



# AUTM

## ANNUAL MEETING

MARCH 8-11, 2020 SAN DIEGO



autm  
#AUTM2020



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ANNUAL MEETING  
SAN DIEGO  
2020



# Building a Results- driven Marketing Program

Monday, March 9, 2020 10:45 AM - 12:15 PM



Marketing Successful Practices

## YOUR PANELISTS

**Brian Shedd, PhD,**  
Director of Licensing,  
Office of Technology  
Transfer and Innovation,  
University of Houston

**Eleftheria Ledaki,**  
Commercialisation  
Manager,  
Queen Mary Innovation  
Ltd, Queen Mary  
University of London

**Paul Tumarkin,** Assistant  
Director, Marketing &  
Communications,  
Tech Launch Arizona,  
The University of Arizona

**Todd S. Keiller,** Director,  
Office of Technology  
Commercialization,  
Worcester Polytechnic  
Institute



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**Worcester Polytechnic Institute**  
**Worcester, MA**

# WPI Facts and Figures

**Founded 1865**

**4400 undergraduate students**

**1700 grad students**

**Primarily an engineering school**

## The tiny tech transfer office that could

- 1) Small research base - \$33M
- 2) 67 new invention disclosures in FY 19
- 3) 11 licenses in FY 19
- 4) 2 FTE's

# TOTAL MARKET FOCUS

**Added Licensing Associate 7/1/19**  
**Primary duty is marketing**

**Invention disclosure is market driven – Need, Approach, Benefit, Competition**  
**Prior art search in disclosure: [www.searchrealfast.com/wpi](http://www.searchrealfast.com/wpi)**

**Conducted Red/Yellow/Green exercise**  
**Eliminated 28 cases**

**Rolling forecast of upcoming provisional conversions**  
**Prioritized marketing effort**

# TOTAL MARKET FOCUS

## Patent catalog

MENU Worcester Polytechnic Institute SEARCH

... → OFFICES → TECHNOLOGY COMMERCIALIZATION → PATENT CATALOG

TECHNOLOGY COMMERCIALIZATION

## Patent Catalog

WPI academic scholarship in engineering and applied science stems from a strong history of cross- and interdisciplinary research, industrial associations, and applications focused research initiatives.

The [Research at WPI website](#) describes research activities of the university departments and centers, consortia, and institutes. Collaborative efforts such as the Center for Comparative Neuro-Imaging (CCNI) with UMMC are also described therein.

Please use the box below to search our patent database.

Search by title, keyword or inventor  Research Category  APPLY VIEW ALL

Title	Research Category	Patent Application	Inventor(s)
<a href="#">Acrylic-lane Hybrid Microfluidic Platform</a>	Advanced Materials Manufacturing & Mobility, Health & Biotechnology	US 62666826	Yundong Ren, Subhrodeep Ray
<a href="#">Actuation systems and methods --</a>	Health & Biotechnology, Robotics & Cyberphysical		Christopher J. Berthelette, Matthew

## Detail of patent catalog

MENU Worcester Polytechnic Institute SEARCH

... → INTELLECTUAL PROPERTY & INNOVATION → PATENT CATALOG → ACTUATORS AND METHODS OF USE (HYDRO MUSCLE)

## Actuators and Methods of Use (Hydro Muscle)

**Description of Market Need:** Actuators which are lightweight, efficient, fluid, fast, muscle-like compliant, and cost-effective are critical for advancement of robot actuation. The Hydro Muscles presented here are simple novel actuators that meet all these requirements. Still further, they can be easily rescaled to meet desired size and preferred force and torque output. They may be utilized as modular building blocks for robots that can be rapidly assembled and utilized as either perform-alone or wearable robotic systems.

They can be an excellent educational tool for moderate-budget robotics classrooms and labs. They can utilize either air or ordinary tap water and effectively operate even at standard household pressures of about 0.59 MPa (85 psi). A single source can actuate many muscles by flow and/or pressure control.

There are many attractive applications for this technology. For example, in the medical field these muscles can be used as soft actuators for everyday assistance or for rehabilitation and physical therapy, they can be used in both labor and the military as method of augmenting strength, and they can be used as a soft-robotics alternative to virtually all rigid robotic motors and actuators.

