Media Laboratory

At the Media Lab, FY2013 was a dynamic year full of new activities, enhanced interactions with the lab's ever-expanding community, and, as always, a host of new research initiatives.

The Media Lab continues to embrace director Joi Ito's vision for the lab as more of a "platform" than a "container." Talks and events are more frequently open to the public and are usually available via live webcasts. In its second year, the Media Lab Conversations Series welcomed speakers Beth Noveck, Damien Echols and Shaka Senghor, Greg Brandeau and Josh Sarantitis, Yancey Strickler, Susan Crawford, Baratunde Thurston, J.J. Abrams, Scott Cook, and Carroll Bogert. Additionally, the lab's new Director's Fellows program has gathered a diverse group of individuals from a broad range of sectors and geographies to join us in collaborative research and to expand our growing global community. The fellows will work not only with the lab's students and faculty but also with each other. The Director's Fellows program has been seed-funded by gifts from Media Lab Advisory Council members Reid Hoffman and Jeff Walker.

Selected Research Initiatives

A sampling of 2012–2013 Media Lab research initiatives includes:

- Femto-photography, a pioneering imaging technology that captures a segment of an image at the speed of light—one millionth of a billionth of a second—and offers the possibility of seeing around a corner, allowing our cars to see another vehicle around a blind curve or firefighters to look into a burning house to see whether anyone is left inside.

- Optogenetics, a pioneering technology that makes it possible to control brain activity using light.

- Technologies and tools for analyzing and engineering brain circuits to reveal which brain neurons are involved in different cognitive processes and to explore possible ways this knowledge could be used to treat a number of brain disorders.

- The Glass Infrastructure, a social place-based information window into the Media Lab via 30 touch-sensitive screens strategically placed throughout the physical complex.

- Holographic TV, an electro-optical technology that enables a PC graphics processor to generate holographic video images in real time on an inexpensive screen.

- Immersion, a visual data experiment that focuses on a people-centric approach to email rather than on email content, bringing into view an important personal insight: the network of people to whom one is connected via email and how this network evolves over the course of many years.

- Scratch 2.0, which provides updates to the Scratch programming language and online community and enables kids (ages 8 and up) to create their own interactive stories, games, music, and animations for the web. A new, cloud-based version allows young people to create new types of projects and work together in different ways.

- Mobility on Demand (MoD) systems, future lightweight electric vehicles to be placed at electrical charging stations strategically distributed throughout a city. MoD systems provide mobility from transit stations to a final destination.

- OpenIR, a real-time environmental visualization system for analysis, planning, and response that shows, through infrared satellite data, environmental features that are not visible to the naked eye or even through true-color aerial images.

Exhibits and Performances

Tod Machover's *A Toronto Symphony*, which incorporates thousands of sounds submitted by ordinary citizens of Toronto to create a symphony that represents the everyday experiences of the city, premiered on March 9, 2013.

The Silk Pavilion, on display in the lobby of Building E14, is a project of the Mediated Matter group that explores the relationship between digital and biological fabrication. Inspired by the silkworm's ability to generate a 3D cocoon out of a single multi-property silk thread, the pavilion's overall geometry was created using an algorithm that assigns a single continuous thread across patches, providing various degrees of density. Density variations were achieved by deploying silkworms as a biological "printer" in the creation of a secondary structure; 6,500 silkworms were positioned at the bottom rim of the scaffold, spinning flat nonwoven silk patches as they locally reinforced the gaps.

Wheels + Legs, on display in the lobby of Building E14, featured the work of two Media Lab research groups: Changing Places (Kent Larson, director) and Biomechatronics (Hugh Herr, director). Changing Places researchers are creating more livable and sustainable cities with projects such as the CityCar, GreenWheel, RoboScooter, and PEV (Persuasive Electric Vehicle). The Biomechatronics group focuses on smart prostheses, orthotics, and exoskeletons, blurring the boundaries between what is human and what is not.

