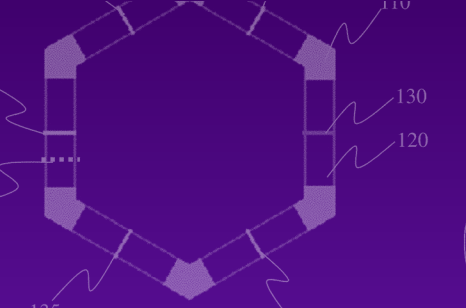
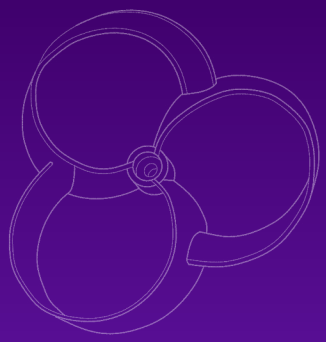
2025 ANNUAL REPORT





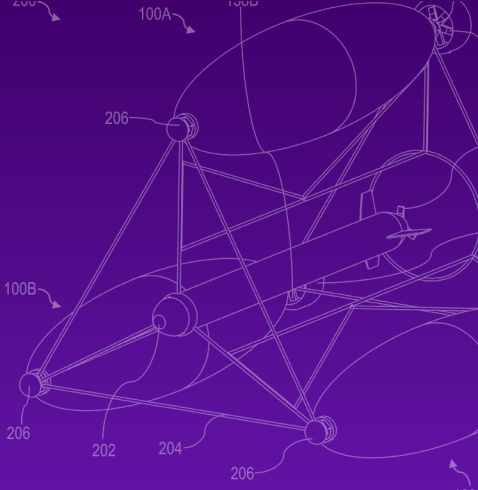


FIG. 2

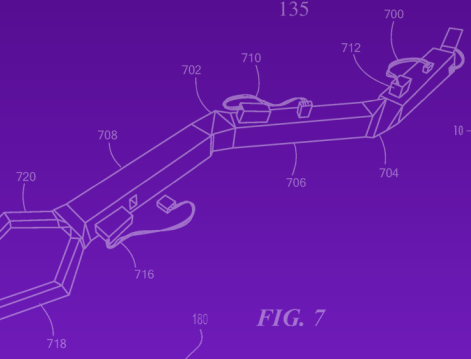
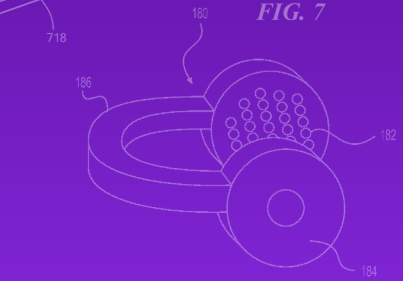
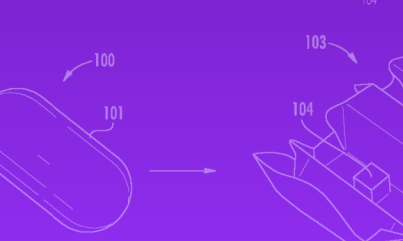


FIG. 7





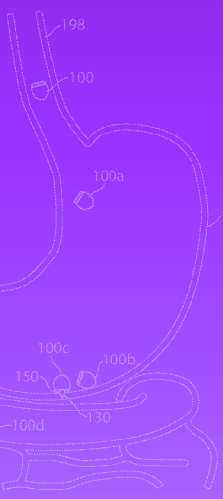


FIG. 3

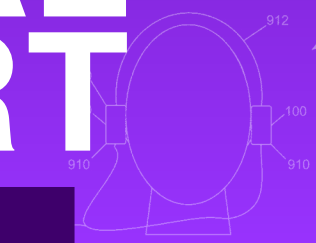
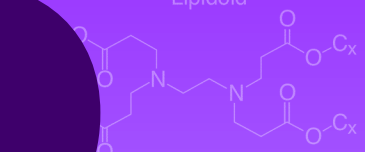
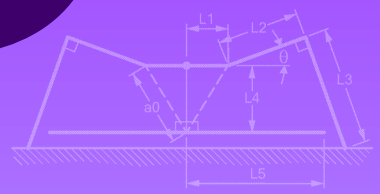


FIG. 9

Lipidoid





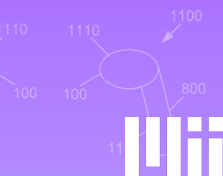


FIG. 11

FIG. 11A

FIG. 11B

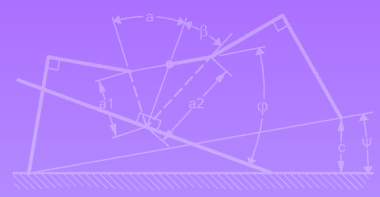
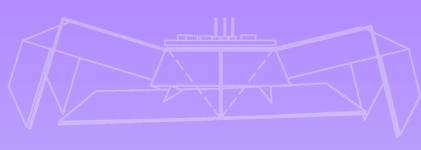


FIG. 4



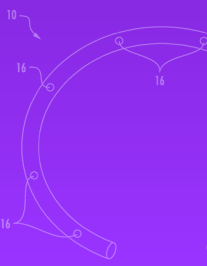


FIG. 2

FIG. 1A

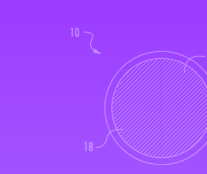
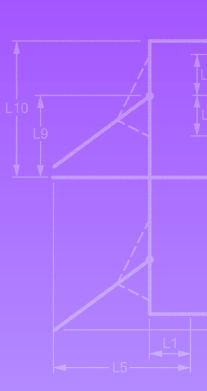


FIG. 1B



Technology Licensing Office

Image courtesy of the MIT Institute Office of Communications

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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.

Technology Licensing Office staff photo taken at the TLO Annual Retreat, May 2025

HELLO, FROM CAMBRIDGE

To our dedicated team at the MIT Technology Licensing Office (TLO) and to all who champion innovation across the globe.

In a time of rapid change and global uncertainty, the enduring spirit of discovery within higher education shines as a beacon of hope. While our academic landscape faces its share of turmoil—from evolving funding models to societal shifts—the fundamental mission of institutions like MIT remains more critical than ever. We are entrusted with a profound responsibility to advance knowledge and educate the next generation of leaders, to harness the power of "mind and hand" to address the world's most pressing challenges.

Lesley Millar-Nicholson
Executive Director

Technology Licensing Office

Across the country and around the world, technology transfer offices like ours help to transform brilliant ideas into practical solutions.

This annual report chronicles another year of remarkable achievements, a testament to the relentless ingenuity of our researchers, licensees and corporate stakeholders, as well as the tireless efforts of the TLO. Each invention disclosed, each patent filed, and every license executed represents a vital step in translating groundbreaking research from the lab to the marketplace, creating tangible benefits for humanity. Of course, the path is fraught with uncertainty, whether fiscal risks, market movements or legal hurdles. This is not merely an exercise in commercialization; it is the essence of public service. It is how breakthroughs in health, sustainability, manufacturing, technology, and more move from theoretical possibility to real-world impact.

This commitment is reflected in the TLO's alignment with President Kornbluth's special initiatives launched in FY25, which aim to foster collaboration and address global challenges. Whether it is supporting The Climate Project at MIT, advancing the MIT Generative AI Impact Consortium (MGAIC), catalyzing discovery through the MIT HEALS – Health and Life Sciences Collaborative, connecting human-centered disciplines via the MIT Human Insight Collaborative (MITHIC), or transforming manufacturing with the MIT Initiative for New Manufacturing (MIT INM), the TLO plays an indispensable role. Our team navigates the complex pathway of intellectual property, forge essential relationships, and cultivate and support an ecosystem where innovation can flourish, directly contributing to these vital activities.

Let us all be inspired by the boundless potential that lies within the walls of MIT. Let us celebrate the breakthroughs taking shape in research labs, in classrooms, and in academic communities across the globe. And let us recognize the collective power of our shared mission to not only confront today's challenges, but to proactively shape a brighter tomorrow.

Thank you for your unwavering commitment to this important public service.

For more information on President Kornbluth's initiatives, please visit the President's Special Initiatives website.

