

## Media Lab

On October 30, 2015, the [Media Lab](#) celebrated its 30th anniversary with a [day-long symposium](#), at Kresge Auditorium, attended by an overflow crowd of more than 1,500 guests. Hosted by magicians Penn & Teller, the event celebrated the Media Lab's roots as a *salon des refusés*, engaging a distinguished roster of speakers who presented on themes emblematic of the Lab's history: creative, contrarian, and counterintuitive, with humanitarian, artistic, scientific, and social purposes. The program included tributes to Marvin Minsky and former MIT president and Media Lab co-founder Jerome Wiesner. There were also talks by former UN Secretary General and Nobel laureate Kofi Annan and Harvard University professors Steven Pinker and George Church, as well as Stewart Brand, Nolan Bushnell, Mary Lou Jepsen, US Chief Technology Officer Megan Smith, and many others.

Just three months after the anniversary celebration, Marvin Minsky, a brilliant and transformative figure for both the Media Lab and MIT, passed away. On March 17, the Lab was the scene of [Celebrating Marvin Minsky](#), an event intended to honor Minsky's life and achievements. Hosted by National Public Radio's John Hockenberry, the event featured Minsky's colleagues from the Media Lab and the Computer Science and Artificial Intelligence Laboratory as well as family and friends. In reflecting on Minsky's contributions to the Institute and the world, MIT President L. Rafael Reif wrote: "Very few people produce seminal work in more than one field; Marvin Minsky was that caliber of genius ... His creativity was beyond measuring. We can only be grateful that he made his intellectual home at MIT."

2016 also saw the launch of the new online [Journal of Design and Science \(JoDS\)](#), a collaboration between the Media Lab and the MIT Press. The journal offers a new, open-access alternative for academic publishing. Its aim is to capture the antidisciplinary ethos of the Media Lab while opening new connections between science and design. Unlike journals that operate within a formal peer-review system, *JoDS* invites lively discussion across all fields of design and science, using unconventional formats and welcoming widespread participation; the journal encourages authors to engage in ongoing discussions with members of many different communities. The first volume, which included articles by Joi Ito, Media Lab Professors Neri Oxman and Kevin Slavin, and inventor and scientist Danny Hillis, was dedicated to Marvin Minsky. The format of *JoDS* is made possible by the new PubPub publishing platform, created by Media Lab graduate students Travis Rich and Thariq Shihpar in the Viral Communications group.

### Sampling of 2015–2016 Media Lab Research Initiatives

- Electome, a data analytics project that unlocks social media data to track voter perceptions. It is focused on the US presidential race, particularly on the intersection of news and social media.
- BioLogic, which uses the behavior of a microorganism that reacts to atmospheric moisture to create a new type of clothing, called Second Skin, that becomes more breathable as the wearer's body heat and humidity increase.

- PubPub, a radical new research publishing platform that features capabilities for datasets, interactive visualizations, videos, and rich comments. PubPub invites nontraditional publication formats as well as real-time collaboration between authors and reviewers.
- Expansion microscopy, a technique that enables researchers to visualize RNA with greater spatial precision by physically enlarging brain tissue samples, thus giving researchers high-resolution images of cellular activities.
- Enigma, which lets computers mine encrypted data using Bitcoin-based cryptography. The prototype system aims to solve the decades-old data security problem of homomorphic encryption, or sharing encrypted data with a third party without decrypting it.
- G3DP [three-dimensional (3-D) printed glass], a manufacturing platform designed to print optically transparent glass. It synthesizes modern technologies with age-old established glass tools and technologies, producing novel glass structures with numerous potential applications.
- Time-of-flight microwave camera, an instrument that can see through walls using microwaves to create high-resolution and 3-D images of objects that are obscured to the naked eye.
- Scratch blocks, which are focused on helping developers create high-quality coding experiences for children. These blocks bring together the vertical programming grammar of Scratch and the horizontal grammar of ScratchJr.
- Cillia, inspired by nature, are 3-D-printed artificial cilia—microscopic hair-like structures that can sense vibration and touch. They have the potential for application in many industries, such as technology, health care, fashion, and art.
- Reality Editor, which lets the user connect, manipulate, and preset the functionality of physical objects with a cell phone.
- Persuasive electric vehicle, a covered three-wheeler that makes biking more accessible for people in various demographic groups, addresses sedentary lifestyles, and provides energy-efficient mobility to help alleviate urban traffic by taking advantage of existing bicycle lanes.

