Session Outline

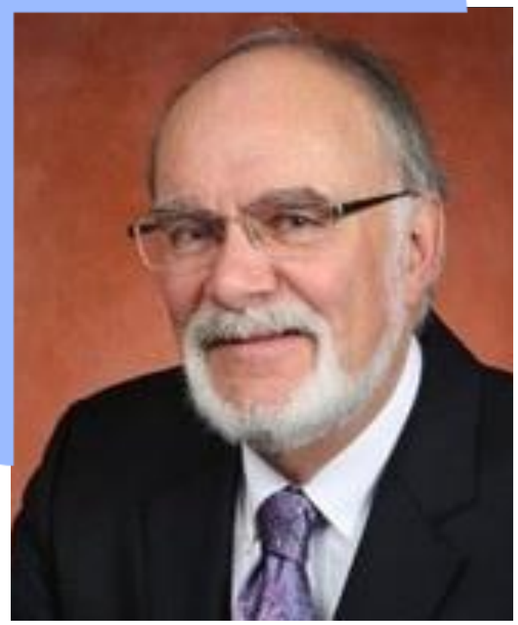
Day 4 : 24 Apr 2025

1730 – 1930	**Session 04** • Understanding and communicating the impact of TTOs • Training and excelling as Tech Transfer Professionals • Intellectual Property Management for Tech Transfer Professionals	John Fraser

Session 4 A :
Understanding and Communicating the impact of TTOs

John
Fraser

Who's Speaking



John Fraser

CLP, RTTP

John is a global expert in technology transfer and knowledge exchange, with extensive experience in maximizing innovation impact. Having led four technology transfer offices across two countries, he understands the complexities of translating research into market-ready products. As a former AUTM President, he has advised global technology transfer professionals on country-specific challenges. Through Burnside Development, he consults for WIPO, Chilean institutions, Serbia's Innovation Foundation, and India's Department of Biotechnology.

Affiliation

- Past President Association of University Technology Managers, USA(AUTM)
- President, Burnside Development & Associates LLC
- Head of Tech Transfer for Florida State University & Simon Fraser University

Terminology

- **NOTE: Technology Transfer is a term used primarily in the US.**
- **Knowledge Transfer/Knowledge Exchange is used primarily in the UK and Europe. I will use Technology Transfer to refer to both.**

Topics Covered

- **COMMUNICATE: How do leading TTOs and professional bodies, such as AUTM, effectively communicate the impact of TTOs?**
- **METRICS: The importance of tracking metrics and case studies that illustrate the value creation for stakeholders.**
- **EXAMPLES: Case Studies.**

COMMUNICATING THE IMPACT: OUTREACH

COMMUNICATING: The Benefits of Participating in TT

RESEARCHERS: Accelerate your research career by accessing new human and financial resources with corporate partners.

LEADERSHIP: Enhance the Institution's Reputation by demonstrating engagement with real Societal problems. Reasons to create/fund a TTO.

COMMUNITY: Participating in local economic development activities via start-up companies and research collaborations.

GOVERNMENT: Demonstrating responsiveness to government mandates, to grant funders, and to help create an Innovation Ecosystem and to benefit Society by helping build an Innovation Economy.

