hours" is a fun time to visit, when the museum stays open late and has events geared towards young adults.

Fun fact: The museum is infamous for a 1990 break-in, where thieves disguised as police officers stole thirteen paintings.

Institute of Contemporary Art (ICA)

You'll get in free! You should expect to see some bizarre works at this place, but it's worth a visit for those who can handle modern art. The museum has a performance center with windows overlooking the harbor — so even if a performance is a bit "out-there," you can appreciate the view.

Boston Symphony Orchestra (BSO)

This one isn't free, but the fee is more like a token of appreciation. For just \$5 you can get tickets to as many BSO performances as you want!

First, you need to buy the \$5 BSO College Card, which is valid for the year, and which is available at the BSO Ticket Office, and at MIT Copytech in the basement of Building 11 (11-003). Then, pick up your ticket from the box office the week of the performance you want to see. Beware, some performances won't let you use the College Card, but most do. Also, the card will only get you one ticket — if you want to go with a friend and get seats together you have to go pick up tickets together.

Generally, it's a good idea to call before venturing to the box office (at 301 Mass. Ave, Boston, a short walk over the bridge), because sometimes they sell out of the tickets reserved for College Card holders.

Photographic Resource Center

This is an independent non-profit organization at Boston University, and — you guessed it — MIT students can get in for free. It showcases a new photography exhibit every few months. The current exhibit is on the identity and photographic portrait. MIT students are also eligible to participate in their annual exhibition.



The exterior of the Art of the Americas Wing at the Museum of Fine Arts.

Harvard Art Museum

The museum is fantastic, but closed until fall 2014 for renovations.

Radius Ensemble

The ensemble puts on an eclectic concert about twice a semester in Harvard Square, and MIT students can get free tickets. On Oct. 5, they will play a mix of pieces for flute, oboe, viola, cello, harp, clarinet, and cello. On Nov. 23, the ensemble will be playing Czech-classical music fusion and jazz-classical fusion.

The Catalyst Collaborative at the Central Square Theater

MIT students get discounted tickets to performances by the collaborative, which aims to present science to the public through the theater. Their next show, *Silia*, on show in April and May, is about a climatologist, an Inuit activist, and two polar bears struggling to adapt to the rapidly changing environment.

Boston Chamber Music Society (BCMS)

MIT students get free or discounted tickets to BCMS performances. BCMS performs classical masterpieces, either at the Sanders Theater on Sunday nights in Harvard Square, or at MIT's Kresge Auditorium in December and January.

Boston Modern Orchestra Project (BMOP)

This group performs exclusively new music, but is otherwise fairly mysterious. They will have performances this November, January, and May, but further details on the group and tickets haven't been released yet.

The MIT Museum

Last but not least, your MIT ID gives you access to MIT's own museum, which is just up Mass. Ave. The MIT Museum houses interesting exhibitions about MIT's history and ongoing research, particularly related to artificial intelligence, and has an awesome collection holograms and kinetic sculptures. Its temporary exhibits tend towards the robotic, technological, and photographic. The next exhibit is *Stanley Greenberg: Time Machines*, which opens on Sept. 13.

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EXHIBIT REVIEW An ethereal silken globe The Silk Pavilion of the Mediated Matter group at the MIT Media Lab

By Kristen Sunter

The Silk Pavilion is a gauzy hemisphere of sparse silk threads, with apertures arranged in an asymmetric but balanced pattern and many small, dense, circular patches of silk filaments that were spun directly onto it by live silkworms. The scaffold is composed of several panels with irregular patterns of silk thread to support the silk spun by Bombyx mori, the most widely cultivated species of silkworm.

Suspended in the lobby of the Media Lab (E14) until the middle or end of September, the Silk Pavilion was made by the Media Lab's Mediated Matter group, consisting of Markus Kayser, Jared Laucks, Carlos David Gonzales Uribe, and Jorge Duro-Royo and led by Dr. Neri Oxman. The project was developed in collaboration with Professor Fiorenzo Omenetto (Tufts University) and Dr. James Weaver (Wyss Institute for Biologically Inspired Engineering at Harvard University).

To build the Silk Pavilion, 6500 silkworms were placed at the bottom of the thread scaffold, which was laid out by a computer-numerically controlled (CNC) ma-

chine and assembled in the lobby of E14, where it is now on display. The silkworms were placed on the scaffold over a ten-day period, during which each silkworm spun for three days, which is their normal spinning behavior. The silkworms did not create cocoons, but rather locally reinforced the gaps in the scaffold with their non-woven silk structure.

The trajectories of the silkworms were affected by the layout of the threads and possibly by the variation in natural light and heat, which led them to move from the lower edge where they were placed towards the top of the dome. The holes in the dome were positioned to capture sunlight from the east and south and allowed the limits of the ability of silkworms to cover holes to be tested. The result is a dome of sparse, thicker threads that appears to be lightly covered with patches of silk filaments of varying density.

The research behind the Silk Pavilion began in September 2012 with several small experiments on silkworm spinning behavior, to determine whether the worms optimized their spun structure to follow lines of tension, and to study the geometry and reach of their silk. The results of these platform spinning experiments can be seen on display to the south of the Silk Pavilion, and were considered when the final scaffold of the Silk Pavilion was modeled. The development of the final project began in February 2013, and the scaffolding, CNC weaving, assembly, and silkworm placement lasted until early April.

Although the Silk Pavilion was initially meant to explore the possibility of fiber-based construction on a large scale, other aspects of the research became apparent. For example, silk production does not currently allow the use of the silkworm/moth lifecycle — the pupae are killed when their cocoons are immersed in hot water to free the silk filaments. However, the silkworms that spun the Silk Pavilion were allowed to pupate, and the pupae could be removed without killing them.

The Silk Pavilion is not the first work of art to rely on insects for construction. Steven Kutcher, an entomologist who once created a scene for Steven Spielberg involving flies walking through ink and leaving prints, made a series of paintings with insects such as



A Bombyx mori silkworm deposits silk fiber on a digitally-fabricated scaffolding structure.

beetles walking on paper with paint on their legs. Earlier, in the 1980's, French artist Hubert Duprat used caddisfly larvae to create jewelrylike art. Caddisfly larvae naturally use materials found in their habitat, such as pieces of wood, to construct protective tubes around themselves. Duprat placed caddisfly larvae in tanks with flakes of gold and precious and semiprecious stones with which they created ornate gold tubes.

The silkworm research will continue with further experiments. "We are always looking at new or different biological systems that we might be able to work together with as a more collaborative process as science and technology are merging," said Jared Laucks G, a member of the Mediated Matter group. Future research in the Mediated Matter group will also focus on "swarm printing".



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