### Visitors to the Media Lab

The Media Lab continues to attract visitors from around the world. In fiscal year 2016, visitors included the president of Armenia and Prince Henri d’Arenberg of Belgium, and government envoys and agency teams from Singapore, Canada, Turkey, Japan, and the European Community. Numerous chief executive officers and other C-suite officials from companies such as Takeda, Sony, Biogen, Unilever, Target, Google, and Jabil also visited the laboratory, as did US military and NASA representatives.

### Media Lab Talks

In its fifth year, the Media Lab Conversations series, renamed [ML Talks](#), featured appearances by artist Theo Jansen; environmental scientist Marco Kaltofen; Bitcoin core developers Gavin Andresen, Cory Fields, and Wladimir van der Laan; hacker/author

Andrew “bunnie” Huang; MIT Professor Sherry Turkle, author and director of the MIT Initiative on Technology and Self; Helen Margetts, director of the Oxford Internet Institute; and Diane Peters and Jane Park of Creative Commons. The Media Lab also began providing captioning for these talks during live streams and in the video archives.

## Events

Knotty Objects (July 15–16) was the Media Lab’s inaugural summer event, which drew designers, scientists, authors, and curators who explored design at the intersection of science, engineering, and cultural production.

The Breathe Respiratory Hackathons (September 19–21) were held simultaneously at the Media Lab, the Technion, and Imperial College, with the goal of improving quality of life for respiratory patients the world over.

In November, the Media Lab co-presented the reThink Food conference with the Culinary Institute of America in St. Helena, California. The two-day event featured talks and presentations from speakers from the food and packaged goods industries as well as academics and journalists.

Professor Ed Boyden spoke on finding new ways to approach intractable brain disorders, such as Alzheimer’s disease and Parkinson’s disease, at the 2016 World Economic Forum in Davos, Switzerland (January 23).

SXSW Interactive 2016 (March 11–20) featured many Media Lab researchers, including Sang-won Leigh and Caleb Harper, as well as Rosalind Picard and David Rose, on Parenting Without Pixels: The Tech-Enabled Future.

Scratch Day 2016 (May 14) was celebrated at 659 events around the world.

CHI 2016 (May 7–12) saw the acceptance of 17 Media Lab submissions. Among the groups represented were Tangible Media, Responsive Environments, Fluid Interfaces, Affective Computing, Lifelong Kindergarten, and Civic Media. Pattie Maes (Fluid Interfaces head), Rosalind Picard (Affective Computing head), and Karthik Dinakar (Fluid Interfaces) co-hosted CHI’s first Computing and Mental Health workshop.

## Talks, Exhibits, and Performances

On September 9, 2015, the Lucerne Festival Academy Orchestra offered the world premiere performance of Tod Machover’s *Symphony for Lucerne* at the Lucerne Festival. He premiered another collaborative piece with the City of Detroit when *Symphony in D* was played by the Detroit Symphony Orchestra on November 20.

Neri Oxman’s “Wanderers” series of 3-D–printed sci-fi wearables was shown at the Cooper Hewitt, Smithsonian Design Museum’s Design Triennial exhibition.

Kevin Slavin, head of the Playful Systems group, talked about investigating urban metagenomics to reveal the invisible microbiological world of cities at the 2016 Venice

Architecture Biennale (May 28–November 27). The exhibition includes a “metagenomic beehive” installed at the Palazzo Mora.

Joi Ito gave the keynote address at SIGGRAPH 2015, focusing on how radical new approaches to science and technology can transform society.

The Media Lab opened its *Jerome B. Wiesner: Visionary, Statesman, Humanist* exhibit in the Media Lab lobby.

Xin Liu’s (Fluid Interfaces) “Tear Set” installation and digital photo archive “Can You Tear for Me?” were shown at the OCT Contemporary Art Terminal in Shanghai as part of a new media group exhibition, *The Ballad of Generation Y* (December 5–22).

In a keynote address at the 2016 American Institute of Architects convention, Mediated Matter head Neri Oxman offered a fascinating peek at the future of design and practice. He described material ecology and biomorphism as the keys to the design of the future.

## Communications

The Media Lab continued to garner positive media coverage in national and international markets. Announcements and press campaigns were launched around key initiatives including OpenAG, the Laboratory for Social Machines, the digital currency initiative, and the Center for Extreme Bionics, and research projects such as “Wanderers” and 3-D printed glass (Mediated Matter), bioLogic and Cillia (Tangible Media), Expansion Microscopy (Synthetic Neurobiology), BioGlass (Affective Computing), Reality Editor (Fluid Interfaces), NailO (Living Mobile and Responsive Environments), as well as numerous awards and recognitions.

