Deshpande Center for Technological Innovation

The Deshpande Center for Technological Innovation serves as a catalyst for innovation and entrepreneurship by supporting the research of MIT faculty and students, and facilitating collaboration with entrepreneurs, venture capitalists, and innovative businesses. It carries out its mission through several activities, including the Grant Program, the Catalyst Program, the Innovation Teams subject, and sponsored events. The center's goal is to be able to accelerate the movement of technology from the laboratories at MIT into the commercial marketplace, where the technology can have an impact.

The Deshpande Center was founded in 2002 through a generous gift of $20 million from Jaishree and Gururaj "Desh" Deshpande, cofounder and chairman of Sycamore Networks Inc. The center depends on the generous support of industry, the entrepreneurial community, and the MIT alumni community to sustain its programs.

Executive director Leon Sandler spearheads the Deshpande Center's efforts, along with Charles L. Cooney, faculty director and Robert T. Haslam professor of chemical engineering. Guidance is provided by a steering committee that includes Neha Hemang Dave; Desh Deshpande; Mark Gorenberg of Hummer Winblad Venture Partners; Chris Kaiser, MIT provost; Robert Langer, Institute Professor; Martin Schmidt, associate provost; and Ian Waitz, dean of the School of Engineering.

Highlights

In academic year 2013, the center continued to see more of its projects move toward commercialization. Since its inception, the Deshpande Center has funded more than 100 projects with more than $12 million in grants. Twenty-eight projects have spun out of the center into commercial ventures, 27 as start-ups and one as a license to an existing company. The 27 start-ups have collectively raised around $400 million in outside financing.

Deshpande Grant Program Awards

The Grant Program provides research funds that permit MIT faculty and students to create and investigate new technologies and support the transfer of new knowledge and technologies from the Institute to young companies. The Grant Program consists of two types of awards: Ignition Grants of up to $50,000 and Innovation Grants of up to $250,000. Multiple experts in academia and industry review each application in two stages: pre-proposal and full proposal. The center announces awards annually.

The Deshpande Center awarded eight grants in fiscal year 2013 totaling $706,000. The awards support a wide range of emerging technologies.

Ignition Grants

Ignition Grants target projects focusing on novel, enabling, and potentially useful ideas in all areas of technology. Although it might enable only exploratory experiments to establish proof of concept, an Ignition Grant can mean that a project is in a position to receive further funding, such as an Innovation Grant, to take a concept to full development.

Innovation Grants

An Innovation Grant benefits projects that have established proof of concept and identified a research and development path and intellectual property strategy. Each grant helps a project advance its technology and reduce technical and market risk. The goal is to reach a point where investors would invest in a start-up to commercialize the technology or where an existing company might license the technology and develop it.

FY2013 Grant Recipients

Jane-Jane Chen and Manijeh Goldberg: Novel Oral Mucosa Drug Delivery Project. The current treatment of oral cancer is to administer a highly toxic chemotherapy drug with systemic side effects intravenously. This project is developing a novel oral delivery of the drug that can significantly reduce the side effects while allowing for a more effective cancer treatment.

Alan Edelman: Enabling Big Computation on Big Data for Business Analysts and Scientists. As more and more data is generated, the analysis of the data becomes daunting and requires complex tools and programming. This project is developing a high-level programming language for the analysis of large amounts of data.

Alan Grodzinsky: Drug Delivery System for Treating Osteoarthritis. Joint trauma can injure cartilage and lead to osteoarthritis within 10 to 15 years. Treating the joint and cartilage immediately after the injury could prevent long-term damage and arthritis. This project is developing a drug delivery system for the treatment of injured joints to prevent arthritis.

Paula Hammond and Kenneth Mandell: Medication Dispensing Intraocular Lens for Cataract Surgery. Using eye drops, cataract surgery patients need to administer medication for several weeks after a new lens is implanted. This project is developing a technology to release drugs directly from the implanted lens using a new nanolayer technology, thus eliminating the need for eye drops.