All the above are reasons to create/fund a TTO

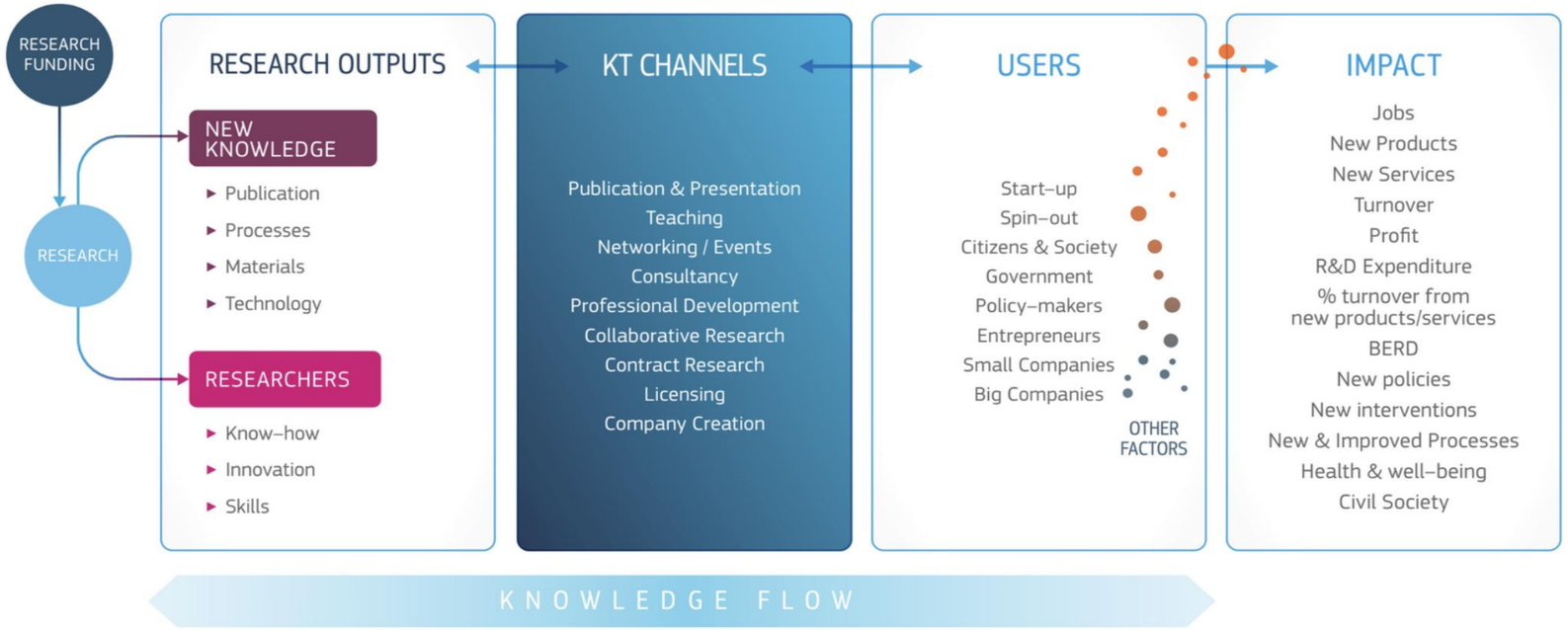
COMMUNICATING: The Benefits of Participating in TT

- **POTENTIAL LICENSEES:** the potential impact on market position and profitability as well as addressing ways to manage risk of product development.
- **LEADERSHIP:** communicating the progress of project commercialization and impact on building the institutions research base.
- **RESEARCHERS:** outlining the process of management and how to make progress by accessing external resources/
- **GOVERNMENT:** The world's other largest economies (#1 USA; #2 China: #3 Germany; #4 Japan; (#5 India) and the #6 UK) all have well established, effective academic commercialization activities with their universities contributing to their innovation fueled growth. India needs sustained government support to compete on all cylinders at this level.

COMMUNICATE HOW RESEARCH TO IMPACT HAPPENS

"KNOWLEDGE TRANSFER METRICS" Towards a European–wide set of Harmonised indicators. Alison Campbell, Chair

