

Technology Licensing Office

During fiscal year 2019, the [Technology Licensing Office \(TLO\)](#) saw success in its endeavors. Of great importance to the TLO is the opportunity to serve the MIT community, and in doing so, to make an impact on the world. The TLO mission statement describes this goal:

In the spirit of MIT's mission to advance knowledge, the TLO moves innovations and discoveries from the lab to the marketplace for the benefit of the public and to amplify MIT's global impact. We cultivate an inclusive environment of scientific and entrepreneurial excellence and bridge connections from MIT's research community to industry and startups by strategically evaluating, protecting, and licensing technology.

All 51 members of the TLO staff (23 licensing professionals and 28 administrative and support personnel) work closely with faculty members and researchers to identify technologies that may have a significant effect on the world if further developed and commercialized. The TLO manages the process of protecting these technologies, identifying licensees, and negotiating licenses, including licenses to startup companies founded by MIT faculty, postdoctoral associates, graduate students, and staff. TLO staff manage the protection and licensing of MIT's trademarks and use of the MIT name. The TLO also works very closely with the Office of Sponsored Programs to negotiate intellectual property (IP) terms and subsequent management of IP outcomes in non-federal research sponsorship agreements, collaboration agreements, and large-scale alliances (with industry, foreign governments, and philanthropic foundations.)

Licensing and Patenting Activity

The number of technology disclosures submitted to the TLO was 786 (compared with 822) and remained steady for [Lincoln Laboratory](#) (83 in FY2019 and FY2018). The TLO manages 5,221 issued and pending US patents and 4,971 issued and pending foreign patents. Filing and maintaining such a large portfolio cost MIT nearly \$24 million in FY2019.

The TLO's net patent cost expenditure (patent costs less reimbursements) was \$9 million, which is a cost of \$1 million less than in FY2018. The lower cost was because the licensing, IP, and finance teams were more judicious in patent management and more diligent in recovery of patent costs from licensees and joint owners.

Approximately 43% of MIT's issued US patents and 25% of pending US patents are currently licensed or optioned to third parties; 89% of foreign-issued patents are licensed or optioned to third parties. The FY2019 research expenditure from which new IP arose was \$773.9 million for MIT and \$1.066 billion for Lincoln Laboratory.

The TLO's FY2019 licensing and patenting activity included the following:

- Executed 112 licenses and 31 options
- Completed more than 140 active trademark licenses, yielding \$446,000
- Launched 25 startup companies based on MIT IP

- Completed five licenses and one option agreement Lincoln Laboratory technologies
- MIT received equity as part of the licensing consideration in 10 of the 16 startup licenses
- Licensed new technology in FY2019 for seven startup companies
- Established a pipeline of more than 192 license and option negotiations by the end of FY2019, of which 44% of those negotiations were with startup companies.

More than 77% of the FY2019 licensed startup companies were based in Massachusetts; 19% were based in the US but outside Massachusetts; 4% were international. Of the 25 FY2019 startups, 16% are located near MIT. Continued use of the ready-to-sign initiative for end-use software licenses meant that approximately 95% of the 61 licenses executed in FY2019 were submitted online.

Revenue Generated

Gross TLO cash income in FY2019 was \$46.5 million. Of 518 active revenue-generating licenses, just five generated more than \$1 million in FY2019; an additional five licenses generated more than \$500,000. Revenue from liquidated equity received in consideration for licenses was \$2.7 million.

In FY2019, more than \$20 million from royalties earned in FY2018 was distributed to more than 1,373 inventors; 90 departments, laboratories, and centers; and 74 other entities. Some \$10.3 million was distributed to MIT's general fund. Most of the TLO income is generated from licenses that were executed and patents that were filed over the past five to 10 years.

Startup Company Activity

Of all the startup companies licensing MIT IP, 405 are active MIT startups. About 70% of active startups are in the physical sciences or software and 30% are in the life sciences. Approximately 24% of active MIT startups raised venture capital dollars in FY2019.

Strategic and Policy Contributions

The TLO staff contributed their policy and practice expertise in other ways to the MIT community and to the nation. These efforts included:

- a new, simplified software-only license that allows easy commercialization of qualifying MIT startups with 2% equity as consideration;
- improvement of revenue-sharing practices by allowing all qualifying inventors to share when equity that MIT takes in lieu or partial lieu of royalties is liquidated;
- addition of the Inventions and Proprietary Information Agreements (IPIA) form to Atlas to ease the collection burden on MIT administrators;
- significant contributions from the TLO compliance team to the National Institute of Standards and Technology on proposed changes to the Bayh-Dole regulation;

- participation by the TLO director in the subcommittee of the National Institute of Standards and Technology's Visiting Committee on Advanced Technology that made recommendations for implementation of the federal Green Paper, Return on Investment Initiative for Unleashing American Innovation;
- presentations from TLO compliance, operations, and IPIA staff on MIT IP policies to MIT staff at the Collaborating for MIT's Future poster session on October 25; and
- the TLO director joined the board of the Licensing Executives Society.

Engagement in the Entrepreneurial Ecosystem

TLO staff are active contributors, presenters, and participants in an increasing number of student activities and entrepreneurial programs at MIT. They also engage with visitors and partners interested in learning how MIT successfully manages its commercialization activities.