**Description of Approach:** Hydro Muscles are fluidly actuated (utilizing either liquid or

**Inventor(s):**  
[Marko B. Popovic](#)  
[Cagdas Denizel Onal](#)  
Danil Elfrimidis  
Brian Jennings  
Gregory D. McCarthy  
Nicholas Corso

**Research Category:**  
Health & Biotechnology  
Robotics & Cyberphysical Systems  
Robotics and Health

**Patent Application Number:**  
[US 10456316 B2](#)

**Patent Status:** Published

**Case Number:** W14-030

CONTACT





**Fluid Flow Control Valve**  
**Compact Robotic Flow Control (CRFC Valve)**

**PROBLEM**

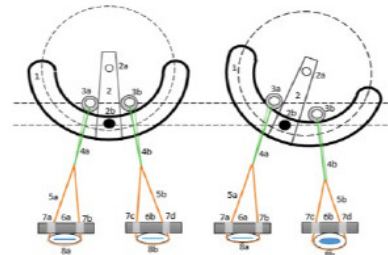
Valves are necessary to operate pneumatic and hydraulic systems. The current advanced valve market is lacking an electronically controlled proportional flow control valves that is: small, compact, lightweight, cost-effective, robust, fast, with capability for proportional flow control.

**SOLUTION**

The Compact Robotic Flow Control (CRFC) Valve is a 3-way 3-position valve and utilizes a servo to implement a choking mechanism that proportionally lessens or widens the inlet opening of the latex tubing through which fluid flows. The CRFC valve can be configured to open or close the fluid tubes by any degree between fully closed and fully open. The degree of opening can be directly controlled by the rotation angle of the servo motor. The servo increases or decreases tension in the strings constricting flow through the fluid tubes. The CRFC Valve can also work in junction with the [Hydro Muscle](#) system. When integrated, Hydro Muscles and the CRFC Valve may be utilized as modular building blocks for robots that can be rapidly assembled and utilized as either perform-alone or wearable robotic systems - [More Information](#)

**VALUE / BENEFITS**

<p>Fluid applications:</p> <ul style="list-style-type: none"> <li>wearable assistive/rehabilitative</li> <li>robotics, aerospace</li> <li>automotive</li> <li>medical devices</li> <li>pharmaceutical</li> <li>pneumatic and hydraulic machines</li> <li>agriculture</li> <li>civil engineering</li> <li>oil &amp; gas, energy &amp; power, water and wastewater treatment</li> </ul>	<p>Technical specs:</p> <ul style="list-style-type: none"> <li>small (&lt;40 cm<sup>3</sup>)</li> <li>lightweight (&lt;30g)</li> <li>cost-effective (~\$10 USD)</li> <li>fast (&lt;70ms to fully close or open)</li> <li>support flows (&gt;2.5 l/min and &gt;0.2 Ml/min for water and air respectively)</li> <li>supports pressures (&gt;100 PSI or 0.7 MPa)</li> </ul> <p>Easily customized for large and varied range of applications, can be made of different materials, re-dimensioned, and utilize a variety of servo motor units</p>
<p>Use as stand-alone valve or in combination with Hydro Muscle system</p>	<p>Superior to simple on-off solenoid valves – finely controls orifice size in a continuous fashion</p>



**WPI is looking for a partner to license and commercialize this innovation**

**Note: 'Hydro Muscle' also available to license**

**For inquiries, contact the Office of Technology Commercialization:**

**Todd Keiller**  
[tkeller@wpi.edu](mailto:tkeller@wpi.edu)  
508-831-4907

**Sarah Mahan**  
[smahan@wpi.edu](mailto:smahan@wpi.edu)  
508-831-4873

# TOTAL MARKET FOCUS

**Tech Advisors Network IP Evaluation group  
TAN for startups**

**LinkedIn to target WPI grads at license targets**

**Answer the phone!**

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Queen Mary  
Innovation



**Queen Mary Innovation  
Ltd (QMI)**

*Queen Mary University of  
London's wholly-owned  
technology transfer company*



## FACTS AND FIGURES

### University

- Five sites in London, also Europe and Asia
- 4,500 members of staff
- 26,000 students
- £144m research income
- Barts Health Trust co-located with QMUL