Figure 1: Knowledge Transfer: from research to impact

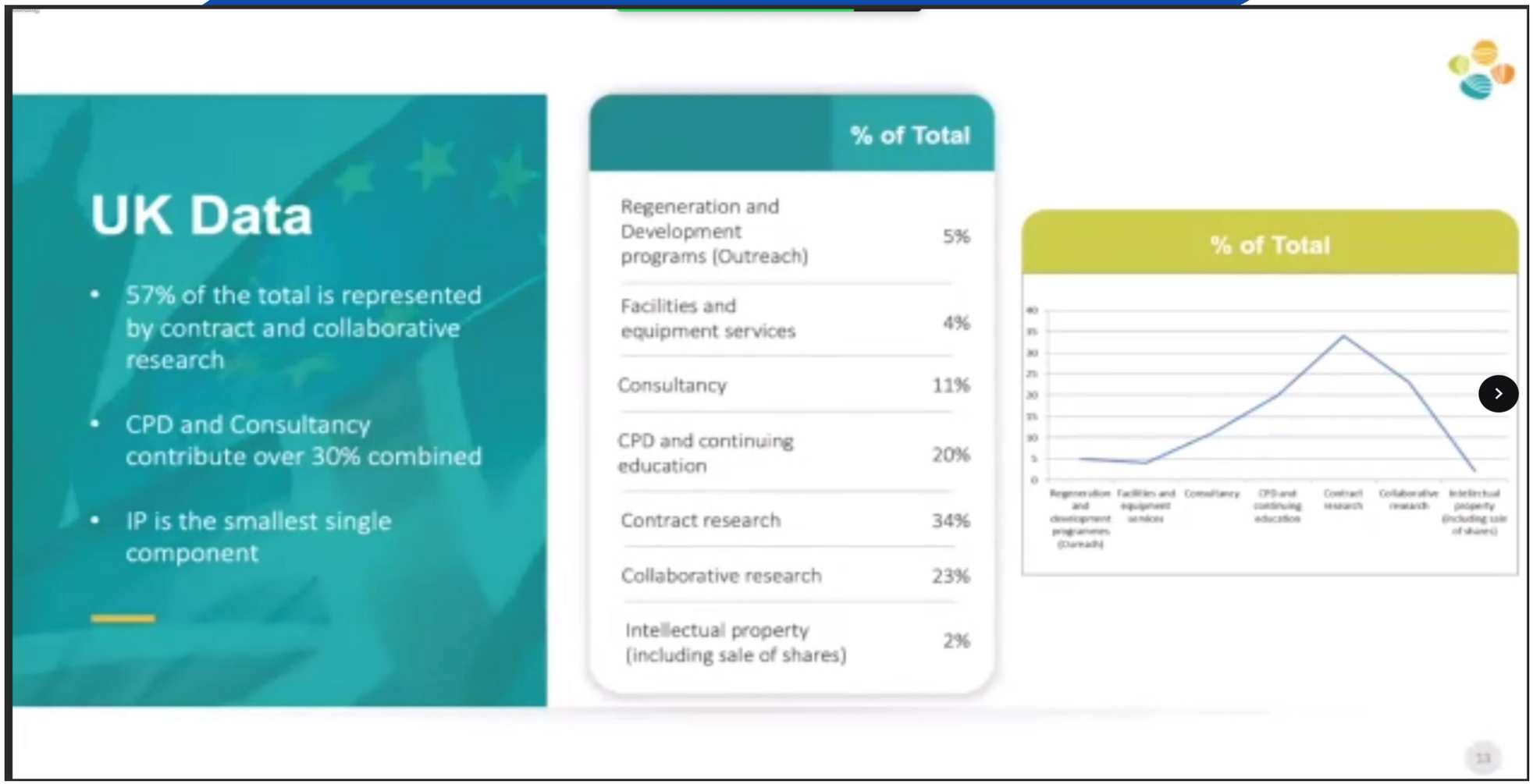


1 There are several terms in use to describe the processes of knowledge valorisation. Knowledge Transfer (KT) and Knowledge & Technology Transfer (KTT) are often interchangeable. Technology Transfer (TT) tends to refer to research commercialisation and may be considered a subset of KT. This report will use the KT terminology.

2 Publicly Funded Research Organisations (PROs) includes universities, colleges and other governmentally research institutions. The term PRO is used in this report.

3 Available at: *http://www.innovationbycollaboration.se/wp-content/uploads/2015/09/Kevin-Cullen.pdf*

Source : European Commission Website



Source : Kevin Cullen UK Data Analysis

From Knowledge Transfer Metrics Paper

Around 5 percent of university-generated technology has significant commercial value. To concentrate only on this would thus neglect the other 95 percent, contrary to the university mission.