FROM IDEA TO IMPACT

"Ideas do not belong in your head...Stop waiting. Get the ideas out. You may fail, but while you fail, you will build new tools."[1]

— **HANK GREEN**
Commencement remarks prepared for the MIT Class of 2025

Technology Licensing Office building at 255 Main St. Cambridge, MA

EMBRACING MIT'S SPECIAL INITIATIVES

MIT's Special Initiatives are bold, cross-disciplinary efforts designed to address urgent global problems by uniting the Institute's diverse strengths—from science and engineering to policy, design, and the humanities. Inspired by President Sally Kornbluth's vision of channeling MIT's collective creativity and expertise, these initiatives foster new collaborations, accelerate innovation, and amplify MIT's impact on the world.

Each initiative brings together faculty, students, and industry partners around a shared mission—whether combating climate change, shaping the future of generative AI, advancing human health, strengthening American manufacturing, or deepening human understanding. These are not just research efforts; they are catalysts for action.

Through Special Initiatives, MIT is building a platform for sustained, meaningful progress—working across disciplines, institutions, and borders to generate real-world solutions that shape a better future.

THE INITIATIVES

The Climate Project at MIT

MIT's bold response to the global climate crisis, this initiative aims to make the Institute a leading source of transformative solutions—technological, behavioral, and policy-based—within the next decade.

MGAIC – MIT Generative AI Impact Consortium

A collaborative effort that brings together researchers and industry leaders to develop responsible AI tools that enhance human capabilities across sectors like healthcare, education, and sustainability.

MIT HEALS – Health and Life Sciences Collaborative

A convergence of MIT's top minds and external partners in biotech, pharma, and healthcare, focused on accelerating innovation and improving outcomes in human health.

MITHIC – The MIT Human Insight Collaborative

An initiative that bridges humanistic inquiry and scientific research to explore how human insight can inform and elevate solutions to today's complex societal challenges.

MIT INM – Initiative for New Manufacturing

A cross-sector collaboration advancing next-generation manufacturing technologies and systems that boost productivity, create high-quality jobs, and revitalize U.S. industry and communities.

Distributed Training and Management of AI Powered Robots using Teleoperation via Virtual Spaces

Created with funding from NSF

Case Number: #20397

This technology aligns with the goals of the MIT Generative AI Impact Consortium (MGAIC) by advancing responsible AI tools that enhance human capabilities in manufacturing. The method exemplifies MGAIC's mission by enabling more efficient human-AI collaboration—reducing the need for constant oversight while improving performance and scalability in industrial applications.

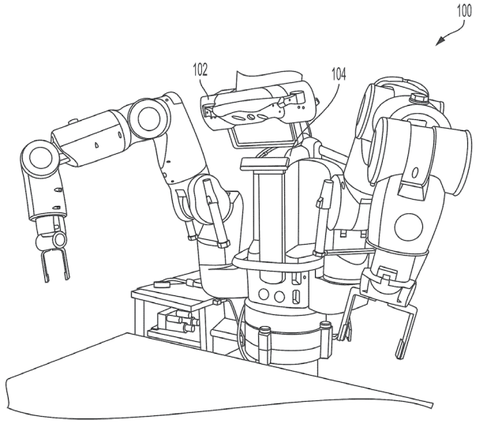


Fig.1, Patent 11,931,907

An exemplary BAXTER robot 100.

Applications

This method can be used to more quickly and reliably train AI to operate manufacturing robots. AI trained with this method requires less human time and oversight than learning from demonstration (LFD) methods and a greater success rate than AI self-supervised learning (SL) methods. This method may be applied to any manufacturing setting which employs robots for part or all of the assembly process, including automobile, electronic, and aerospace manufacturing.

Technology

The training method proposed by the invention has two primary components. The first is a virtual "waiting room" where human operators can oversee a collection of robots and select one to manipulate. The second component is a partial algorithm for incorporating human input into the robot's self-correction algorithm. The human operator and robot AI take on a "master-apprentice" dynamic, where the robot attempts to perform a task. If it fails a specified number of times or is not confident in the results the human operator is signaled. They can then take control of the robot to perform the task. The AI will learn from the way the operator performed the task and be able to replicate the effort unaided in the future. Thus, a single operator can be responsible for multiple robots by watching the "waiting room" and responding when an individual robot needs help with a task.

Advantages

- Seamless incorporation of human feedback in manufacturing robot algorithms
- More efficient than other methods of AI training
- Higher task completion rates
- Less human intervention in the training process

License →
patents.mit.edu

Drinkable, Tough Hydrogels for Gastrointestinal Applications

Jointly owned with Brigham & Women's Hospital with funding from the Bill & Melinda Gates Foundation

Case Number: #24642

This technology aligns with the goals of MIT HEALS by introducing a drinkable hydrogel formulation that transforms into a protective solid in the stomach, enabling sustained and localized drug delivery. By making oral administration easier for patients who struggle with traditional pills or capsules and improving the effectiveness of therapies, this innovation advances MIT HEALS' goal of accelerating healthcare solutions that enhance patient outcomes and quality of life.

Applications

This technology is a method for oral drug delivery involving the administration of pharmaceutically acceptable fluids to a patient in drinkable form. These fluids then partially or fully solidify within 15' in the stomach to form a slow or sustained drug release article. This drinkable formulation allows for easier oral administration of drugs in a liquid format which transitions to a solid state within the stomach while encapsulating the active agent(s), optimizing drug release over time while providing protection against the harsh environment of the stomach.

Technology

This method can utilize either one or two compositions. If a singular composition is used, it is formulated to thicken and solidify when exposed to pH conditions in the gastrointestinal tract. In the case of two separate compositions, the first fluid contains crosslinkers, and the second fluid contains hydrogel precursors and pharmaceutical agent. When these fluids are mixed within the stomach, they polymerize to form a double network hydrogel. The patient drinks the first fluid followed by the second, allowing the mixture to harden to form an excipient containing the active pharmaceutical agent(s). The compositions and methods were enabled with crosslinked alginate and four-arm PEG-maleimide hydrogels for sustained releases of both viable enzymes and probiotic bacteria in vivo using large animal model systems (porcine). The biocompatible devices remained within the stomach for up to 24 hours prior to dissolution.

Advantages

- Drinkable formula allows for easy drug administration
- Capable of transitioning from liquid to solid within the stomach
- Solid state protects the drug against the harsh gastric environment
- Longer gastric retention, allows for co-encapsulation, and improves control of API release kinetics

License →
patents.mit.edu

Vibration Absorber for Power tools

Created with funding from Boeing

Case Number: #21428

This technology supports the mission of the MIT Initiative for New Manufacturing (MIT INM) by introducing a lightweight, cost-effective vibration absorber that enhances both worker safety and tool performance. By improving ergonomics and reducing strain in repetitive manufacturing and industrial tasks, this innovation helps enable more sustainable and human-centered production environments—key priorities for advancing next-generation manufacturing systems.

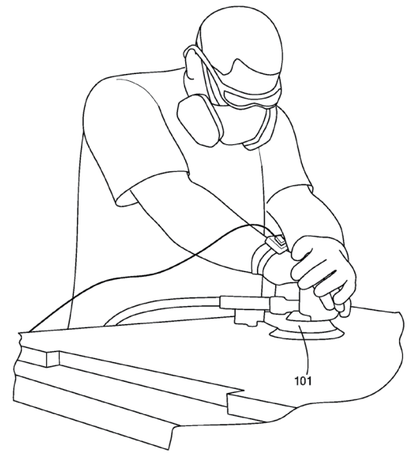


Fig.1A, Patent 11,583,972

A pictorial representation of a user using the tool of FIG. 1A.

Applications

This invention introduces a device capable of minimizing the vibration transfer between power tools and a user's hand. It has numerous applications in industries that require repetitive use of vibrating machinery, including construction, woodworking, and automotive repair.

Technology

The vibration absorber is comprised of an adjustable adapter with a core of closed cell liquid filled foams (CCLFF). The CCLFF includes a material containing a viscoelastic polymer (e.g., UV cured acrylate) and a liquid (e.g., polyethylene glycol), which can be dispersed into the polymer, with the liquid by volume ranging between 0 to 50 percent. The device additionally comprises of a tool contact surface and a connection mechanism which adheres to the adapter to the power tool. To prevent liquid from leaking onto the user's hand or surrounding device, a sealing layer of a viscoelastic material with 0 percent liquid may encircle the CCLFF, enhancing the adhesion of durable, rubber-like materials to the adapter. To secure the tool to the adapter, the surface of the selected section can be adhered through either friction fit or clips and interlocks.

