

MIT-SUTD Collaboration / International Design Center

MIT-SUTD Collaboration Overview

The [MIT-SUTD Collaboration](#), which builds on more than a decade of MIT education and research activities in Singapore, is to date the largest and most complex university capacity-building endeavor in MIT's history. Founded in 2009 through a partnership between MIT and Singapore's government, the MIT-SUTD Collaboration was established to promote better exchange of information between MIT and the Singapore University of Technology and Design (SUTD). This collaboration is multifaceted and has included the development and offering of curriculum, establishment of the major co-located research center, and recruitment and professional development of SUTD's university leadership team and faculty.

As indicated in last year's report, AY2017 marked the official end of the seven-year education component of the collaboration agreement, although some wind-down activities continued, as described below. The research component of the agreement continues through June 30, 2020.

Education Activities

Prior reports contain detailed information about the various education programs of the collaboration. Here, we highlight two components that continued beyond the formal end of the education agreement.

Global Leadership Program

The Global Leadership Program (GLP) ran for a fifth year in summer 2017 with 12 students from SUTD along with six from MIT. Over 10 weeks, the students designed and built electric boats, which they raced on the Charles River in a final Race Day event. Other program activities included a LeaderShape Institute, as well as ceramics, wilderness engineering, and globalization classes throughout the 10 weeks. Four MIT undergraduates participated as TAs, and one recent graduate of the Department of Mechanical Engineering, Rachel Reed, served as the lead instructor for the design challenge.

SUTD-MIT Joint Postdoctoral Fellowship Program

This program continued formally through February 2018, as was envisioned in the contract agreement. This was to allow for administrative support for eight postdocs who arrived at MIT to complete their second year of fellowship in fall 2017 and early 2018 (through February). This final batch of eight will conclude their appointments between fall 2018 and early 2019 (through February). Required administrative support for the program is very limited and is handled by [International Design Center \(IDC\)](#) assistant director, Jesse DeLaughter.

An extension of education funds to the end of September 2017 allowed the GLP to operate beyond the formal end of the collaboration and also provided support for the finance team to spend time closing out education accounts. We have faced some challenges in this close-out process, including accounts being unexpectedly reopened, as well as some

unexplained balances that needed to be worked through with the finance office. Our financial team continues to work through the pending issues and is returning balances to SUTD as accounts are closed so as not to delay repayment longer than necessary.

International Design Center Activities

Current budgets for research at MIT in the MIT-SUTD collaboration run about \$2 million per year for a total of \$20 million over the 10-year research component contract. Approximately 72 faculty and researchers from MIT and SUTD are working on projects associated with the IDC. To date, more than 2,250 conference and journal publications and presentations have resulted from the combined efforts of the IDC at both MIT and SUTD. We note that there is increasing awareness of the IDC and interest from other centers and departments in hosting events and workshops at our center. As a result, we had a busy year, including the following events.

Industry Days

The IDC held Industry Days on October 24, 2017 and April 10, 2018. At these events, current and potential industry partners met with faculty carrying out research relevant to their areas of interest.

Design Talks

The IDC hosted three design talks as part of its Speaker Series. The speakers included:

- November 14, 2017, Don Norman, professor and director, Design Lab, UC San Diego; co-founder of the Nielsen Norman Group
- December 5, 2017, Stephen Gates, global creative director and designer, host of the “Crazy One” podcast
- May 8, 2018, Dan Seewald, senior director of worldwide innovation, Pfizer

Hosted Events

- May 15, 2018, Open Learning. An MIT XR salon on creativity and learning.
- May 7–10, 2018, Internet of Things Bootcamp. The MIT Bootcamps team hosted a 25-participant Internet of Things program at the IDC, using the garage space to host interactive lectures and labs. Students developed projects that sense, connect, infer, and act, with access to the IDC’s shop space and hardware and electronic prototyping tools supporting their efforts.
- June 18–22, 2018, Make Impact Consortium Bootcamp. The IDC hosted a week-long bootcamp run by Professor Martin Culpepper for educators and administrators from the United States, United Kingdom, and New Zealand, who came to learn about creating safe and effective maker spaces and maker communities.

Design Summit

The SUTD IDC hosted its annual research summit in January 2018 in Singapore, bringing together faculty from MIT and SUTD to foster design research.

Classes

Although the education component of the MIT-SUTD Collaboration has concluded, the IDC continues to serve MIT students and faculty by hosting multiple classes each semester. The following classes were taught either fully or partially at the IDC during AY2018.

