Office of the Vice President for Research

Research Administration Practices (RAP) Sessions

MIT TLO and Intellectual Property

Lesley Millar-Nicholson, *Executive Director, OSATT TLO, Office of the Provost*

March 21, 2024

Introductions

Lesley Millar-Nicholson

Executive Director, OSATT Technology Licensing Office, Office of the Provost

Technology Licensing Office

Office of Strategic Alliances and Technology Transfer

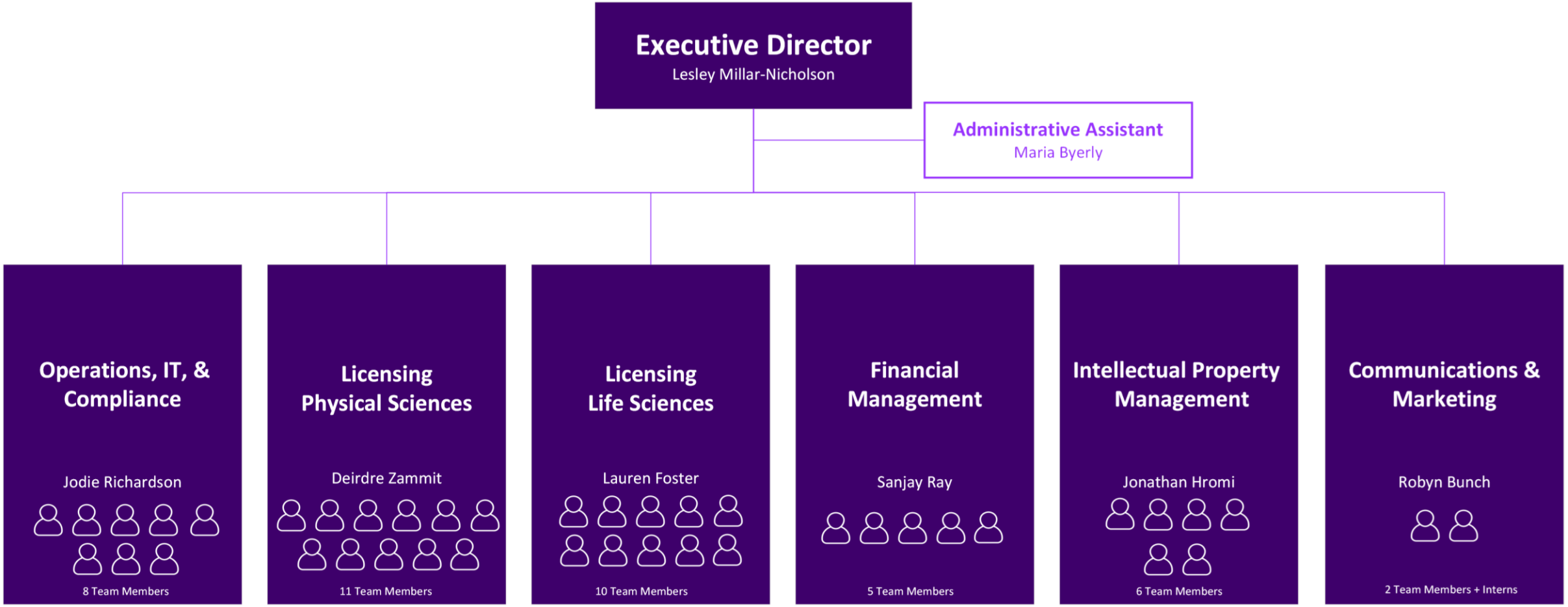