Advantages

- Reduced costs due to streamlined casting and molding process.
- More lightweight than traditional vibrational dampening materials.
- Durable surface for easy cleaning and dust removal.
- Moldable depression in the material allows for easy gripping.

License →
patents.mit.edu

FY2025

FACT SHEET

Moving innovations and discoveries from the lab to the marketplace for the benefit of the public and to amplify MIT's global impact.

623
U.S. Patents Filed

282
Patents Issued

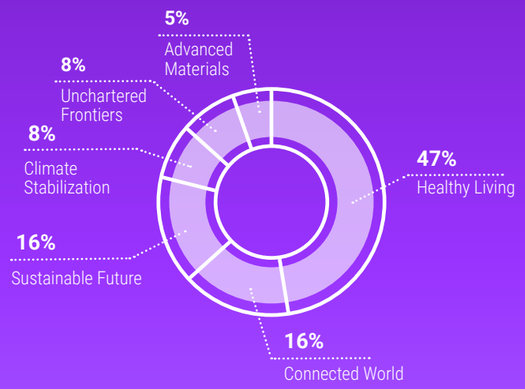
494
International Patents Issued

$539
THOUSAND
Trademark Licensing

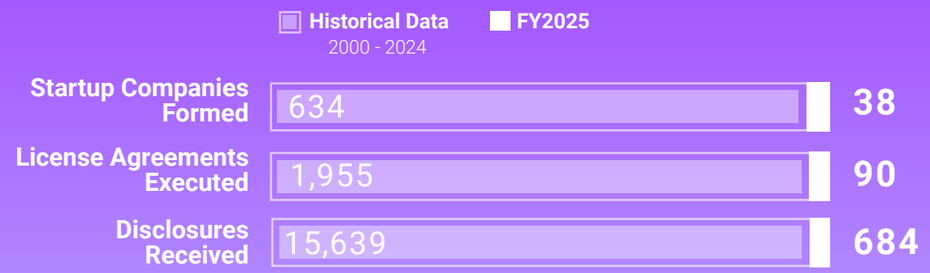
3,934
Active U.S. Patents

$60.9
MILLION
Total Licensing & Equity Revenue

Impact Area of Startup Companies



GROWTH THROUGH FY2025



FY2025

TECHNOLOGY TRANSFER LIFE CYCLE

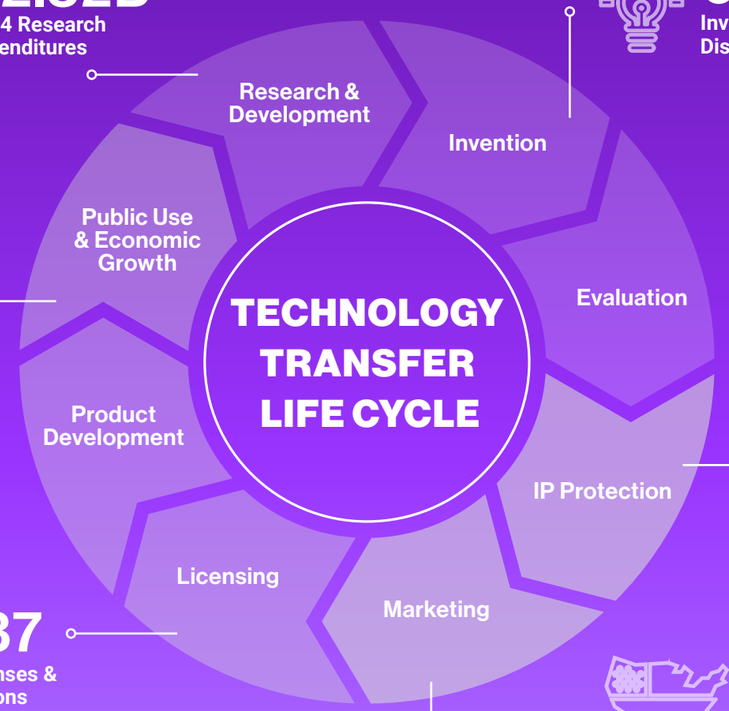
BENEFITING SOCIETY AND THE ECONOMY

Every year university research yields discoveries with commercial potential. Technology transfer professionals manage the complex process of shepherding ideas from the lab to the marketplace—from evaluating and protecting discoveries to commercializing the inventions through new and existing companies.

$2.32B
FY24 Research Expenditures

684
Invention Disclosures

38
Startups Formed



623
New U.S. Patent Applications Filed

137
Licenses & Options

282
U.S. Patents Issued

2,849
Total Technologies on Website

CODE, CURIOSITY, AND CPUS: THE MIT STORY BEHIND NEURAL MAGIC

MIT Technology Licensing Office

With a spark of MIT ingenuity, Neural Magic turns neuroscience research into a commercial success, accelerating machine learning efficiency – and startup momentum.

Neural Magic, an AI startup sparked by research at MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL), is changing how machine learning models operate at scale. What began as an effort to map mouse brain neurons has grown into a commercial platform that turbocharges large language models (LLMs), first on CPUs, and more recently by extending that efficiency to GPUs. The company's path reflects not only MIT's deep well of technical expertise but also the steady guidance of its Technology Licensing Office (TLO), which helped move the idea from paper to product.

The story starts in 2013, when Nir Shavit, a professor in MIT's Department of Electrical Engineering and Computer Science, known today for his shaggy hair, bold glasses, and relaxed presence that belies the intensity of his ideas, set out to reconstruct neurons from dense stacks of electron microscope images. The challenge? Turning petabytes of visual data into a usable neural map. "What we needed was software capable of analyzing massive amounts of visual data, something far beyond what standard tools could handle," he says.

Image by Neural Magic

Nir Shavit, co-founder of Neural Magic and professor of Electrical Engineering and Computer Science at MIT.[2]

To solve that challenge, Shavit and co-founder Dr. Alexander Matveev developed a software engine called XNN, designed specifically to run convolutional neural networks (CNNs) efficiently on standard multi-core CPUs. Rather than relying on expensive GPUs, XNN made use of compiler-level optimizations, parallel processing techniques, and mathematical shortcuts to accelerate the most intensive parts of neural network computation. Imagine trying to render high-resolution video or run complex simulations on a basic laptop—tasks that would typically crash or lag without specialized hardware. XNN is like a smart engine that rewrites the rules so even an ordinary machine can handle intensive computations smoothly.

This approach paid off. With XNN, the team was able to process data using everyday CPUs while still matching the performance of NVIDIA's Pascal GPUs. By rethinking the software instead of investing in more hardware, they demonstrated that powerful AI doesn't have to be tethered to specialized machines. It can run faster, cheaper, and more accessibly—opening the door for research labs and applications that might not have the resources for high-end equipment.

FROM BREAKTHROUGH TO BUSINESS

By 2018, Shavit and his collaborators saw an opportunity to commercialize the research. Working with MIT's TLO, the team secured an equity-only license to launch Neural Magic. "We wanted MIT as a partner," Shavit says. "The TLO brought structure and credibility to our early-stage planning, and a lot of clarity to what's otherwise a very complex process."

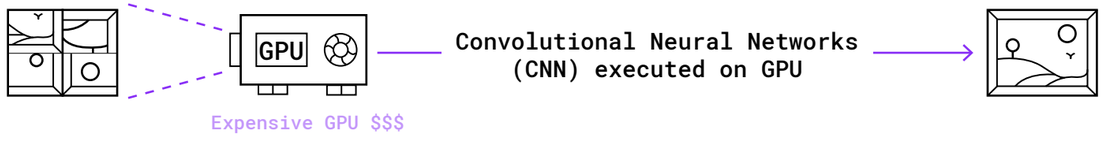
Kevin Hogan, a TLO licensing officer who has supported Neural Magic's IP and partnership work, sees Neural Magic as a blueprint for effective tech transfer. "Licensing IP isn't just about agreements," he explains. "It's about creating alignment, between inventors, the Institute, and the company, so innovation can scale without delay."