### TTO

2019

94 TDFs

3 AIM listed companies

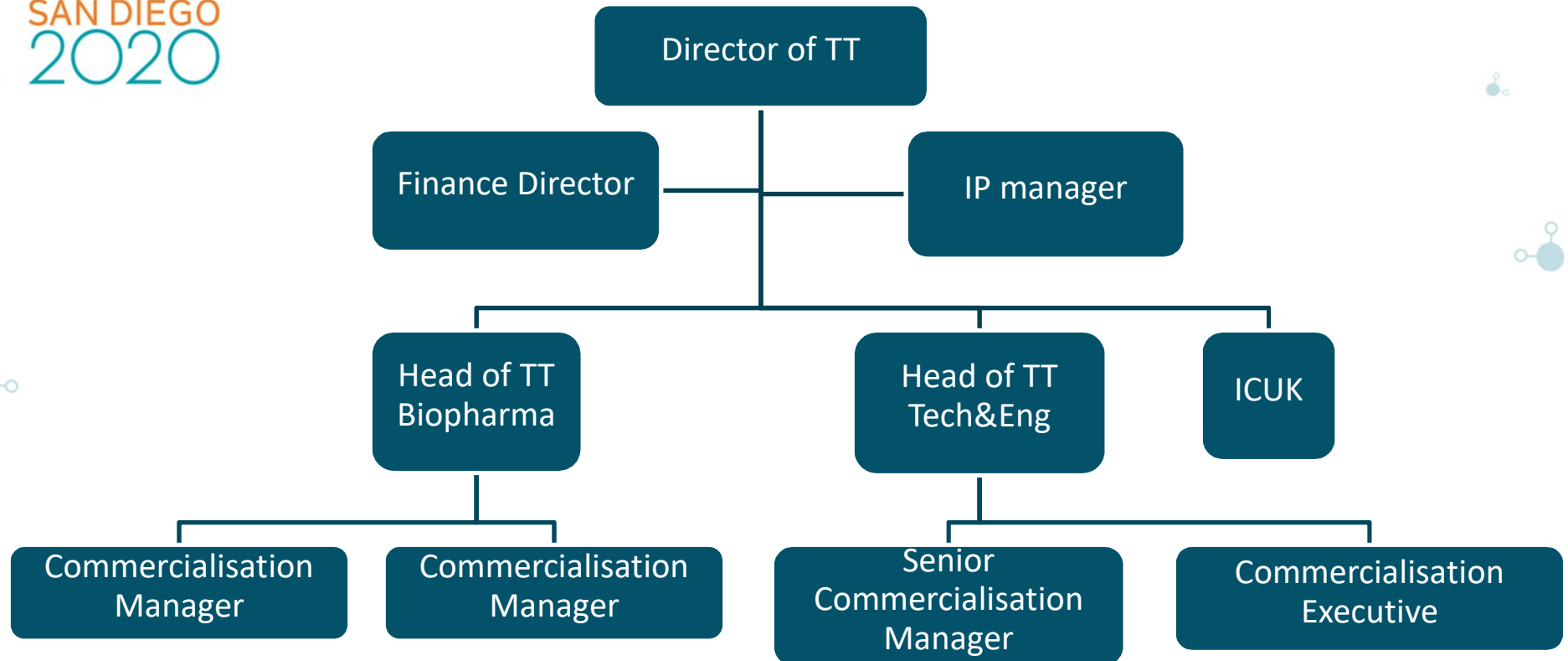
49 Patent Filings

29 Patent Grants

26

COMMERCIAL AGREEMENTS

# TTO STRUCTURE





# EXTERNAL MARKETING

- **QMI website**

- Opportunities marketing
- QMI teams updates (newsflow on licensed projects and spin- out companies etc.)