Improving the World, Transforming Lives

The Role of Technology Transfer

Lesley Millar-Nicholson, Exec. Director MIT TLO

March 21, 2024

Technology Licensing Office



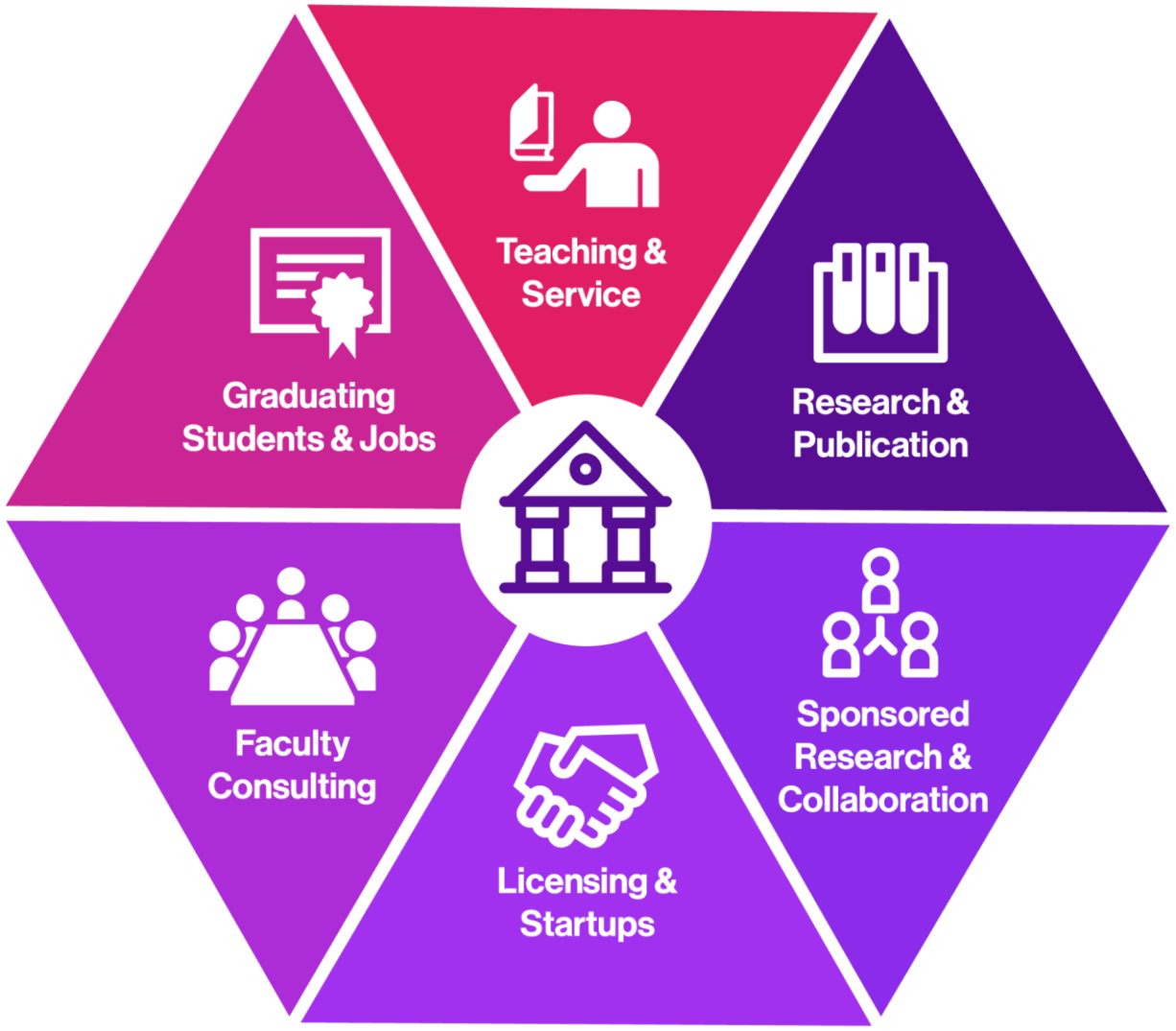
In the spirit of MIT's mission to advance knowledge, the TLO moves innovations and discoveries from the lab to the marketplace for the benefit of the public and to amplify MIT's global impact.

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.