PROs: Publicly Funded Research Organizations

Source: Cullen. Milken Review Article 4th Quarter 2005

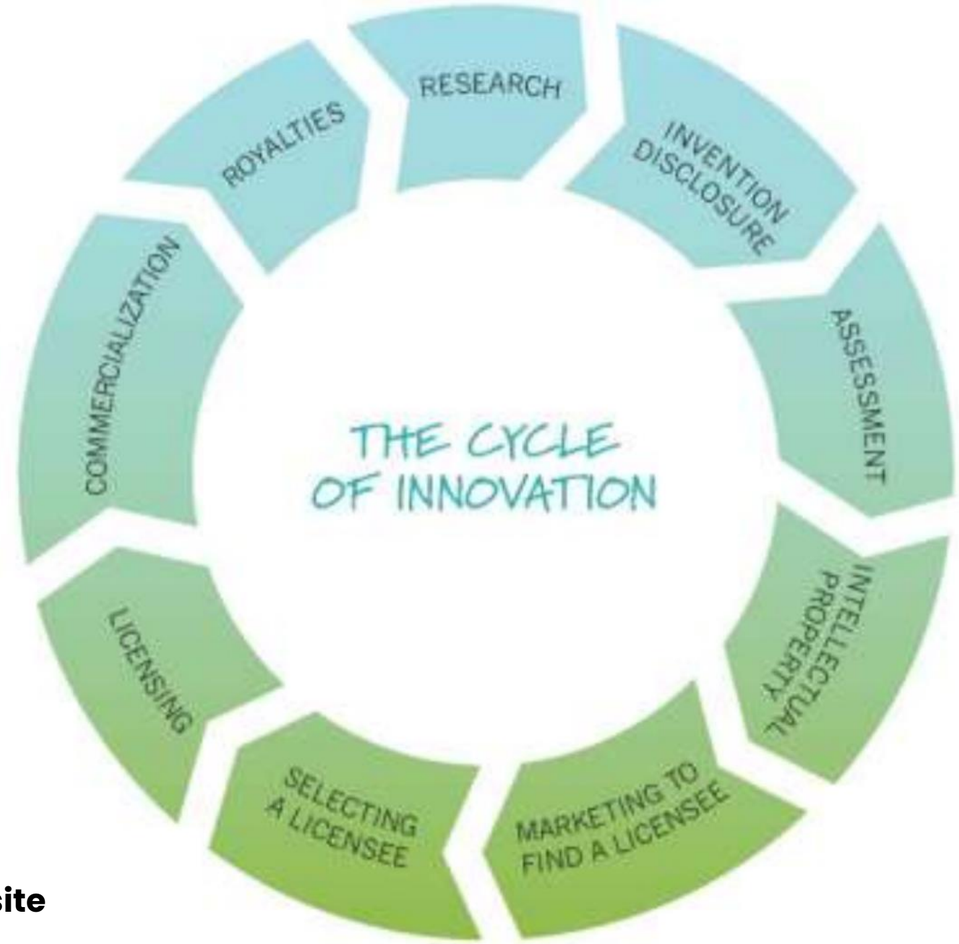
From Knowledge Transfer Metrics Paper

A word of warning. Output indicators cannot be assessed in isolation. Context matters. Often overlooked is the fact that KT indicators are a measure of the performance of the PRO and not of its KTO[7]. KT and impact are not the sole responsibility of the KTO. The KTO provides a professional service function within the overall PRO context and the PRO mission, environment, priorities and support determine its activities and performance.

PROs: Publicly Funded Research Organizations. **EU Harmonization Paper**

Source : Alison Campbell article

SOME USEFUL TOOLS FOR COMMUNICATING



Source: Stanford University TLO site

Categories of TTO Projects. Label each Project

- 0 - Opportunity identified
- 1- IP Claimed
- 2 - Prospect Identified
- 3 - Proposal Outstanding
- 4 - Agreement Executed
- 8 - Inactive
- 9 -Dead

FSU Product Pipeline 2005

260 Invention Disclosed; 320 Provisional/Utility Patent Apps; 143 US Patents since FY 1995
75 CDA's completed; 22 Deal Opportunities*