- **QMI- Industry engagement**

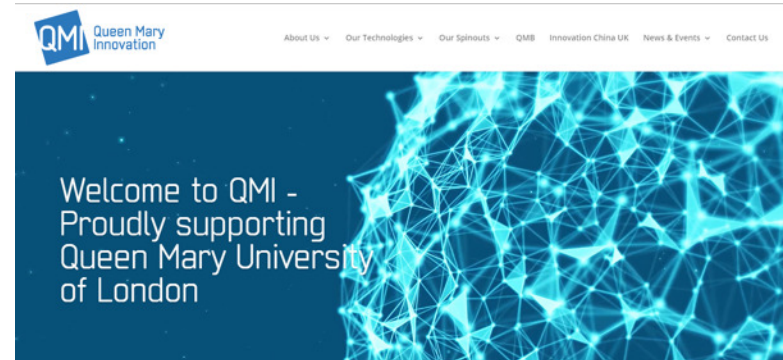
OneNucleus events- QMI co-hosting and show casing

- **Support by matchmaking platforms**

IN-PART, Inospin

- **Tradeshaw participation as a 'company'**

Testing the market by customer feedback



## MARKETING APPROACH

1

- TDF Evaluation

2

- Patent filing decision

3

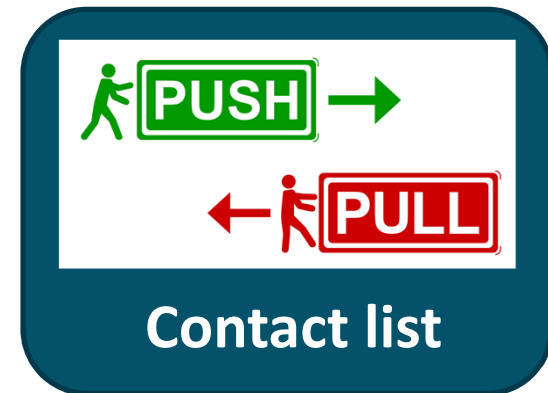
- Commercial strategy

4

- Marketing

5

- Do the deal



## IMPORTANT CONSIDERATIONS

- Personal emailing- *do your search (market intelligence)*
- LinkedIn contacts- *who have I met?*
- Academics' network- *trust your academics*
- Side marketing support: *LifeArc TT fellows*

***Reaching out is not only about marketing the technology. Feedback on technology development and developing relationships counts as much.***