Jeremiah Johnson: Stable Carbenes as General Surface Anchors. When manufacturing semiconductor devices, it is necessary to attach various materials to a surface layer. This project is developing a new methodology for attaching materials to surfaces using carbene molecules.

Dennis McLaughlin: Ensemble-based Processing of Noisy Images. Many imaging systems used in geology, medicine, and industry provide images that are "noisy" and imprecise. This project will allow useful information to be extracted from the noisy images to help detect features that would otherwise be hidden.

Ramesh Raskar: RetiCue—Portable Device for Retinal Imaging. Early detection of diabetic retinopathy allows treatment that can prevent blindness. The high cost of retinal imaging devices and the expertise required to use them makes early detection unavailable to millions around the world.

Timothy Swager: Sensors for Food and Agriculture: Selectivity for Key Markers and the Development of Scalable Manufacture. Gases emitted by plants indicate the ripeness of produce. An inexpensive, low-power gas sensor would permit producers to optimize the harvest, storage, transportation, and distribution of food. This project will develop a low-cost sensor designed for this market.

Catalyst Program

Volunteers from the business community are integral to the Deshpande Center's mission of helping MIT innovators achieve market impact.

Catalysts are a highly vetted group of individuals with experience relevant to innovation, technology commercialization, and entrepreneurship. They provide individual contributions to the center and do not represent any company interests in their role as catalysts.

Catalysts are chosen based on the following qualifications:

- Experience in commercializing early-stage technologies and/or mentoring researchers and entrepreneurs as well as industry expertise
- Willingness to proactively provide assistance to MIT research teams
- Willingness to abide by time commitment, confidentiality, and conflict of interest guidelines
- Commitment to the interests of MIT researchers and the Deshpande Center

All catalysts must sign a catalyst guidelines document and agree to abide by the Deshpande Center's volunteer guidelines for managing privileged information and conflict of interest.

Events

Through its sponsored events, the Deshpande Center seeks to bring together the components needed for MIT technologies to reach commercialization. These events connect faculty and students with members of the emerging technology industry.

IdeaStream Symposium

On April 5, 2013, the Deshpande Center held its annual IdeaStream Symposium aimed at connecting MIT researchers with the entrepreneurial community. The symposium included presentations and posters highlighting grantees whose work is at different stages, from new grant recipient to spin-off. Roughly 200 entrepreneurs, industry executives, venture capitalists, and MIT researchers attended the conference, which had the generous support of nine corporate sponsors.

Catalyst Events

Near the start of each semester, the Deshpande Center arranges a small reception to celebrate the latest grant recipients. This event is held in advance of announcing the grant awards to the general public. It is an opportunity for the grant recipient teams and catalysts to meet and mingle with each other and with staff and other volunteers. All new grant recipients are also asked to give a brief "elevator pitch" of their project.

Open House

The Deshpande Center hosted its premier fall event, the open house, in December 2012. The event served as a poster session for active grant projects and gathered nearly 150 members of the Deshpande Center community, including members of the MIT Corporation, for an evening of camaraderie and networking.

Other Events

To commemorate its 10th anniversary, the Deshpande Center hosted a dinner at the McGovern Institute for Brain Research at MIT in October 2012. The event brought together nearly 150 friends of the center, including grantees past and present, supporters and potential supporters, volunteers, faculty, and staff who have helped to make the Deshpande Center the success that it is today. The gala event included a product showcase (a museum-like display of products from some key spin-offs), themed beverages, and remarks by Desh Deshpande and MIT president Rafael Reif.

Other Collaborations

The Deshpande Center met with delegates from many national and international universities and organizations to discuss the center's and MIT's approach to innovation and technology commercialization. Deshpande Center staff also spoke at numerous forums, conferences, and events. The center is recognized as an internationally renowned model for stimulating technological innovation.

Within the MIT community, the Deshpande Center actively collaborates with other members of MIT's innovation ecosystem, including the Technology Licensing Office, the Martin Trust Center for MIT Entrepreneurship, the Venture Mentoring Service, the Industrial Liaison Program, and numerous student organizations.

Leon Sandler
Executive Director