PRODUCT	LICENSEE	APPLICATION	PRE-LICENSE	LICENSED TO CORPORATIONS		
				Product Development	In Market	Terminated
EDUCATION						
Job Skills Education Program (JSE	NCS Pearson Publishing	basic job skills army training				
WebPath	FSU	medical pathology				
Fl Center Academic Advisory Serv	State of Florida	high school - university				
Partners for Healthy Baby Books	FSU	early child care				
Womens' Self Esteem Book	FSU	consumers				
Science Tobacco & You	TSI	grade 4 - 8 science education				
MagLab Alpha	Sempco Inc.	grade 4 - 8				
Ethics Course	LearnSomething.com	state government				
PHARMACEUTICAL						
synthetic-Human Growth Factor	GAP Funding	tissue growth				
Taxol analogs	Taxolog (S)	cancer				
Metronidazole	SDR Pharma	antibiotic - vs ulcers				
Metronidazole	SDR Pharma	Xray radiosensitizer				
Taxol production method	Bristol-Myers Squibb	cancer				
MEDICAL DEVICES						
Mad Cow Disease Diagnostic	GAP Funding	Food Industry				
magnetic separations of proteins	Nanomagnetics & Biotech Inc (S)	heart attack confirmation				
tree nut allergens	BioMay	allergy diagnostic				
Pacifier Activated Lullaby	GE Medical/Ohmeda	neonatal units-Hospitals				
INFORMATION TECHNOLOGIES						
Face Recognition Systems	GAP Funding	Security				
DQS queing software	Genias/SUN	software				
Career Portfolio	UCSD; Georgia Tech; Goldwater	student career advice				
Superensemble Forecasting	WP Inc.	weather forecasting				
Florist Software	FSU	Security, Flowershop				
FSU Smart Card	Cybermark	Security, Identification				
OTHER						
Neural network	SUTI	data mining				
Seminole Fight Song Sheet Music	Arrangers Publishing	School Spirit				
StratoSequence Robot	Nanostrata (S)	Research Tool				
PAUP Software	Sinauer Publishing	Research Tool				
FT-CRT	FSU	Petroleum analysis				
T.E.S.T.	TITAN Inc.	Tabletop Exercise Simulation				
Disaster Housing Resource On-Lin	FEMA	Disaster housing dbase				
Electron resonance spin device	Kyo-Spin (S)	ERS device components				
	Software AG	webenabling CICS legacy dbases				
Diagnostic Camera System	Integrated Design Tools (S)	Research Tool				
Cocktail Neck Ties	Stonehenge	Clothing				

(S) = FSU start-Up company	- company started based on FSU technology, expertise
Internal FSU Development	- disclosure, IP protected, GAP Funding to define commercial collaboration in place
External Develoment	- disclosure, IP protected, developed by industry/ Not GAP Funding
Product Development	- licensed, company working on product development
In Market	- product in marketplace
Terminated	- no longer being sold in market

* Includes status 3 (prospect identified) and status 4 (deal outstanding) from OIPDC Summary Sheets