The Other Festival exhibition at the Media Lab in April 2013 (with some projects on extended display) featured art and design projects from faculty, staff, and students. The festival included more than 50 Media Lab projects that ranged from an installation allowing visitors to explore a rich sonic space through their expressive movement, to fashions highlighting novel work in e-textiles and computational design.

Sep Kamvar's work was featured in three exhibits during FY2013: *Flow, Just Flow, Variations on a Theme* (Joel and Lila Harnett Museum of Art, Richmond, VA); the Seventh Seoul International Media Art Biennale (Seoul Museum of Art, Seoul, South Korea); and *Boundaries: The Work of Sep Kamvar* (Skissernas Museum, Lund, Sweden).

Architectural Award

The Boston Society of Architects awarded the 2012 Harleston Parker Medal to the Media Lab extension, designed by IM Pei and Associates and Leers Weinzapfel Associates. A jury of 10 design professionals selected the building as "the single most beautiful building or other structure" constructed in the metropolitan Boston area in the last 10 years.

Communications

The Media Lab significantly expanded its social media presence, more than doubling the number of Twitter followers (to more than 100,000), as well as increasing interactions on Facebook. Other platforms added to the lab's social media portfolio included an official LinkedIn page, Pinterest, Storify, and a more robust Flickr presence. The lab's Conversations Series and its dedicated hashtag (#MLTalks) have been a vital part of enhancing the lab's outreach.

Notable press coverage in FY2013 included:

- "Technology in the Classroom: What's Next?": an NBC News live town hall hosted by the Media Lab (in collaboration with Dell) on September 13.
- "What If…We Could All Talk to Joi Ito?": a March 14 BBC live radio broadcast from the Media Lab with Joi Ito in conversation with host Razia Iqbal. Ito also answered questions submitted by listeners and correspondents from around the world.
- *Wired UK*: the magazine's November 2012 issue was devoted exclusively to the Media Lab, with coverage of every group and in-depth features on the work of Deb Roy, Tod Machover, Neri Oxman, Edward Boyden, Hugh Herr, and Rosalind Picard.
- "Inside the Media Lab with *Financial Times Magazine*": an extensive feature on the lab from May 2013 featuring City Science and LEGO urban planning, Ed Boyden and his team's synthetic neurobiology research, the Biomechatronics group, and more.

Fellows

During FY2013, several companies, organizations, and individuals supported students and postdoctoral researchers at the lab through fellowships:

Audi-Volkswagen: Kenton Williams

Center for Integration of Medicine and Innovative Technology: John Moore

Cisco: Lining Yao, Sheng-Ying Pao

Damon Runyon Cancer Research Foundation: Daniel Schmidt (postdoctoral researcher)

ENEL Energy: Brian Mayton

The Martin Family Fellowship: Ankur Mani

National Science Foundation: Ricarose Roque, Jacqueline Kory, Kenton Williams (also Volkswagen Group of America), Sean Follmer, Peter Krafft

Sheldon Razin: Amy Chuong

Shell Energy: Daniel Leithinger, Ira Winder, Brett Lazarus

Simons Foundation: Jorg Scholvin (postdoctoral researcher)

Telmex: Travis Rich

The Wellcome Trust: Nir Grossman (postdoctoral researcher)

Members

The Media Lab's annual operating budget of approximately $45 million was funded by a combination of sources, including more than 70 member organizations. Nine new members joined in FY2013: Microsoft Corporation, NTT R&D, State of Minas Gerais (Brazil), SingTel, eBay Inc., Pearson Inc., TCL Multimedia, New Balance Athletic Shoe Inc., and Toyota Motor Corporation.

Patents

In FY2013, the Media Lab filed 27 US patent applications, and 37 patents were issued.