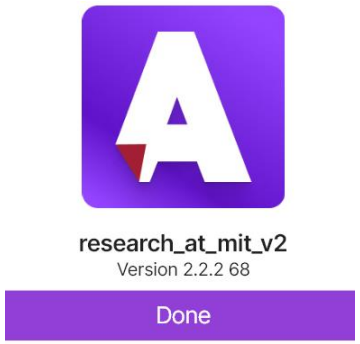
Technology Licensing Office

Mission Statement

All Types of Technology Transfer



What is IP related Technology Transfer?



https://research.mit.edu/research-resources/researchmit-atlas-app-researchers

Research@MIT

Lesley Millar-Nicholson

My Research
Submitted Proposals
Awards
NDA/DUA
Funding
Protocols
TLO Disclosures
TLO Cases
Helpful Info
Need Help
About Research@MIT
Logout
Collapse

Helpful Information

Invention Disclosure

Submit your disclosure to TLO as early as possible in the inventive process, and definitely before a public disclosure of the idea or invention.

Technology Disclosure Forms

Technology Licensing Office (TLO)

Learn more about Intellectual Property at MIT, the technology transfer process and commercialization, our patenting approach, available technologies for licensing, and other helpful information.

TLO Website

currently available research opportunities from various funding sources (federal, foundation, private) and a mechanism to connect with other researchers from various institutions.

Pivot-RP

MIT IP Policies

The aim of the Institute's policy on patents, copyrights, and other Intellectual Property is to make available Institute technology to industry and others for the public benefit, while providing recognition to individual inventors and encouraging the prompt and open dissemination of research results.

IP Policies

Factors when Patenting

Lifecycle of an Award

Submitting an NDA/ DUA request

Kuali Coeus (KC) Learning Bundle

Technology Transfer Process

Process used to move knowledge and discoveries to the general public. It can occur through publications, educated students entering the workforce, exchanges at conferences, and relationships with industry.