Selected Outreach Activities, FY2019

- 1.007 Big Engineering: Small Solutions with a Large Impact—guest talk on patenting and licensing
- 2.009 class presentation and office hours
- 2.75 Medical Device Design—basics of patents
- 2.96/2.961 Management in Engineering class
- 6.903J/15.628J Patents, Copyrights, and the Law of Intellectual Property
- 20.380J/5.22J Biological Engineering Design
- 2018 MIT AI in Life Sciences and Healthcare Conference
- 2019 MIT Startup Ecosystem
- Administrators' meeting, School of Science
- AI Is Everywhere: A Sector by Sector Discussion Regarding the Opportunities and Challenges of Artificial Intelligence (Suffolk Law School, June 19, 2019)
- Alexandria Launch Labs
- Association of University Technology Managers, annual meeting
- Association of University Technology Managers, Tools and Essentials courses
- Badgers to Boston networking event (Wisconsin Alumni Research Foundation)
- BASF North American Center for Research on Advanced Materials conference
- Boston Bar Association, Anatomy of a Deal: IP and Healthcare Transactions (June 24, 2019)
- Boston Biotech Working Group

- Boston College talk
- Boston Intellectual Property American Inn of Court
- Boston Patent Law Association breakfast with US Patent and Trademark Office Director Andrei Iancu
- Brain and Cognitive Sciences Program faculty meeting
- Center for Bioenergy Innovation, Oak Ridge National Laboratory
- Collaborating for MIT's Future event
- Computer Science and Artificial Intelligence Laboratory, faculty meeting and graduate students meeting
- Delta V accelerator—final presentations
- Deshpande Center for Technological Innovation (grant funding programs, IdeaStream, etc.)
- DeviceTalks (medical device conference)
- Energy Ventures—class presentation
- Entrepreneurship & Innovation Resource Roundup (hosts: MIT Innovation Initiative and the Martin Trust Center for MIT Entrepreneurship)
- EurekaFest—sponsored by the Lemelson-MIT Program
- Export Control Seminar—Independent Activities Period
- Global Startup Workshop
- Golden Seeds Angel Fund forum
- Graduate student blog-writing workshop
- Graduate Administrators Roundtable
- Harvard Bench-to-Business Bootcamp
- Independent Activities Period—presentation co-sponsored with MIT Libraries
- Iceland Technology Transfer Office presentation (Reykjavík University, March 4)
- Innovation-Driven Entrepreneurial Advantage Week talk
- Ideation 2019
- Industrial Liaison Program meetings
- Innovative Funding Models in Translational Research Project
- IPIA meetings with MIT departments, laboratories, and centers
- Jack Turner Entrepreneurship Award Reception
- Karlsruhe Institute—Germany
- LES annual meeting session: “Zen, Patents and Open Source: Balancing the Viewpoints of Licensors and Licensees”

- Licensing Executives Society, Boston chapter, presentation
- Lincoln Laboratory meetings
- Massachusetts Life Sciences Innovation Day
- MassVentures Small Business Innovation Research Targeted Technologies program
- Massachusetts Association of Technology Transfer Offices directors' meeting
- Mechanical Engineering RA's presentation
- Meeting with MIT.nano Member Advisory Panel
- Meeting with Illumina Accelerator
- Meeting with Innovate UK
- Meeting with Johns Hopkins and Martin Trust Center for MIT Entrepreneurship
- MILCOM 2018 presentation
- MIT-Boston University Law School Legal Clinic Bootcamp
- MIT–University Mohammed VI Polytechnique meeting
- MIT AI in Life Sciences and Healthcare Conference
- MIT China Forum: China's Universities in Perspective
- MIT Communicators InfoGroup
- MIT Corporation—open session
- MIT DesignX Pitch and Demo Night 2019
- MIT Hacking Medicine—National Health Service Digital Exemplar Program
- MIT Innovation Initiative Campus Preview Weekend Resource Fair
- MIT Startup Ecosystem Conference
- MIT Strategy on China
- [MIT Empowering the Teachers](#)
- MIT–Southern University of Science and Technology collaboration kickoff
- MIT Energy Initiative meetings
- Naval Research Laboratories meeting
- New Engineering Education Transformation presentation
- Nutter Law Firm meet and greet event
- Osage University Partners, Ventre Capital 101 seminar and meetings
- Patents 101 Talk for Idea² Global
- Regional Entrepreneurship Acceleration Program
- Sandbox office hours

- Singapore-MIT Alliance for Research and Technology meeting
- StartMIT Resource Fair and Pitch Session
- Technology Breakfast
- TedX Beacon Street
- TLO 101: Presentation to 5.39 Research and Communication in Chemistry
- Tufts Launchpad External Evaluation Committee
- University of Illinois Urbana Champaign, Office of Technology Management, Ignite
- Venture Mentoring Services—mentor and meetings
- Vice President for Finance—Office of Treasury staff
- Women’s Initiative for Self Empowerment (WISE) Luncheon
- Wolf Greenfield’s Public Market event
- Women in the Enterprise of Science and Technology (WEST) Venture Panel

Members of the TLO are also actively involved in disseminating MIT technology transfer and entrepreneurship policies and practices to other universities, research institutes, and governments throughout the world. TLO senior staff have served, usually pro bono, as advisors for university or governmental technology transfer offices in a number of countries, as well as on boards and committees for national, state, and local entrepreneurial technology transfer organizations.

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