Media outlets covering the Media Lab included:

ABC News	CNN Latin America
AERA by Asashi Shimbun	Co.Design
<i>Architectural Record</i>	Co.Exist
ARTE	Coindesk
<i>The Atlantic</i>	COURRIER Japon
BBC World News	The Creators Project
BBC Future	<i>The Daily Show</i>
<i>Bitcoin Magazine</i>	<i>The Daily Mail</i> (UK)
Bloomberg News	Design News
Bloomberg View	Dezeen
Bloomberg West	<i>Discover Magazine</i>
<i>The Boston Globe</i>	<i>El Pais</i>
Business Insider	<i>El Mundo</i>
Cartoon Network (Scratch)	<i>The Economist</i>
CCTV (China)	<i>Fast Company</i>
<i>Christian Science</i>	<i>Financial Times</i>
<i>Monitor</i>	<i>Forbes</i>
CNET	<i>Forbes Japan</i>
CNN	Gizmodo

<i>Global News (Taiwan)</i>	NPR affiliate stations
<i>The Guardian (UK)</i>	<i>The Observer (London)</i>
<i>Harvard Business Review</i>	<i>POLITICO</i>
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<i>IEEE Spectrum</i>	Reddit
International Business <i>The Times</i>	<i>Science</i>
Korean Broadcasting System	<i>Science News</i>
Lucky Peach	<i>Scientific American</i>
<i>The Los Angeles Times</i>	Seoul Broadcasting System
<i>Make Magazine</i>	<i>Smithsonian Magazine</i>
Mashable	STEAM Stories
<i>Metropolis Magazine</i>	<i>Surface Magazine</i>
MIT Technology Review	TechCrunch
NBC News	<i>The Telegraph (UK)</i>
<i>National Geographic</i>	<i>USA Today</i>
<i>Nature</i>	<i>US News and World Report</i>
NDTV (India)	VICE
NHK (Japan)	<i>Vogue</i>
NOVA	<i>The Washington Post</i>
<i>New Scientist</i>	<i>The Wall Street Journal</i>
<i>Newsweek</i>	<i>Wired</i>
<i>The New York Times</i>	<i>Wired IT</i>
NPR News,	<i>Wired Japan</i>
<i>Science Friday</i> , and	<i>Wired UK</i>

## Finances

The Media Lab's annual operating budget of approximately \$65 million was an increase of approximately 13% over FY2015. The Media Lab ended the fiscal year with an operating surplus of \$1 million. With surpluses from prior years, this brings the laboratory's net asset balance to \$26 million.

Some 43% of funding came from the consortium (\$28.5 million), which brought in a net annual membership revenue increase of \$1.1 million. Sponsored project funding was \$12 million and accounted for 18% of the fiscal year 2016 budget. Gift income came in at \$14.5 million, a decrease of \$6.1 million over the previous year; this was because FY2015 had been an unusual year for gifts. The Media Lab did not have to write off any members in FY2016; it holds a bad-debt reserve balance of \$461,000 to protect against downside risk. In all, FY2016 was a year of financial growth, one in which the Media Lab began work on creating an updated financial system that will provide flexible, real-time reporting, with plans for implementation in FY2017.

## Members

In FY2016, the Media Lab welcomed 13 new members: Arçelik; the Boston Consulting Group; MacAndrews and Forbes, Inc.; Yindu Ogilvy; Target Corporation; Ferrero; Sony Corporation; Tata Consultancy Services; DP World; Flipkart; Whaley; Bose Corporation;

and Turner Broadcasting, Inc. In addition, Intel and NEC Corporation supported students and postdoctoral researchers at the Media Lab through fellowships in FY2016.

## Patents

In FY2016, the Media Lab filed 66 total patent applications (provisional and ordinary applications, filings under the Patent Cooperation Treaty, DIV). Eighteen patents were issued.

## Directed Research

In FY2016, the Media Lab submitted 79 proposals for new or continuing directed research projects, including graduate and postdoctoral fellowships. Approximately 30% of these proposals were for sub-awards in collaboration with other research institutions. Forty-four proposals remain under consideration; 28 have resulted in awards. Of the proposals submitted, 45% were in response to government solicitations (e.g., from the National Science Foundation, the National Institutes for Health, and the Defense Advanced Research Projects Agency). The others were submitted to foundations and nongovernmental sponsors. The new awards ranged in size from \$400,000 to \$1.1 million; they will support research expected to take from four months to three years.

## Human Resources/Administration

The Media Lab research staff and supporting operational staff grew again in fiscal year 2016. Jane Wojcik, who has been a network manager since 1995 in Network and Computing Systems, is retiring from the Media Lab. Ellen Hoffman, who announced her intention to step down from her position as director of communications in FY2017 to work on special projects for the Media Lab, was the recipient of an MIT Excellence Award.

**Joi Ito**  
Director

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 June 2016