Technology Transfer Process

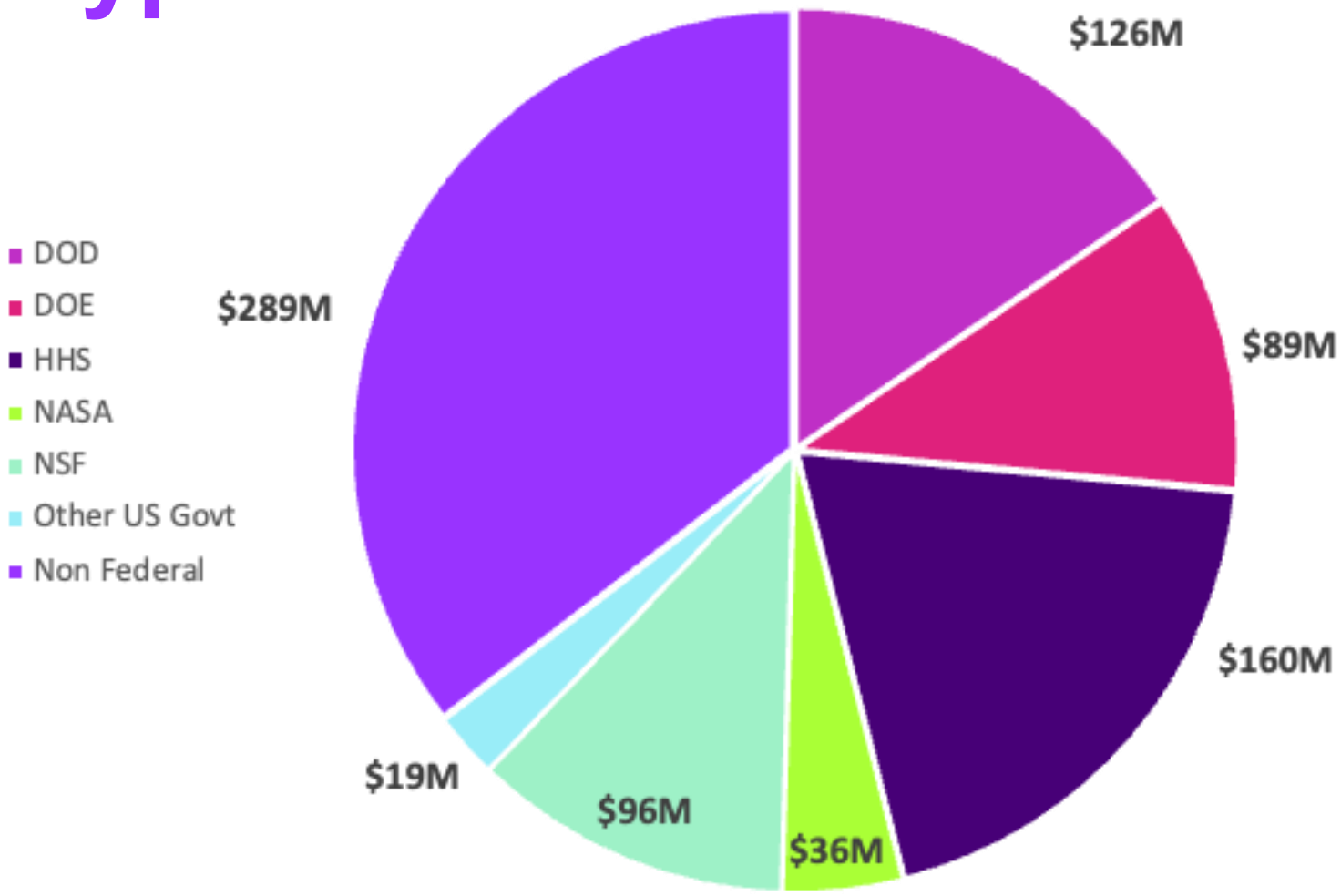
IPIA

The Invention and Proprietary Information Agreement (IPIA) protects MIT's intellectual property rights and allows inventors

Impact of Technology Transfer

- Convert inventions to solutions that benefit society
- Supply of commercially available solutions to US Government
- Support local economy (and beyond); job creation
- Support entrepreneurship/training future business leaders
- Encourage industry collaborations
- Enhance MIT educational experience/attract faculty and student talent
- Revenue from options/licenses shared among MIT DLCs, inventors

MIT FY23 Campus Research Expenditures
By Sponsor Type



Source: MIT Brown Book, 2023

Bayh Dole Act

Obligations of Contractors (recipients of Federal Funding)

Allows Universities and other Non-Profits to retain IP ownership of federally funded inventions.

- IP Owner's Obligations
  - Protect the IP
  - Commercialize the inventions
  - Submit progress reports to funding agency
  - Give preference to small businesses that demonstrate capability
  - Require substantial US Manufacture from licensees
  - Share resulting revenues with inventors

https://uscode.house.gov/view.xhtml?path=/prelim@title35/part2/chapter18&edition=prelim

MIT IP Policy – IP Ownership
Section 13.1 of MIT Policies

- MIT owns Intellectual Property (IP) generated by one or more of the following:
  - Using MIT Funds;
  - In the performance of a Required IPIA Signatory's MIT employment;
  - In the performance of an MIT collaboration, research or other sponsored agreement;
  - For Required IPIA Signatories who are no employees, faculty, graduate students, postdoctoral associates or fellows, as a result of research or educational opportunities made available by or at MIT (collectively, an "MIT Opportunity").

https://policies.mit.edu/policies-procedures/130-information-policies/131-intellectual-property

MIT IP Policy – IP Assignment

IPIAs

The Inventions and Proprietary Information Agreement (IPIA) form transfers ownership of intellectual property to MIT as determined by MIT Policy and must be signed by all persons participating in research and other opportunities at MIT.