Fall 2017

- 4.032/4.033 Design Studio: Information and Visualization (Richard The)
- 4.500/4.512 Introduction to Design Computing (Larry Sass)
- 6.S063 Engineering Interactive Technologies (Stefanie Mueller)
- 22.033/22.33 Nuclear Systems Design Project (Zach Hartwig, Matteo Bucci, and Koroush Shirvan)

IAP 2018

- Human Factors Engineering (Ben Sawyer)

Spring 2018

- 2.S983 Sports Technology: Engineering and Innovation (Anette “Peko” Hosoi and Christina Chase)
- 2.739/15.783 Product Design and Development (Maria Yang)
- 4.501 Creative Design Prototyping (Larry Sass)
- 4.511 Advanced Projects in Digital Fabrication (Larry Sass)
- 4.032/4.033 Design Studio: Information and Visualization (Glen Cummings & Irene de la Torre Arenas)
- 4.141/4.142 How to Design (Almost) Anything (Skylar Tibbits)

The core curriculum of the MIT Integrated Design and Management (IDM) master’s program was taught at the IDC for its third year. Beginning in fall 2018, IDM will no longer be based at the IDC, moving its primary classroom and studio space into the MIT D-Lab. However, IDM students will likely continue to access some shop equipment at the IDC and will continue to provide some financial support for IDC shop operations and personnel.

As multiple D-Minor subjects are taught at the IDC, the Department of Architecture supported a portion of the shop manager’s salary and contributed additional support in the form of equipment purchases. In the coming year, we will move toward requesting similar contributions from other departments who utilize IDC space for classes.

Strategy

The current contract with Singapore ends June 20, 2020. As we get closer to that date, it is becoming increasingly important for us to consider the long-term financial stability of the center. Talks are ongoing with SUTD about a possible renewal of IDC funding, and our hope is to obtain significant base funding for the center for at least five years beyond the current end date. However, we recognize that whether or not additional funding comes through, there is a need to diversify funding sources. As such, we continue to seek industry funding and have initiated a new push to seek funding from government and foundation grants. We have also engaged in efforts to diversify and strengthen partnerships across the Institute.

Industry Activity

The IDC has been pursuing a consortium model of funding, seeking industry partners to pay membership fees for access to the IDC design and research ecosystem. Although multiple companies have expressed interest, it has proven challenging to get commitment of funds. This year, however, the IDC obtained its first industry funding through the consortium. Philips lighting is contributing \$75,000 for a project led by Marcelo Coelho from Architecture. We believe this first grant will provide positive momentum, leading to further contributions from industry partners.

Additionally, the IDC has built a stronger relationship with the Industrial Liaison Program (ILP). We gave a presentation to ILP staff on March 20, 2018 and hosted a tour of our space for ILP on May 2, 2018. This has led to better awareness on the part of ILP about IDC research topics, and ILP has regularly brought industry visitors to tour the IDC. Notably, we have also connected through ILP with several Chinese companies that have taken an interest in IDC research.

Grants Activity

In September, 2017, the IDC hired a grants development officer to seek and pursue relevant grant opportunities. While much of the first year has been spent surveying the landscape and identifying suitable opportunities, the IDC submitted an application for a National Science Foundation Engineering Research Center Planning Grant, and plans to pursue a larger Engineering Research Center grant when the next call comes out—likely in late fall 2018. IDC faculty are increasingly aware of grant opportunities and are interested in pursuing them through the IDC as a result of the grants development officer's efforts and outreach. Staff in Resource Development are also increasingly aware of IDC's thematic topics and interest in pursuing funding opportunities.

Personnel

Founding SUTD president Tom Magnanti stepped down on December 31, 2017 and was honored with a reception on February 21, 2018 at the Samberg Conference Center. Chong Tow Chong has been appointed president, concurrent with his provost position while the search continues for SUTD's next provost. Magnanti will continue to act as an adviser and give counsel. Kristin Wood and Lucienne Blessing remain co-directors of the SUTD IDC, while Chris Magee remains co-director at the MIT IDC. John Brisson remains the collaboration director at MIT and helps manage day-to-day operations of the MIT

IDC. Jesse DeLaughter remains assistant director of Administration for the MIT-SUTD Collaboration and the IDC. Julie Kukharensko remains the fiscal officer and is supported by Senior Financial Assistant Anne Gentilucci. Deb Payson is director of Strategy and Outreach. Chris Haynes is shop manager. Oksana Lasowsky resigned as technical administrative assistant in November 2017. Shop duties were consolidated under Chris Haynes and Alex Radinger was hired as administrative assistant.

Two new positions were created to help bolster the IDC's increased push to raise funds. Neil Calabro was hired as grants development officer, and Subarna Basnet was hired as director of Design Science, Innovation and Technology.

Jesse DeLaughter
Assistant Director for Administration