Still, getting to that point wasn't without hurdles. At one stage, the research team had to quickly rewrite the CPU algorithmic techniques into leading GPU kernels. Armed with MIT's support and a strong IP position, Neural Magic caught the attention of investors. Andreessen Horowitz, NEA, the local VC Pillar and others quickly backed the startup, which began by optimizing machine learning inference on CPUs, a cost-effective alternative to expensive GPU clusters.

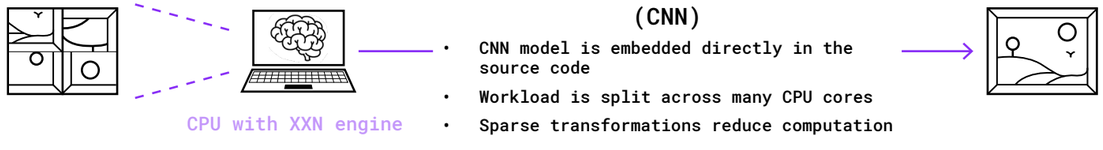
LICENSING MIT TECHNOLOGY

Licensing MIT technology "XNN: Convolutional Neural Network (CNN) Execution Engine for Connectomics" gave Neural Magic a starting point to push CPU-based deep learning forward.

AI Image Processing Without XNN:



AI Image Processing With XNN:



Concept illustration by MIT Technology Licensing Office

MARKET TURNS, NEURAL MAGIC PIVOTS, RED HAT ACQUIRES

As large language models began reshaping the AI landscape, Neural Magic adapted. Its team brought the same focus on efficiency to GPU-based inference, contributing core algorithms to VLLM, an open-source project embraced by industry leaders like NVIDIA, AMD, Red Hat, and others. The company's ability to reduce the cost and latency of AI workloads soon became its competitive edge.

In early 2025, Red Hat completed its acquisition of Neural Magic, marking a defining moment in the company's evolution. What began as a niche research effort at MIT had now become a critical piece of an industry leader's AI strategy. Today, Neural Magic's technology lives on inside Red Hat's expanding AI infrastructure, extending the reach of an idea first sparked at MIT.

MIT'S IMPACT: STRUCTURE, MOMENTUM, AND TRUST

Throughout the journey, MIT has been more than a starting point. It's been a source of trust. The Institute's name gave Neural Magic credibility in its earliest conversations with funders. The TLO gave it the structure to launch well, and scale responsibly.

"MIT's TLO is often the first call for researchers interested in commercializing their work," says Hogan. "We work hard to help translate big ideas into viable impact that align with the Institute's mission."

Neural Magic's trajectory, from neuroscience challenge to startup success, offers a glimpse into how MIT's innovation ecosystem works. And at the center of this story is Shavit himself—whose blend of theoretical insight and practical engineering helped transform a tangle of brain data into a new kind of computing company. His story is a reminder that sometimes, breakthroughs happen not in giant leaps, but in persistent, practical steps—backed by the right partners at the right time.

MIT TECHNOLOGY LICENSING OFFICE

Big ideas belong in the world. If you're part of the MIT community and have developed a technology, start by disclosing it here.

Submit Disclosure →
tlo.mit.edu

Looking to license groundbreaking MIT innovations? Visit patents.mit.edu to explore technologies and connect with our team.

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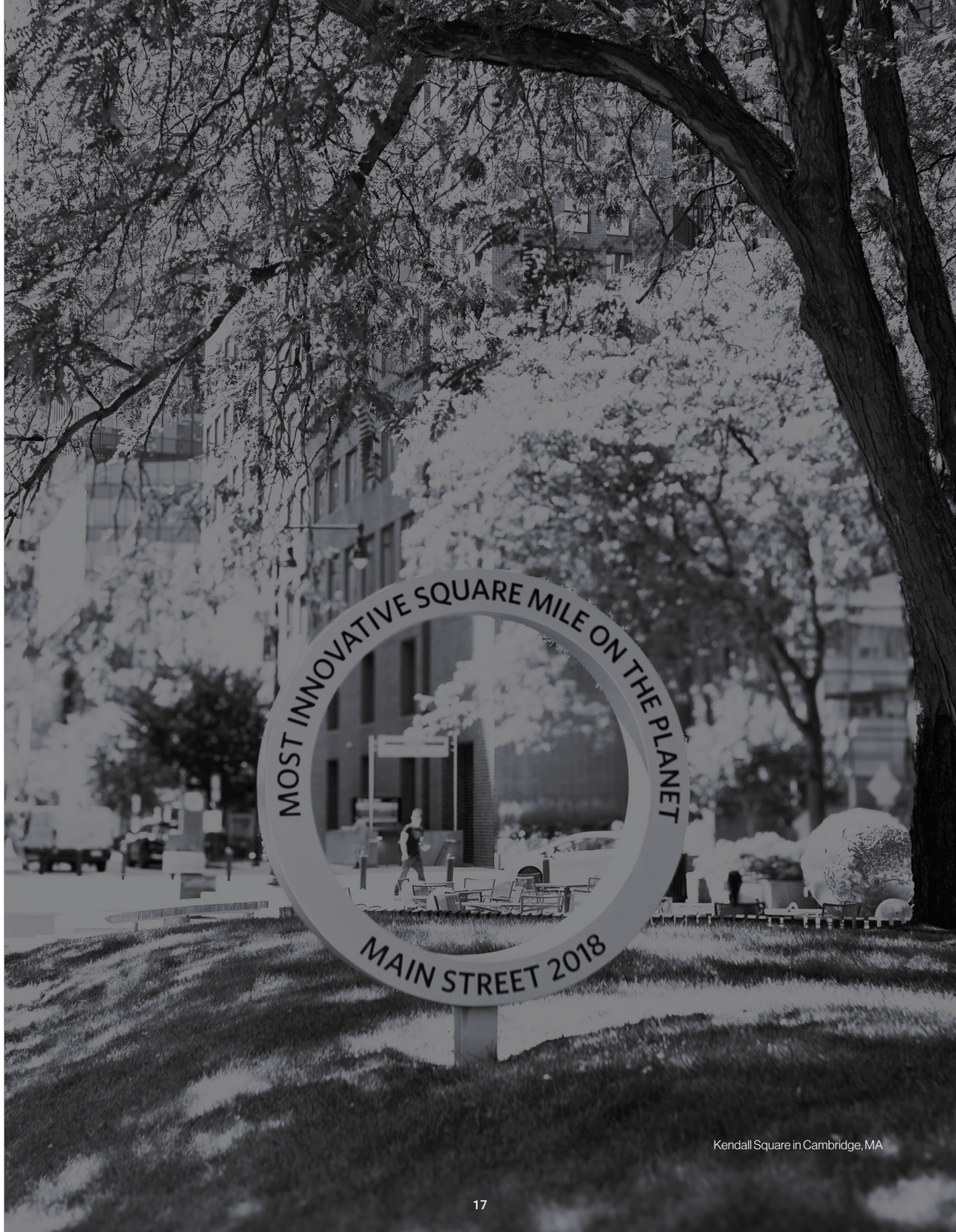


Kendall Square in Cambridge, MA

DEFENDING INNOVATION: MIT TLO JOINS NATIONAL ADVOCACY FOR TECH TRANSFER

MIT Technology Licensing Office

As shifting federal policies and funding cuts begin to have significant negative impact on the future of research commercialization, university tech transfer offices are stepping up to protect the innovation economy. In early 2025, the MIT Technology Licensing Office (TLO) joined a national effort to make the case for tech transfer on Capitol Hill.

Representing MIT TLO as part of a delegation organized by the Association of University Technology Managers (AUTM), TLO Associate Director of Intellectual Property Jonathan Hromi traveled to Washington, D.C. to advocate for policies that preserve the essential role of research institutions in fueling discovery and entrepreneurship.

The visit came at a critical moment to address challenges facing the academic research community, while also supporting federal policy proposals that would improve protections for inventors and clarify what qualifies for patent protection.

