Learning through Doing: TLO Marketing Internship

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What is University Technology Transfer?

TLO Mission Statement

Our mission is to move 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.
The Role of the MIT Technology Licensing Office

- **Manage MIT Intellectual Property**
  - Receive and evaluate new invention disclosures
  - Identify, protect (patent), market, and license
  - Transfer materials (into and out of MIT)
  - Manage NDAs for existing MIT IP

- **Establish IP terms in sponsored research and collaborations**
  - Identify background IP in sponsored research proposals

- Manage trademarks and use of MIT name
- Assist in open-source licensing
- Distribute royalty revenue
- Educate faculty, researchers, and students
  - Seminars/workshops/programs
- Problem solve
TLO Annual Stats

FY2021 FACT SHEET

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

GROWTH THROUGH FY2021

- New U.S. Patents Filed: 358
- U.S. Patents Issued: 435
- International Patents Issued: 421
- Incoming Material Transfer Agreements: 1,265

- Historical Data: 528 (1997–2020)
- FY2021: 24
- License Agreements Executed: 3,099 (1960–2020)
- FY2021: 103
- Licenses & Options Executed: 21,921 (1940–2020)
- FY2021: 730

- Total Licensing Revenue: $87.4 MILLION

Data current as of July 2021
MIT TLO in a Nutshell

• **Staffing**
  - 54 Full-time staff, 3 temps, 2 interns

• **Functional Groups**
  - Compliance/Operations Group
  - Patent Administration Group
  - Licensing Group
  - Financial Operations Group
  - Communications Group
  - Admin Group
  - Trademark/Use of Name Group
  - IT Group
Intern’s Perspective into the Program

Communication skills development
*Communication in science is key! These skills are applicable to any career*

Career exploration
*Learn about careers in science beyond the bench/classes*

Valuable interactions with TLO professional staff
*Learn about licensing from industry experts*

Gain unique exposure and perspectives on MIT technologies
*Explore how MIT technologies are protected and commercialized*

Immerse in the exciting interaction between science, business, entrepreneurship, marketing, and intellectual property
Week in the Life of a TLO Intern

Responsibilities
• Generate non-confidential marketing briefs
• Develop marketing analysis reports
• Write social media snippets of non-confidential marketing briefs
• Other special projects as needed

Meetings
• TLO team meetings
• Weekly case meetings
• Weekly intern meetings
• TLOU workshops

In addition:
• Trainings on intellectual property and licensing
• Interactions with TLO professional staff
• Attend meetings with the inventors
Main Projects of Intern: Tech Briefs

Tech Briefs – tlo.mit.edu
- Summaries of MIT inventions
- Posted onto TLO website and other platforms to market MIT technologies

Categories for this Invention
- Water Treatment
  - Desalination
- Life Sciences
- Environment
  - Water Purification

Applications
The technology proposes the use of two-stage reverse osmosis (RO) systems for significant energy savings when purifying brackish water, seawater, and produced water.

Problem Addressed
Reverse osmosis (RO) is the leading method of desalination. RO provides secure water resources amid the increasing demand for water, reduction of water resources, and increasing pollution of water. Many current water desalination systems use a single-stage RO system, which operates at high pressure through the whole system, and therefore results in high energy consumption and operating costs. Previously, multistage RO systems have been proposed to reduce energy, but with few practical realizations. This technology proposes an optimized, two-stage RO system, with identification of the parameters needed to achieve excellent energy savings. With seawater feed (32,000 ppm), energy savings up to 52% can be achieved at 90% recovery. At higher salinity feed (128,000 ppm), the two-stage RO system proves to be more beneficial. Energy savings can become significant at only 30% recovery, and savings increase to 24% at 65% recovery.