***Feedback also makes TTOs reconsider their marketing strategy.***



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# UH Technology Bridge



## INNOVATION STATISTICS - FY2019

**\$67M**

Licensing  
Revenue

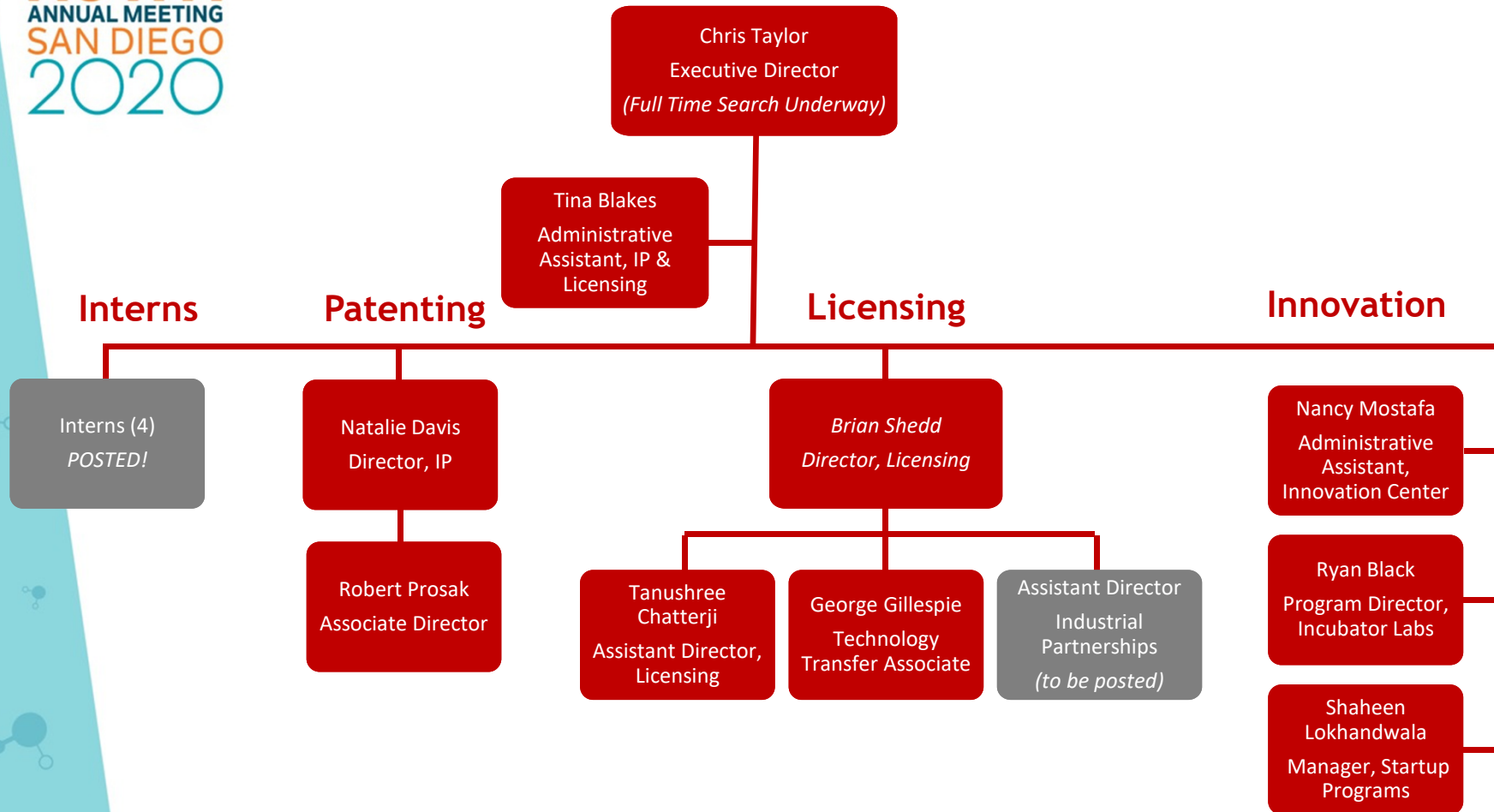
**63**

Technology  
Disclosures

**\$195M**

Research  
Expenditures



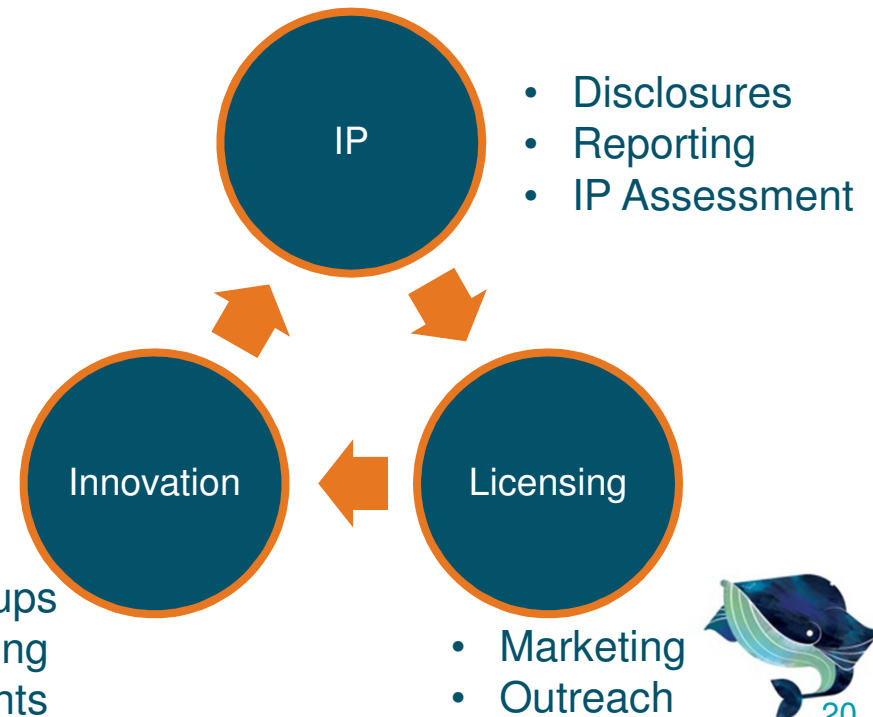


# TECHNOLOGY TRANSFER INTERNS



## Rotational Program

- 4 Paid Positions
- Grad/Undergrad
- Great Recruitment/Collaboration Opportunities
  - Wolff Center for Entrepreneurship
  - CoT Innovation
  - IPIL Law
  - CoE I&E Certificate
- Annual Cost of \$72k