“The same IP system that enabled the launch of companies like NeuroBionics, which is advancing neuromodulation therapies through fiber-based bioelectronics, and Active Surfaces, which is developing flexible printable electronics, is under pressure,” said Hromi. “What we wanted policymakers to see is that research doesn’t turn into real-world solutions by accident. It takes structure, expertise, and a patent system that works.”

MIT was one of many voices from the broad innovation ecosystem, including major research universities, hospitals, and incubators. The delegation met with staff from two congressional offices, including those of Representatives Jake Auchincloss and Seth Moulton, to highlight how university startups and federally funded research drive local economies and national progress.

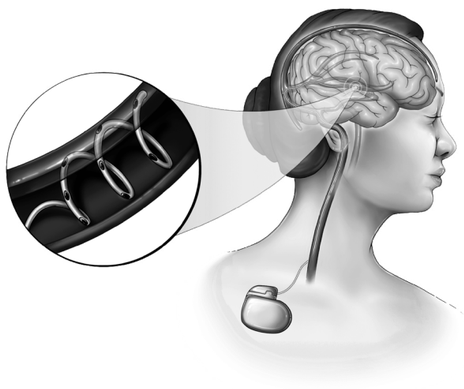


Image by Neurobionics

A hair-thin, flexible bioelectronic fiber developed by NeuroBionics that seamlessly integrates with the body to sense and modulate neural activity using electrical, chemical, and mechanical signals.[3]

Recent licenses from the MIT portfolio underscore this impact. In 2025 alone, MuscleMetrix, co-founded by Professor Hugh Herr of the MIT Media Lab, licensed technology that enables prosthetic limb control using magnetic beads and external sensors. Neurobionics, co-founded by Professor Polina Anikeeva of the Department of Materials Science and Engineering and the McGovern Institute for Brain Research, secured rights to fiber-based devices designed for bioelectronic therapy. Active Surfaces, a startup commercializing work from Professor Vladimir Bulović of the Department of Electrical Engineering and Computer Science and the MIT.nano facility, licensed technology for printing electronic components onto flexible materials. And Cartesian Systems, co-founded by Associate Professor Fadel Adib of the Department of Electrical Engineering and Computer Science and the Media Lab, licensed RFID-based tracking technology to improve inventory management in retail and logistics.

Looking back at the last decade, dozens of groundbreaking startups have emerged from MIT labs, these are just a few in a long line of MIT startups translating federally funded research into real-world impact across health, sustainability, computing and beyond.

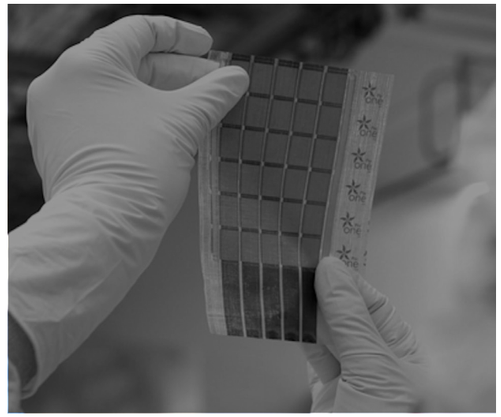


Image by Active Surfaces

A thin, flexible solar material developed by Active Surfaces, designed for scalable mass production using roll-to-roll semiconductor printing technology.[4]

Image by Pivot Bio

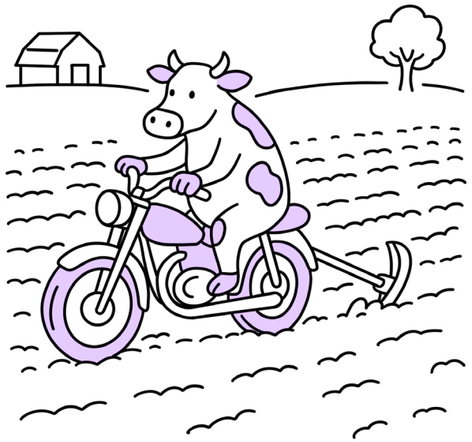
Pivot Bio’s PROVEN® 40, a microbial nitrogen fertilizer that delivers steady, weather-resistant nutrition directly to corn roots during critical growth stages.[5]

Participation in such policy-related activities is supported by the MIT Washington Office, with input from peer institutions and campus stakeholders. These ongoing conversations help address emerging issues in intellectual property and research commercialization. As federal policy evolves, MIT TLO remains committed to advancing frameworks that move innovations from lab to marketplace, ensuring the next generation of discoveries reaches the people who need them.

UNEXPECTED INVENTIONS:
A FUN LOOK AT MIT INNOVATION

At the MIT Technology Licensing Office, we encounter a remarkable range of inventions, from world-changing breakthroughs to wonderfully unexpected innovations. Some technologies surprise us not just with their utility, but with their sheer originality. To celebrate this spirit of creative ingenuity, we've illustrated a few standout inventions—because sometimes, the best way to showcase innovation is with a smile.

Explore more unexpected technologies at patents.mit.edu.



"The future is now."

Case #20304

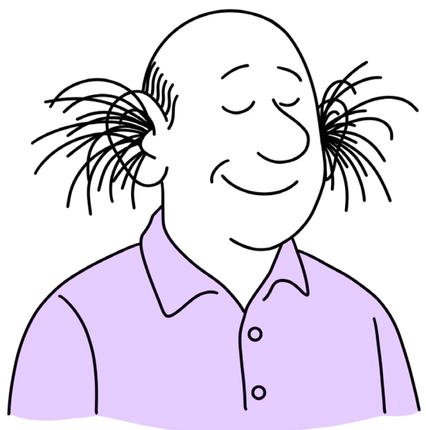
"Mechanized Alternative to Draft Animals in Farms"

This invention is a versatile three-wheeled vehicle that functions both as a motorcycle-style mode of transportation and a compact farming tool. With two vertically aligned wheels and a third wheel offset to the side, it offers both balance and maneuverability on rough terrain. A farming attachment can be positioned in various locations on the vehicle to perform tasks like digging, planting, or plowing. Designed for rural and small-scale farmers, it provides an affordable, adaptable alternative to traditional farm machinery.

Case #17900

"Compositions Systems and Methods for Generating Inner Ear Hair Cells for Treatment of Hearing Loss"

This technology is a method for helping the inner ear regenerate the tiny hair cells that are essential for hearing. It works by triggering specific stem-like cells in the cochlea to multiply while keeping their ability to later develop into functional hair cells. These cells are key to translating sound into signals the brain can understand—but once damaged, they typically don't regrow. This breakthrough could pave the way for regenerative therapies to treat hearing loss caused by noise, aging, or injury.



"Ahh, that's better."

"Oh yeah, that's native Pig Latin for sure."

Case #19818

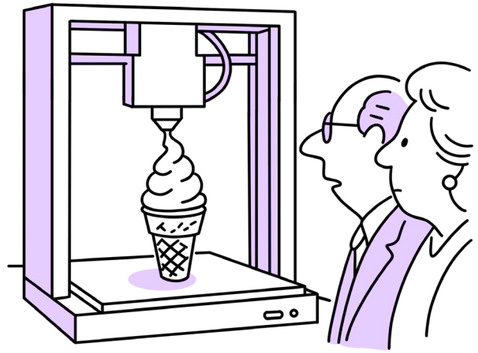
"Predicting Native Language from Gaze"

This technology uses eye-tracking and machine learning to predict a person's native language based on how they read English, offering a new way to study cross-linguistic influence in language comprehension. By analyzing gaze patterns from readers of different native languages, the system can accurately distinguish between language groups—even closely related ones like Spanish and Portuguese. It provides a novel tool for linguistic research, educational assessment, and even forensic applications. Unlike traditional methods focused on written or spoken language, this approach reveals how language is processed in real time through the eyes.

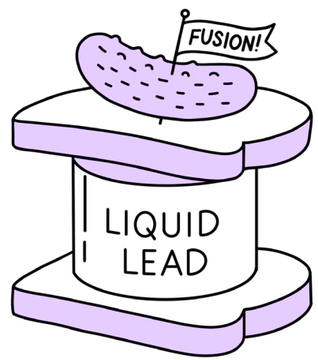
Case #17297

"Ice Cream 3D Printing via FDM"

This technology enables 3D printing of ice cream using a modified FDM system with a cooled chamber and liquid nitrogen jets. By maintaining the material in a frozen state and locally heating the extruder to prevent clogging, the system prints custom shapes without compromising texture. It expands traditional 3D printing capabilities to include materials with melting points below room temperature. This innovation opens up new possibilities for personalized frozen desserts and novel food design.