- The TLO is responsible for retaining current and accurate IPIAs on file for all faculty, graduate students, postdoctoral associates, fellows, visitors, research affiliates, staff affiliates (where appropriate), contingent workers, and contractors at Lincoln Lab, and—in certain circumstances only—undergraduates.
- Sign via ATLAS, docusign (except Lincoln Lab currently)
- Copy sent to signatory, TLO, confirmation to DLC, or Dept HR
- Contact: tlo-ipia@mit.edu.

MIT IP Policy
Royalty Sharing

- Inventors / Authors / Contributors receive one-third of net revenue
    - *after recovery of patent and licensing costs and a 15% administrative fee, as well as any payments due to any third parties such as joint owners*
- The remainder is shared between DLCs and the MIT General Fund after adjustments made to recover any remaining unreimbursed patent costs
- Revenue share to DLCs is calculated based on a formula related to the proportion of revenue the DLC related inventions contributed to the total revenue for the year.
- Deposited to a royalties account in August/Sept of each year for prior year licensing revenue.

Sponsorship – US Government Sponsorship Basics

- **Patentable Inventions**
  - MIT notifies Government sponsor of invention disclosure and MIT must decide if it will file a patent application within two years
    - If MIT retains title and files a patent application, Government has Government Use Rights, consideration free.
    - If MIT does not retain title, MIT waivers its ownership in the invention to the Government agency that sponsored the research; the Government agency may decide to file a patent application on behalf of the Government.
- **Copyrighted Works:** US Government typically has Government Use Rights or even Unlimited Rights which allows the Government to reproduce, prepare derivatives, and distribute copies to the public, and perform publicly and have or permits others to do so.

Sponsorship – Non-US Government Sponsorship Basics

- If Industry Sponsored, sponsor(s) has the right to request a commercial license:
  - Non-exclusive license
  - Exclusive license
- Other types of sponsorship, e.g. foundations may also have IP terms including:
  - MIT sharing MIT's commercial licensing revenue with the foundation.
  - Diligent development of technology to ensure foundation interests are addressed.

Sponsorship – Non-US Government Sponsorship Basics

TLO Role in Industry Sponsored Research Agreements

- Background IP Reviews
  - Process revamped Oct 2023. Fewer reviews needed.
  - Only undertaken when stipulated by contract, or request from sponsor
  - Bottlenecks- getting responses from faculty about BIP questions
  - To request a BIP review, or have a BIP related question: tlo-bip@mit.edu
- OSATT Core and TLO
  - OSATT Core through Catalysts, Strategic Transactions Officers and Alliance Managers work with TLO on IP related terms - https://osattcore.mit.edu/
  - TLO manages resulting IP through the invention disclosure process

MIT TLO Evaluation of Invention Disclosures

- Intellectual property considerations:
  - Patentability (utility, novelty, non-obviousness)
    - Patentable Subject Matter: 1) processes, 2) machines, 3) manufactures and compositions of matter
    - Non-Patentable Subject Matter: laws of nature, natural phenomena, and abstract ideas
  - If we pursue a patent application, are we likely to get broad claims?
  - Is it possible to detect use of the technology in the final product?
  - Is patenting the right route for maximizing access to the technology?
  - Are US patent rights sufficient?

Licensing to Startups & Established Companies

Startups are often a good fit for a technology when:

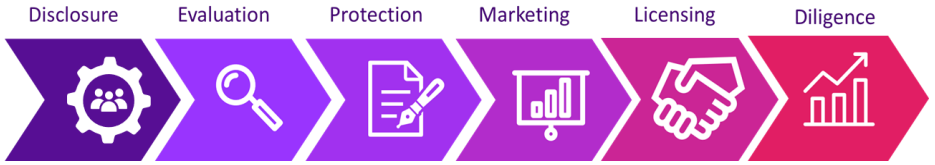
- Technology platform
- Inventor(s) support transfer to startup
- Some startup advantages:
  - Focus/commitment
  - Flexibility of small organization
  - Often more tolerant of risks associated with early-stage technology