Technology
Design of the multi-stage RO system for water filtrations
- Each stage has 1 feed stream inlet and 2 stream outlets: a permeate stream and a concentrate stream outlet
- The concentrate stream outlet of the first stage is coupled to the feed stream inlet of the second stage
- Pressure of the feed stream inlet in the first stage (P1) and pressure of the feed stream inlet in the second stage (P2), where P2 < P1 and pressures are configured so that flux of the permeate streams of the two stages has a minimum/maximum variance
- M number of reverse osmosis membranes in the first stage and N number of reverse osmosis membranes in the second stage, where MN

Advantages
- Cheaper operational cost – uses less energy to purify water than the single stage RO system
- Flexible set up – can adjust the distribution of RO membrane area between the stages and final pressures at each of the stages to achieve energy savings

Inventors
- Quantum L. Wei
  Department of Mechanical Eng.
  Read more
- Roman K. McGovern
  Department of Mechanical Eng.
  Read more
- John H. Lienhard V
  Abdul Latif Jameel World Water Security Lab/abomi, MIT
  Lab Link
  Read more

Publications
- Saving energy with an optimized reverse osmosis system
  Environmental Science, Water Technology, June 6, 2013, 3, 886-891

External Links
- John Lienhard Lab
- MIT TLC Technology Licensing Office
- USE OF MIT'S NAME & TRADEMARK
- DISCLOSE & PROTECT YOUR INTELLECTUAL PROPERTY
- LEARN ABOUT INTELLECTUAL PROPERTY
- EXPLORO MIT TECHNOLOGIES
- USE OF MIT'S NAME & TRADEMARK
- NEW TECHNOLOGIES
- INTELLECTUAL PROPERTY
- SPEAKER SERIES
- TECHNOLOGY #1677
Tech Brief Production Timeline

On average, one intern working 10 hours/week can produce 4 completed tech briefs/month.

1. Assigned or select cases
   - <10 min

2. Research available publications, TLO documents related to the case, Inventor website, etc.
   - 2-4 hours

3. Draft is reviewed by PM, 2 days. Reviewed by TLO, 1 week. Reviewed by Inventor(s), 2 weeks. Intern implements edits after each review, <30 min.
   - 3 weeks

4. Final review and publishing of tech brief conducted by PM, 2 days.
   - 2 days

Published Tech Brief
   - 1 Month
Main Projects of Intern, cont.

Marketing Analysis
• Assist TLO professional staff in determining the commercial potential (e.g. competitive landscape) for MIT technologies

Contact Potential Licensees
• Assist TLO professional staff in determining whom you can contact (e.g. companies and contact)
And don’t forget some FUN!
Candidate Qualifications

• Excellent written and oral communication skills; mastery of the English language

• Strong scientific/technical background

• Demonstrated interest in technology transfer

• Ability to research complex scientific concepts in a variety of fields and clearly and concisely synthesize the findings into a marketing summary for general audiences

• Self-motivated and an eagerness to learn
Candidate Eligibility

• Current Undergrad, Masters, PhD student, or Postdoc*
  • *MIT PhD students and Postdocs must obtain permission from their PI
    and/or faculty advisor prior to applying.

• US citizen or permanent resident

• Commitment and availability to work 10 hours/week
  • During the spring and fall semesters

• Background in life sciences, physical sciences, and/or
  business development disciplines
Program Logistics

• Spring, Summer, Fall (3 months) and/or Academic Year (9-12 months)
  • 10 hours/week minimum
  • Summer: 40 hours/week (driven by business needs)
  • Academic Year: Up to 20 hours/week during academic year

• Internship is remote and 60% of work must be performed during TLO business hours
  • Monday-Friday; 8:30am-5:30pm

• MIT Grad Students/Postdocs must get PI approval to apply

*MIT students paid job hours must not exceed maximums set by policies
Additional Opportunities

• Communications/Marketing
  • Social Media & News Writing
  • Market Research
  • Event Management and Planning
  • Graphic Design
  • Photography & Video Production

• Internship Program Optimization
  • Systems, Tools, and Function
Application Process

Submit Application Form

• Resume
• Professional writing sample
  • 1-2 pages
    • scientific journal
    • college writing
    • business writing
Application Process

If you receive an interview invitation...

• **First Round**
  • Interview with Communications & Marketing Manager

• **Second Round**
  • Sign NDA
  • Produce Tech Brief Writing Sample
Application Process

Applications due:
Spring Term: January 12, 2022
Summer Term: May 1, 2022
Fall Term: August 12, 2022

bit.ly/tlointerns
Apply Now!

bit.ly/tlointerns
Questions?

bit.ly/tlointerns