"And for dessert, our chef will prepare a prototype"



"The only sandwich that requires a containment field."

Case #22157

"Liquid Sandwich Vacuum Vessel for Magnetic Fusion"

This invention describes a "liquid sandwich" vacuum vessel for magnetic confinement fusion, where two rigid outer layers—the "bread"—contain a molten, non-structural material—the "cheese"—such as lead. The inner "bread" layer surrounds the fusion plasma and conducts electricity, while the outer layer is corrosion-resistant and interfaces with neutron shielding. During fusion disruptions, excess energy is absorbed by the molten "cheese," protecting the structural walls and allowing them to remain thin. This design offers a safer, more efficient way to contain plasma in fusion reactors.

A YEAR OF NEW MILESTONES

CELEBRATING LICENSEES: REACHING NEW MILESTONES

The journey from invention development to commercialization is fraught with pitfalls and challenges, making every step forward a noteworthy achievement. Transitioning from the lab to the marketplace requires persistence, innovation, and strategic vision. Join us in celebrating the remarkable progress and achievements our life science and physical science licensees have made over the past year, leveraging their MIT intellectual property to transform cutting-edge research into real-world solutions.

AgZen

AgZen, co-founded by MIT alumnus Vishnu Jayaprakash and spun out of MIT in 2022, has closed a $10 million Series A round led by DCVC Bio to expand its precision agriculture platform. AgZen's flagship product, RealCoverage, is the first system to optimize droplet coverage on crops in real time, enabling 30–50% pesticide savings while improving yields.

Ankyra Therapeutics

Ankyra Therapeutics has dosed the first patient with a visceral solid tumor in Part 2 of its Phase 1 clinical trial for ANK-101, marking a major milestone in advancing its anchored immunotherapy platform. ANK-101, a locally retained IL-12 therapy, is designed to activate immune cells within the tumor microenvironment while minimizing systemic toxicity. This expansion of the ANCHOR trial opens the door to treating deeper, less accessible tumors using interventional procedures. The study will evaluate the safety, optimal dose, and early signs of clinical activity for patients with advanced solid tumors.

Boston Metal

Boston Metal successfully ran its largest molten oxide electrolysis reactor to date, producing over a ton of steel without generating carbon emissions. This achievement marks a critical step toward scaling a clean alternative to traditional blast furnaces and positions the company to begin industrial-scale demonstrations by 2027.

Commonwealth Fusion Systems

Commonwealth Fusion Systems, an MIT spinout co-founded by Professors Dennis Whyte, Zach Hartwig and a team of former MIT students, has announced plans to build the world's first grid-scale fusion power plant in Chesterfield County, Virginia. Expected to come online in the early 2030s, ARC will generate 400 megawatts of clean, carbon-free electricity using MIT-developed superconducting magnet technology.

Elicio Therapeutics

Elicio Therapeutics has completed enrollment in its Phase 2 AMPLIFY-7P trial of ELI-002 7P, an off-the-shelf cancer vaccine targeting seven common KRAS mutations in pancreatic cancer, and successfully passed its event-driven interim analysis with positive safety and efficacy signals. The study, which enrolled 144 patients at high risk of relapse after surgery, is now continuing as planned toward a final disease-free survival analysis in Q4 2025.

Finwave Semiconductor

Finwave Semiconductor has partnered with GlobalFoundries to scale its breakthrough GaN-on-Si E-mode MISHEMT technology for high-volume production at GF's Vermont facility. The collaboration combines Finwave's cutting-edge RF performance with GF's established 90RFGaN platform to address next-generation wireless needs, including 5G, 6G, and Wi-Fi 7.

JetCool

JetCool Technologies has been acquired by Flex to strengthen its AI-era infrastructure offerings. The acquisition builds on the companies' prior collaboration and positions Flex to deliver integrated, scalable liquid-cooled systems to meet rising thermal and power demands.

QuEra

QuEra, a spinout from MIT and Harvard, has raised $230 million to scale its neutral-atom quantum computing platform—marking one of the largest single investments in the quantum sector to date. QuEra's technology traps and manipulates rubidium atoms using laser light to serve as qubits, enabling highly scalable, energy-efficient quantum operations.

Syntis Bio

Syntis Bio, a clinical-stage biopharmaceutical company, reported positive preclinical and first-in-human data for its lead candidate, SYNT-101, a once-daily oral treatment for obesity that mimics the hormonal effects of gastric bypass by redirecting nutrient absorption in the small intestine. Presented at the 2025 European Congress on Obesity and Weight Management, the results showed strong safety, tolerability, and early efficacy signals. The company also closed a $38 million financing, including an oversubscribed $33 million Series A and $5 million in NIH grant funding, to advance SYNT-101 through Phase 1 studies and initiate trials for SYNT-202, an oral enzyme therapy for the rare pediatric disorder homocystinuria.

Tissium

TISSIUM has received FDA De Novo authorization for COAPTIUM® CONNECT with TISSIUM Light, the first sutureless, atraumatic system approved for peripheral nerve repair. Built on TISSIUM's programmable polymer platform—originally developed at MIT and Brigham & Women's Hospital—this milestone enables U.S. commercialization of a solution that simplifies nerve coaptation while preserving tissue integrity. In a recent clinical study, the device achieved 100% procedural success with patients regaining full function and reporting no pain after 12 months.

CELEBRATING NEW STARTUP LICENSEES

Every year, numerous startup companies license MIT technology and embark on a journey to create real-world impact. These startups are not just utilizing existing innovations; they are taking the cutting-edge technologies developed at MIT and pushing the boundaries of what's possible through further development and application. This year's showcase highlights the diverse array of startups that have harnessed MIT's intellectual property to create new products, services, and solutions that address pressing global challenges.

We believe in pioneering a brighter, more sustainable future through groundbreaking innovation. Our impact areas are carefully curated to reflect the pressing challenges and immense opportunities of our times.

Healthy Living
Research advancements for healthier and happier lives.

Advanced Materials
Transforming industry using substances with unique properties or capabilities.

Sustainable Future
Green choices for a brighter future.

Connected World
Enabling global connectivity and communication.

Climate Stabilization
Mitigation and adapting for the effects of climate change.

Uncharted Frontiers
Emerging technologies and unexplored frontiers.

Active Surfaces

Active Surfaces is developing ultra-thin, flexible solar panels using MIT-patented roll-to-roll semiconductor printing technology to enable solar integration across urban and structurally limited environments.

AlterEgo AI

AlterEgo AI is developing a silent communication interface that detects internal speech, enabling seamless, hands-free interaction between devices and people.

CellArray

CellArray is advancing high-throughput DNA damage analysis with CometChip®, a high-throughput platform that streamlines DNA damage detection using a 96-well microwell array for consistent and scalable comet assays.

Crabi Robotics

Crabi Robotics is revolutionizing maritime efficiency with a fully autonomous hull-cleaning robot that removes biofouling in-transit, boosting fuel performance without drydock time or operational delays.

Electrified Thermal Solutions

Electrified Thermal Solutions is reinventing industrial heat with electrically conductive firebricks that store and deliver renewable energy as ultra-high-temperature heat.

Emvolon

Emvolon repurposes car engines into modular, low-cost chemical reactors that convert greenhouse gas emissions into carbon-negative fuels and chemicals like green methanol and green ammonia.

Found Energy

Found Energy is developing a clean energy platform that unlocks carbon-free power from abundant aluminum, transforming it into a practical, transportable fuel for scalable, sustainable energy solutions.

MuscleMetrix

MuscleMetrix is developing mobile sensing electronics for muscle monitoring and neural interfacing, using small, minimally invasive magnetic beads to track muscle movements with high precision.

Myconic

Myconic is developing sustainable building materials made from mycelium—the root structure of oyster mushrooms—to offer a biodegradable, low-impact alternative to traditional construction bricks.

NeuroBionics

NeuroBionics is developing ultra-thin, flexible bioelectronic fibers that serve as next-generation neural interfaces, enabling seamless integration with the human body to advance bioelectronic medicine and expand access to neuromodulation therapy.