# MARKETING & OUTREACH



- 1) Technology Assessment
- 2) Prepare Collateral
- 3) Identify Leads
- 4) Outreach
- 5) Follow Up
- 6) Summary



LEAD IDENTIFICATION										
Company	Company size	Location	Structure	Company Telephone	Company Web Address	Company Email	Company Description	Contact First Name	Contact Last Name	Contact Title
	Large / Medium / Small / Startup	US (provide state) / Foreign (provide country) / Multinational (provide major countries)	Public / Private / Nonprofit				Key services or products or nature of business			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										



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THE UNIVERSITY OF ARIZONA

**TECH LAUNCH  
ARIZONA**

Tucson, AZ

## Facts and Figures

**Founded 1885, Arizona's Land-grant University**

**44,000 students**

**34,000 undergraduates**

**9,900 graduates**

**Over \$687M in research expenditures**

No. 1 in astronomy and astrophysics expenditures

Top 4% of all U.S. universities in research and development expenditures

No. 20 among all public institutions and No. 35 overall

## UARIZONA FY2019 METRICS



**11** startups

**\$5.9M** in  
royalties &  
other income

**284** invention  
disclosures

**56** patents  
issued

**341** patents  
filed

**96** licenses &  
options





## History

Historically  
underperforming in  
technology  
commercialization



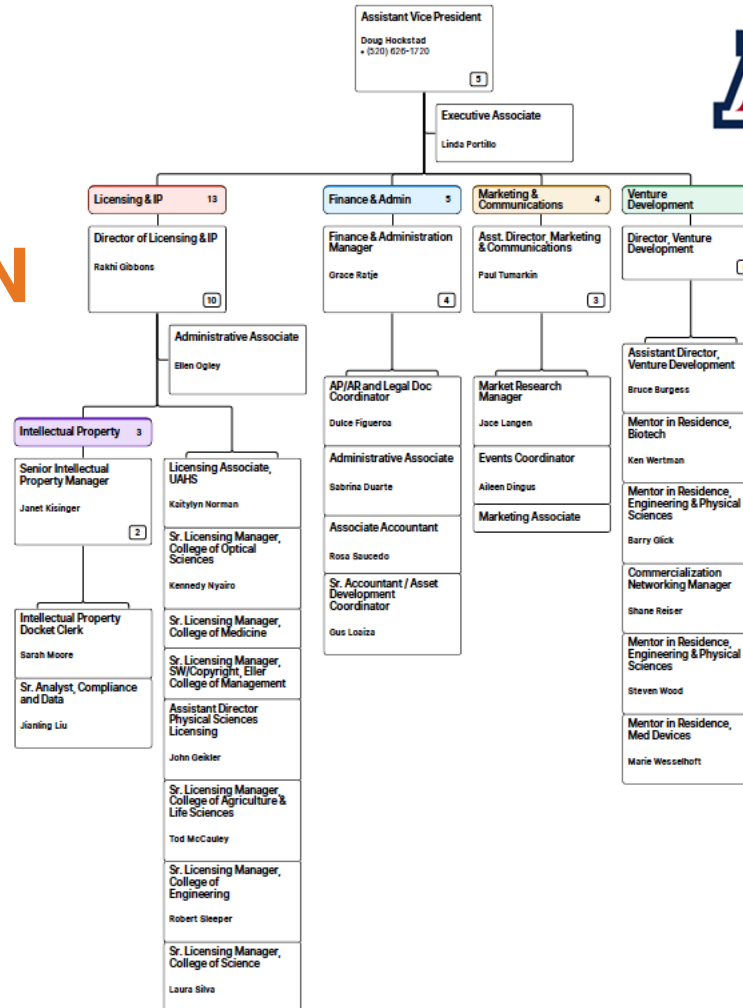
2012: Hired Sr. VP  
to build operation,  
set goal of being  
an exemplar TTO  
organization by  
2020