Directed Research

In FY2013 the Media Lab submitted 72 proposals for new or continuing directed research projects, including graduate and postdoctoral fellowships. Approximately one-quarter of these proposals were for subawards in collaboration with other research institutions. Forty-nine proposals remain under consideration, and 13 have resulted in awards. Approximately one-half of the proposals submitted were in response to government solicitations (e.g., National Science Foundation, National Institutes of Health, and Defense Advanced Research Projects Agency), with the other one-half submitted to foundations and nongovernmental sources. The new awards ranged in size from $5,000 to $600,000 and spanned six months to two years.

Human Resources/Administration

Stacy McDaid joined the Media Lab in February as a senior fiscal officer. She came to the lab from MIT's Department of Mechanical Engineering. Other hires included Danielle Nadeau, as executive assistant to Media Lab director Joi Ito; Janine Liberty, as communications assistant; and Helene Kelsey, as human resources assistant. Nicole Freedman, administrative assistant for the lab's Human Dynamics research group and the Center for Civic Media, received the School of Architecture and Planning's Infinite Mile Award.

Joi Ito
Director

Appendix 1. Media Lab Members as of June 30, 2013

Consortium Research Sponsors

Digital Garage
Hasbro Inc.
Hisense Co. Ltd.
LG Electronics Inc.
NEC Corporation
Panasonic Corporation
Samsung Electronics Co. Ltd.
SingTel
TCL Multimedia
Toshiba Corporation

Consortia and Joint Program Sponsors

Aegis Media
APX Labs
Bank of America
Benesse Corporation
Berwind (affiliate)
BT
Cisco Systems Inc.
Comcast
Culture Convenience Club Co. Ltd.
Deloitte LP
DENSO
Dentsu Inc./ISID
DirecTV
eBay Inc.
ESPN
Fidelity Center for Applied Technology
Fleury
Fujitsu Limited
FutureWei Technologies Inc./Huawei
GlaxoSmithKline
Google
Hallmark Cards Inc.
Hearst Corporation
Hyundai Motor Company
IDEO
Infocast Limited
Intel
Intuit Inc.
Kozo Keikaku Engineering Inc. (affiliate)
The LEGO Group
Lockheed Martin

Mars Inc.
Marvell
Microsoft Corporation
Natura
New Balance Athletic Shoe Inc.
News Corporation
Nokia Corporation
Nokia Siemens Networks
Northrop Grumman
NUL-G (affiliate)
Oblong Industries Inc.
Olympus Corporation
Pearson Inc.
Procter & Gamble Company
QUALCOMM Incorporated
Research in Motion
RR Donnelley
Sanofi-Aventis
Saudi Aramco
Sberbank
Schneider Electric SA
Sensormatic Electronics Corp.
Shell
State of Minas Gerais
Steelcase Inc.
Time Inc.
TOPPAN Printing Co. Ltd.
Toyota Motor Corporation
Toys"R"Us Inc.
Verizon
Volkswagen Group of America Inc.
Yamaha Corporation

Research Contracts and Special Funds

Alfred P. Sloan Foundation
BBN Technologies Corporation/Defense Advanced Research Projects Agency
Boston University/National Institutes of Health, National Science Foundation
Center for Integration of Medicine and Innovative Technology
Damon Runyon Cancer Research Foundation
Dartmouth College/Office of Naval Research

Defense Advanced Research Projects Agency

Human Frontier Science Program Organization

Intel Foundation

Kadokawa Culture Promotion Foundation

Knight Foundation

MIT Lincoln Laboratory

National Aeronautics and Space Administration

National Collegiate Inventors and Innovators Alliance

National Institutes of Health

National Science Foundation

New York Stem Cell Foundation

Office of Naval Research

Open Society Foundations

Rehabilitation Institute of Chicago/US Army

Rensselaer Polytechnic Institute/US Army

Space and Naval Warfare Systems Center

The Charles Stark Draper Laboratory Inc.

The Institution of Engineering and Technology

The Paul G. Allen Family Foundation

The Simons Foundation

The Wellcome Trust

University of California/Army Research Office

University of Massachusetts Medical Center /National Institutes of Health

US Army

US Veterans Administration