Nocturnal

Nocturnal is developing a wearable sleep mask that combines vestibular stimulation with real-time sleep stage monitoring to enhance sleep onset and quality using advanced neurostimulation technology.

Nona Technologies

Nona Technologies is developing lightweight, easy-to-use water purification devices powered by proprietary Ion Concentration Polarization (ICP) technology that can provide access to fresh water anywhere.

Omnipulse Biosciences

Omnipulse Biosciences is leveraging SEAL (StampEd Assembly of polymer Layers) technology to develop single-injection drug delivery systems, enabling scalable production for clinical use.

OptiCore

OptiCore delivers high-performance optical transceivers and WDM passive devices for telecom and data centers, ensuring fast, reliable connectivity with robust quality standards, local support, and a resilient global supply chain.

List only includes new startups who are licensees as of June, 2025.

MAPPING MIT'S LOCAL STARTUP IMPACT

A key driver of Massachusetts' economic vitality and quality of life is the translation of MIT research into real-world products and services that benefit the public. One of the most powerful ways this happens is through startup formation: turning breakthrough ideas developed in MIT labs into companies that address critical global challenges and fuel local industry.

Today, approximately 200 active companies headquartered in Massachusetts are based on MIT-licensed technologies. Many originated just blocks from campus and have grown into anchor companies in their fields. Some have been acquired by larger firms, extending the reach of MIT innovation across the regional and national economy.

The Cambridge-Boston area has emerged as one of the world's most dynamic startup ecosystems, thanks in large part to MIT's research, talent, and longstanding support for entrepreneurship. With a dense network of research institutions, venture capital firms, accelerators, and established industry leaders, the region offers an unmatched environment for launching and scaling science- and technology-based ventures.

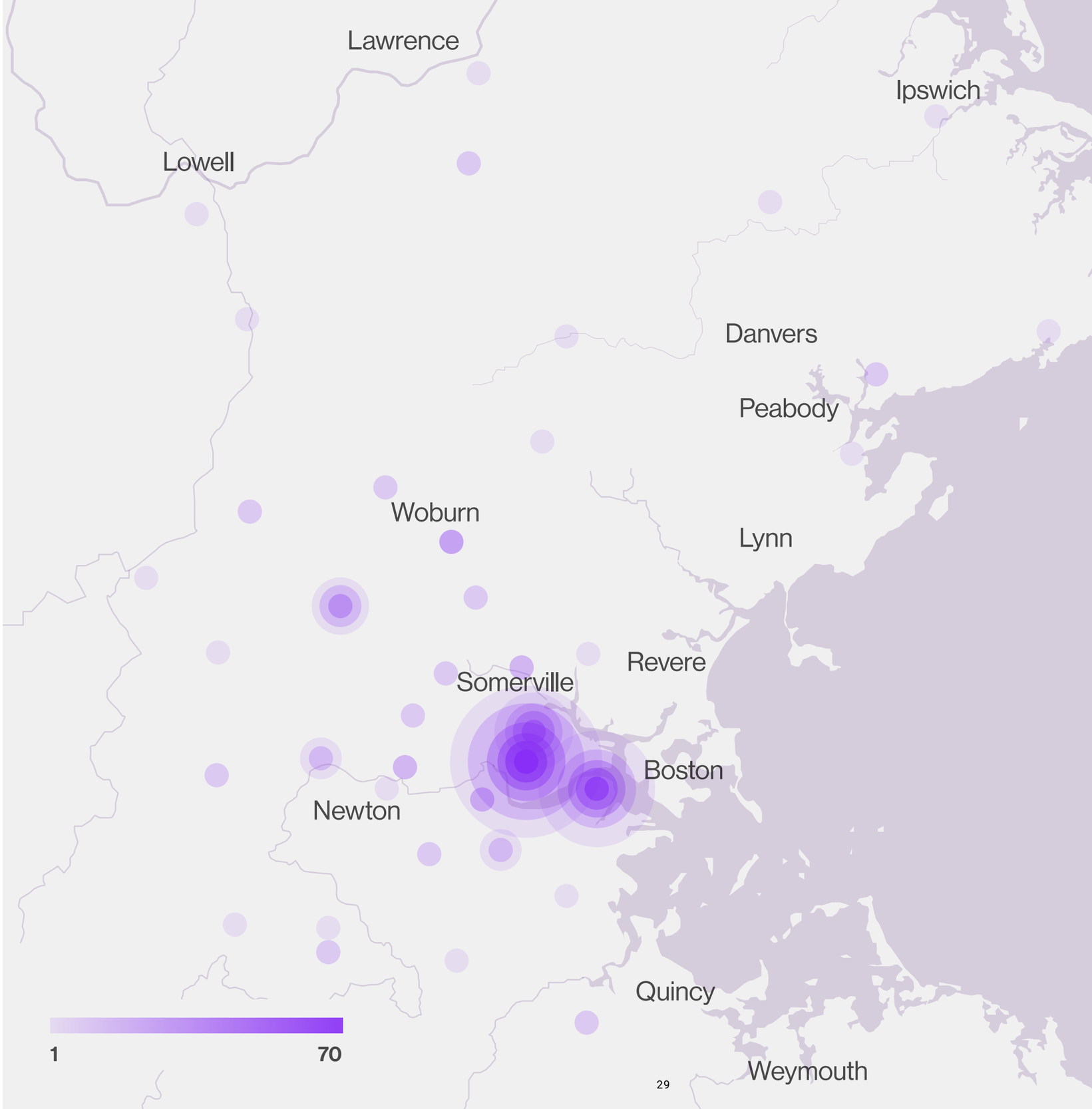
MIT startup licensees are advancing key sectors vital to the Commonwealth's economic future, including:

- Manufacturing, construction, and heavy industry
- Health and biotechnology
- Energy for power and industrial heat
- Semiconductors, photonics, quantum, and telecommunications
- Robotics, automation, and logistics
- Emergency response, national security, and defense

These startups do more than commercialize technology. They create high-quality jobs, attract investment, and help Massachusetts maintain its global leadership in innovation. Many are located in innovation districts throughout Cambridge, Kendall Square, Boston's Seaport, and beyond—integrating into the vibrant fabric of the state's economy.

MIT's influence on the startup ecosystem is not just local. It's catalytic. By licensing cutting-edge research and empowering entrepreneurial faculty, students, and researchers, the Institute helps seed the next generation of transformative companies. In doing so, MIT continues to strengthen the Commonwealth's economic resilience and global competitiveness.[6]

The following map depicts local Massachusetts' companies with active startup licenses. Licenses includes agreements of the following type: License, Option, License by Agent, and Option by Agent.



TLO HOSTS IVY TECH

Each year, a member institution of the IvyTech group hosts a dynamic two-and-a-half-day convening, welcoming 5–6 representatives from peer technology transfer offices to engage in strategic dialogue and share best practices. IvyTech provides a unique forum for advancing the field of academic innovation through collaborative exchange and thought leadership.

In October 2024, MIT was honored to host the annual IvyTech gathering. The event featured keynote addresses from then USPTO Deputy Director Derrick Brent and MIT Professor Andrew Lo, as well as a compelling welcome from Mark Gorenberg, MIT's Corporation Chair and the Managing Director of Zetta Venture Partners. Discussions covered a wide range of timely topics, including AI and research data, sponsor compliance, TTO metrics, open-source licensing, and non-traditional financial models.

The gathering brought together over 100 professionals who are shaping the future of university technology transfer. Through focused breakout sessions, table talk discussions, and panels featuring leaders in academia and industry—including experts in fusion energy—participants explored new strategies for navigating the evolving innovation landscape. MIT TLO was proud to facilitate this exchange of expertise and to celebrate the people driving impact at the intersection of research, commercialization, and public benefit.