2013: Fully  
operational and  
staffed

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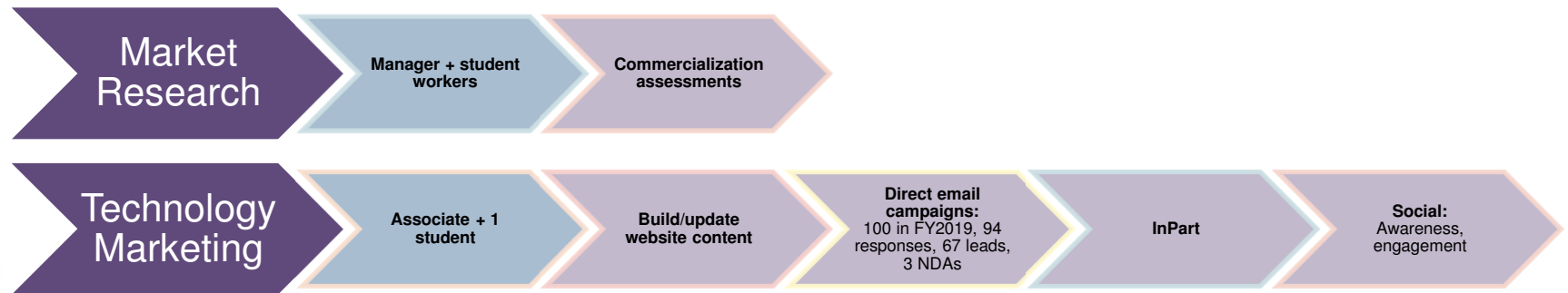
**ORGANIZATION**



THE UNIVERSITY OF ARIZONA  
**TECH LAUNCH  
ARIZONA**



# TECHNOLOGY MARKETING



## CASE STUDY: WPI

- Old portfolio of IP –13 patents, failed startup
- Used SearchrealFast.com to identify close IP
- Identified two companies that are very close
- One now has a co-inventor working at it!
- Foot in the door for defensive license



## QMI CASE STUDY: THE TARGETED MARKETING APPROACH

- **NGS DNA library preparation method**

What materials/ reagents are we using to practice the method?

Which companies have kits in this field? Competitor or licensee?

Who would best benefit- market share?

Other considerations: what can we disclose?

- **Market analysis** identified **15 companies** key leaders in the NGS field. Other companies also identified through 2 conference attendances.

- However, one company best fit due to head-to-head comparisons.

**Searched for appropriate Contact through LinkedIn.**

*Current discussions ongoing...*



# CASE STUDY: EMAIL MARKETING CAMPAIGN



The UH Technologies Catalog. [View in browser.](#)



Hello Brian,

I work in the University of Houston's Office of Technology Transfer and Innovation, where we work with industry to move UH discoveries to the marketplace.

We have identified a technology that is available for licensing that may be of interest to the Office of Technology Transfer and Innovation. Please take a moment to read the information below and explore our website on this technology to see if there is a potential fit for your company.

If you would like to received additional technical or licensing details about this technology or related research at UH, please contact me by phone or email.

Sincerely,

## Competitive Advantages

- Epoxy resin derived from renewable, non-toxic sources, such as agricultural products
- 12% increase in tensile strength compared to DGEBA-based epoxy resins
- 16% increase in modulus in comparison to DGEBA-based epoxy resins
- Comparable elongation at break values and glass transition temperatures to DGEBA-based epoxy resins
- Capable of triggered degradation, which will decrease the amount as agricultural products DGEBA-based epoxy resins of non-degradable waste in landfills

## Patents

- Non-provisional patent application filed: US2017/046789

[Learn More](#)

UNIVERSITY of **HOUSTON** | RESEARCH

Emails sent to 42 individuals...



# TECHNOLOGY LANDING PAGE




The screenshot shows a web browser window with the title "Plant-Based Plastics" and the URL "https://research.uh.edu/biorenewable-epoxy-resins/". The page content includes a green leaf icon, the title "PLANT-BASED POLYMERS", and two paragraphs of text. The first paragraph discusses the use of petroleum-based chemicals like BPA in polymers. The second paragraph highlights the discovery of non-toxic plant-based molecules at the University of Houston that can replace BPA. At the bottom, there are four navigation buttons: TECHNOLOGY, SCIENCE, INVENTOR, and CONTACT. The footer of the page reads "UNIVERSITY of HOUSTON" and "Technology Transfer & Innovation".