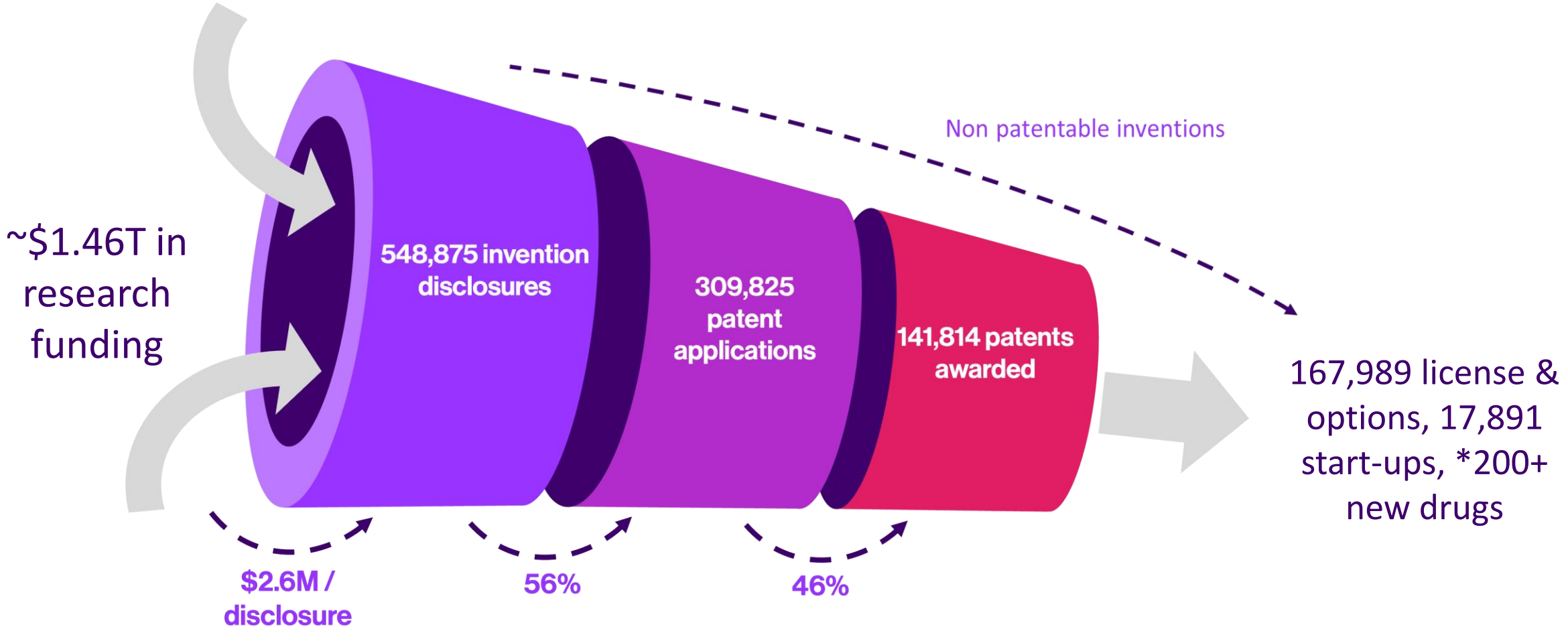
Established companies often a good fit for technology when:

- Technology is improvement to company product /service or fulfills a strategic need
- Some established company advantages:
  - Product development experience, resources and capacity
  - Established access to supply chain
  - Established manufacturing capability
  - Established access to customers
  - Experience within market, including understanding of regulations