Technology transfer professionals in attendance at the annual IvyTech gathering

Anne White
Associate Vice President for Research Administration
Distinguished Professor of Engineering, MIT School of Engineering

Jonathan Hromi
Associate Director of Intellectual Property, MIT Technology Licensing Office

Derrick Brent
Former Deputy Director, United States Patent and Trademark Office

Boston Dynamics
Spot® - The Agile Mobile Robot

Andrew Lo
Professor of Finance
Director of the Laboratory for Financial Engineering, MIT Sloan School of Management

Lesley Millar-Nicholson
Executive Director, MIT Technology Licensing Office

Cordellia Sita
Senior Licensing & Business Development Officer, MIT Technology Licensing Office

Mark Gorenberg
MIT Corporation Chair
Managing Director, Zetta Venture Partners

Fusion Panel Participants
Robert Stoner, Reed Sturtevant, and Dennis Whyte

IAP 2025: ADVANCING INNOVATION EDUCATION

Independent Activities Period (IAP) is a four-week term each January when MIT faculty and students step away from regularly scheduled classes to pursue flexible teaching, learning, and independent research. IAP presents a valuable opportunity to share insights from the tech transfer ecosystem and connect the MIT community with expert researchers who have navigated commercialization pathways firsthand.

INNOVATION TO IMPACT SPEAKER SERIES

This virtual speaker series is designed to guide researchers through the process of turning breakthrough discoveries into real-world impact. Hosted by the TLO, each session highlights practical strategies and critical considerations for those exploring entrepreneurship.

Venture Capital 101 with Osage University Partners:

This seminar explored the fundamentals of venture capital, specifically tailored for startups emerging from university research. Attendees gained a comprehensive overview of the VC life cycle, investor motivations, and the key elements of startup fundraising. The session also covered best practices for building investor relationships, developing compelling pitches, and navigating equity ownership—all critical for academic entrepreneurs preparing to engage with venture capital.

Maximizing Your Invention Disclosure:

TLO team members offered a practical walkthrough of how to prepare high-quality invention disclosures. The session covered what information to include, how to avoid common pitfalls, and why thorough disclosures are essential for satisfying sponsor requirements and securing IP protection. Attendees left with actionable guidance to improve submission quality and accelerate the path from research discovery to commercial impact.

Before You Open Source:

In this session, TLO Open Source experts Aidan Fowler and Kevin Hogan explored how Open Source software (OSS) is transforming innovation in fields such as AI and Machine Learning. The discussion covered key considerations for releasing OSS, including license selection, community contribution management, and commercialization strategies. The speakers also addressed how to grow and sustain OSS projects emerging from academic research, offering insights into business models and industry partnerships.

GOLDEN SPEAKER SERIES

The Golden Speaker Series features in-person talks with members of the MIT community who have made significant contributions to innovation and entrepreneurship. Nominated by their TLO Licensing Officers, each speaker shares lessons learned from translating research into real-world solutions.

Ariel Furst

“Engineering Equitable Technologies”

Paul M. Cook Career Development Assistant Professor of Chemical Engineering, Ariel Furst delivered a talk titled “Engineering Equitable Technologies,” highlighting her interdisciplinary work at the intersection of electrochemistry, biology, and materials science. She discussed how cracked concrete can be healed with engineered microbes, the challenges of microbe transport, and future applications of microbes in sustainable agriculture. A co-founder of Seia Bio, Professor Furst offered an inspiring look at how scientific innovation can be leveraged to advance both human and environmental health.

Sertac Karaman

“Deep Tech Entrepreneurship”

Professor of Aeronautics and Astronautics at MIT and director of the Laboratory for Information and Decision Systems (LIDS), Sertac Karaman presented on “Deep Tech Entrepreneurship.” Drawing on his experience as co-founder of Optimus Ride, he shared insights from his entrepreneurial journey—covering startup formation, IP navigation, securing $100M in funding, and ultimately achieving a successful acquisition. His talk provided valuable guidance on scaling deep tech ventures and fostering innovation in complex, high-stakes sectors

EXPERIENCE IAP 2025

Watch the Recordings →
youtube.com/@mit_tlo

Images courtesy of the MIT Institute Office of Communications and MIT News

Image courtesy of the MIT Institute Office of Communications

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[2] Nir Shavit. *Headshot of Nir Shavit, computer scientist and co-founder of Neural Magic*. Photograph. Neural Magic, 2024.

[3] NeuroBionics. *evStim schematic illustrating clinical impact*. Concept diagram by Sofia Cina. Illustration. NeuroBionics, 2024.

[4] Active Surfaces. *Thin, flexible photovoltaic material enabled by roll-to-roll semiconductor printing technology*. Photograph. Active Surfaces, 2024.

[5] Pivot Bio. *PROVEN 40 product box*. Photograph. Pivot Bio, 2024.

[6] MIT Office of the Vice President for Research, July 10, 2025.

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UPCOMING EVENTS

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EXPERIENCE OUR IAP 2025

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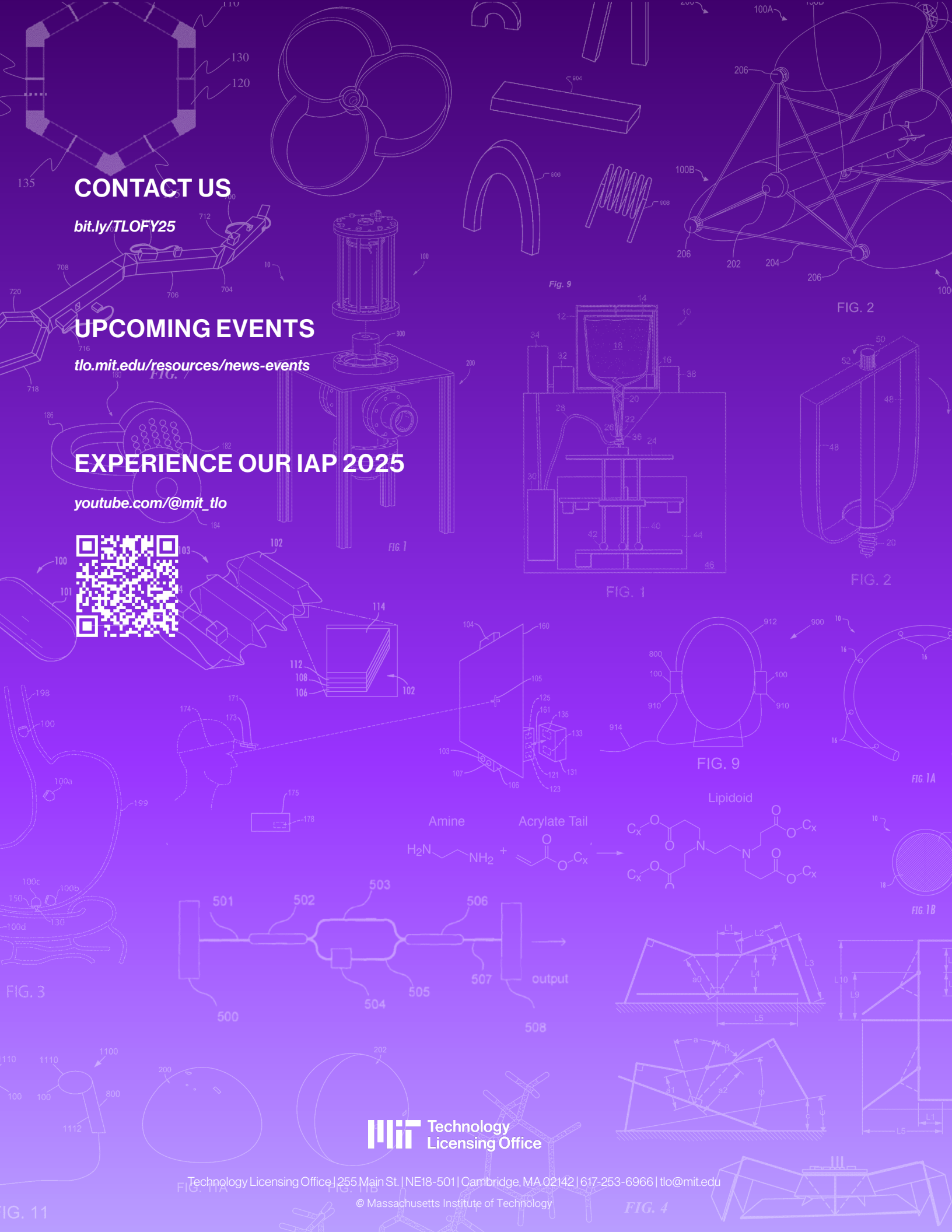

Technology Licensing Office

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