Plant-Based Plastics

https://research.uh.edu/biorenewable-epoxy-resins/

80%



## PLANT-BASED POLYMERS

Most polymers used today for our food and beverage containers, vehicles and other household items are made from materials containing petroleum-based chemicals. One such petrochemical that has gained much recent attention is bisphenol A, known as BPA. BPA can be toxic to our health and the environment

Researchers at the University of Houston have discovered non-toxic plant-based molecules that can be used to replace BPA in the class of thermoset polymers known as epoxy resins. The plant-based replacements for BPA not only create non-toxic, more environmentally-friendly materials without loss of key thermal and mechanical properties, but they also can be used to create degradable, or recyclable, thermosets.

TECHNOLOGY SCIENCE INVENTOR CONTACT

UNIVERSITY of HOUSTON

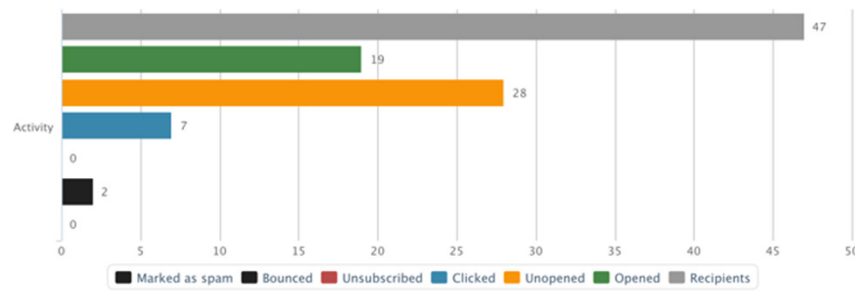
Technology Transfer & Innovation



# ANALYTICS



## Email Stats



**42.22% opened** 19 unique / opened 302 times

**28 not opened** 📄

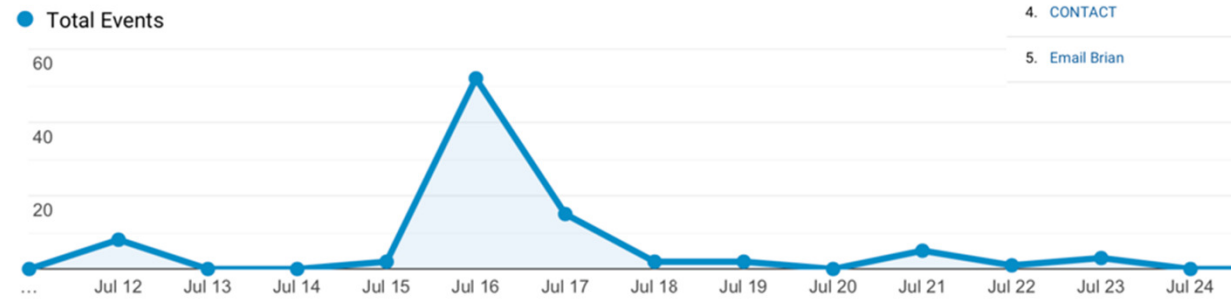
**15.5556% clicked a link** 7 unique clicks

**0% unsubscribed** 0 unsubscribed

**4.26% bounced** 2 bounced

**0% marked as spam** 0 marked as spam

## Website Stats



Event Action	Total Events	Unique Events
	90 % of Total: 97.83% (92)	77 % of Total: 97.47% (79)
1. TECHNOLOGY	36 (40.00%)	31 (40.26%)
2. SCIENCE	29 (32.22%)	25 (32.47%)
3. INVENTOR	16 (17.78%)	14 (18.18%)
4. CONTACT	8 (8.89%)	6 (7.79%)
5. Email Brian	1 (1.11%)	1 (1.30%)





## CASE STUDY: 3 YEARS OF INPART

**170**

technologies  
marketed

**93**

introductions to  
industry network  
members

**1,617**

email campaigns  
mentioning UA tech

**1,194**

UA technology  
views

**36**

pieces of feedback  
from industry



**THANK  
YOU**