Tech Transfer Lifecycle

Input to Output

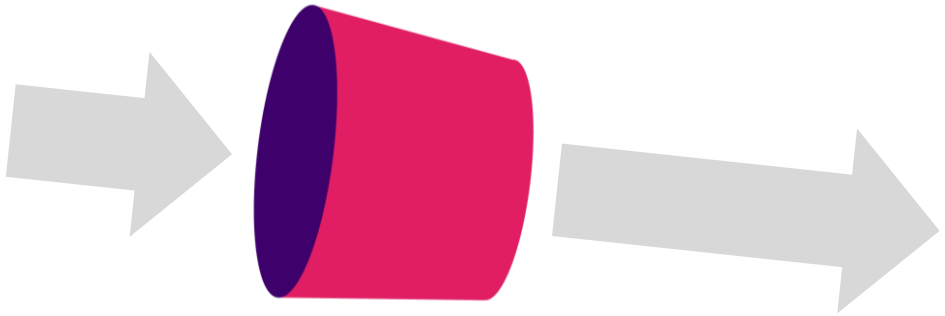




Source: AUTM Licensing Surveys (FY91 – FY22),
* data is FY22

Gross Licensing Income- from University IP

167,989 license & options, 17,891 start-ups, 200+ new drugs



$58.2B

For every $1 research funding, licensing inventions creates 4 cents back to the university

Plus Jobs, products, services, economic development and more innovation

Source: AUTM Licensing Surveys (FY91 – FY22)

Products/Companies made possible through University Tech Transfer

GARDASIL 9
Human Papillomavirus
9-valent Vaccine, Recombir

gradiant

ORNA™

Google

Akamai

Commonwealth Fusion Systems

Alnylam

JUNO THERAPEUTICS

inkbit

vmware by Broadcom

Kite
A GILEAD Company

editas MEDICINE

Beam

XTALIC

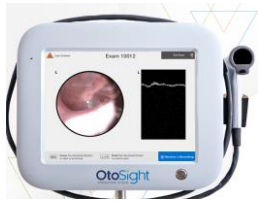
Remicade
INFLIXIMAB

casgevy
(exagamglogene autotemcel)
suspension for IV infusion

BostonDynamics

Blu-ray Disc

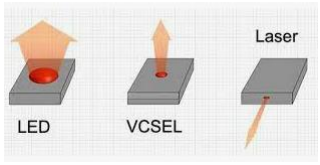
CRISPR THERAPEUTICS



Cordera

DVD VIDEO™

COUMADIN® 5mg
Tablet
28 tablet
Varfarin sodyum 5mg
ZENTIVA



Lex Machina

DEPHY
BEYOND NATURE

CAMBRIDGE MOBILE TELEMATICS

Select Startups & Companies licensing MIT IP

Foundation Alloy
LYNDRA THERAPEUTICS
gradiant
Commonwealth Fusion Systems
Genentech
A Member of the Roche Group
Einblick
ORNA™
SwiftSolar
THERMAL BATTERY
Akamai
Ambri
SiTration
glyphic//bio
Alnylam
inkbit
Tome BIOSCIENCES
vmware by Broadcom
STRAND THERAPEUTICS
editas MEDICINE
Beam
XTALIC
ground truth.ag
EYENETRA
RLP.
LiquiGlide
VERDOX
InfiniteCooling
Boston Dynamics
ottobock.
Cache DNA
CAMBRIDGE MOBILE TELEMATICS
DEPHY BEYOND NATURE
IQuEra
AeroShield
AyarLabs
Pfizer
MilliporeSigma
datacebo
LARMORBIO
4M THERAPEUTICS


TECHNOLOGY LICENSING OFFICE
Researchers &
MIT Community
Create Inventions (IP)
PROTECTS & LICENSES
Industry & Entrepreneurs
Develop products and services for greater societal impact

Technology Licensing Office

Office of Strategic Alliances and Technology Transfer

Thank you!

www.tlo.mit.edu

Feedback

We are providing a **QR Code** for you to access a **RAS-ED feedback survey** via your phone or mobile device.

I will also provide the link https://mit.co1.qualtrics.com/jfe/form/SV_29RrXozlNvBA4Oq to access the form via the web and in a follow up email.