last updated - 1/23/2006

Tech Transfer Online

UNIDO

VENTURE CENTER

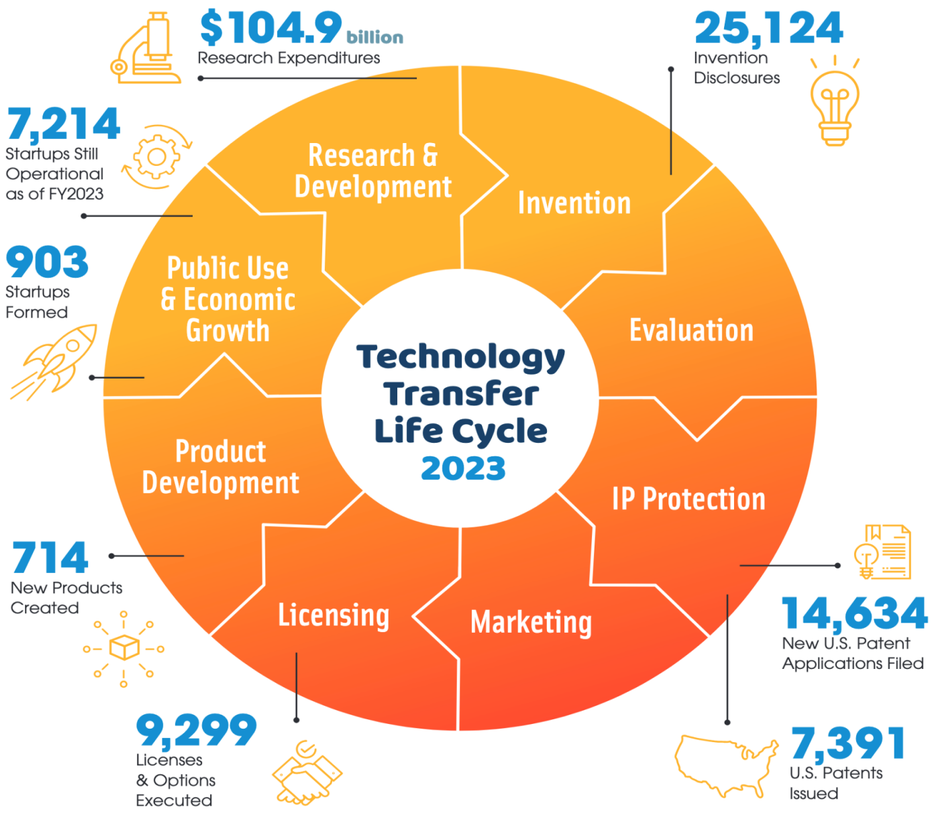
FSU Office of Commercialization
Revenue Projections
updated 8/27/14

					FY 2014			FY 2015			FY 2016			FY 2017				
TechID	Manager	Faculty	Title	Licensee	14 Royalties	14 Grants	14 Other	15 Royalties	15 Grants	15 Other	16 Royalties	16 Grants	16 Other	17 Royalties	17 Grants	17 Other	COMMENTS	Column1
	AQ	Connor	Assessment 2 Instructions software	Rubicon Partners, LLC	$ -			25,000			41,250			63,000				
	AQ	Rodgers	software	LECO Corporation	$ -			beta test license									This is a nonexclusive beta test license only.	
	AQ	Foorman	software	Lexia Learning, Inc.	$ -					253,934.44	70,000			280,000				
	AQ	Bhide	ADHD therepeutic	Avekshan, LLC	$ -			not a license	345,344								Currently under option but license terms have been negotiated. We will also receive a 10% administrative fee from Partners on all license revenues per the JIAA.	
	BE	Megraw	CDK5RAP2 antibody	Millipore Corporation	$ 94			$ 100.00			$ 100.00			$ 100.00				
	BE	Hurt and Rizkallah	Cell Stage Identifier Antibodies	Millipore Corporation	$ 209			$ 200.00			$ 200.00			$ 200.00				
	BE	Tang	Assay and treatment technologies for Hepatitis C virus	BioFront Technologies	$ 1,139													
	BE	Roux	Various nut allergens	BioFront Technologies	$ -													
	BE	Roux	Human IgE Protein	KeraFAST	$ 225			$ 200.00			$ 200.00			$ 200.00				
	BE	Kumar, S.	Live Tissue Preservation Chamber	KeraFAST	$ -			$ -			$ -			$ -				
	BE	Lee, C.	Circadian Rhythm antibodies	KeraFAST	$ -			$ -			$ -			$ -				
	BE	Blaber, M.	HGF-1 Protein; Mouse KLK-1 Recombinant	KeraFAST	$ 203			$ 200.00			$ 200.00			$ 200.00				
	BE	Blaber, M.	Human Growth Factor research	Trefoil, E&B	$ -			15,000		Option fee	not a license, option							
	BE	Lemmon	software	Nidus	$ -			not a license										
	BE	Chatterjee, J	Analyte diagnostic device	G5 Engineering Solutions	$ -			not a license										
	BE	Olcese	Preterm birth technologies	KynderMed, LLC	$ -			not a license										
	BE	Zhang, J.	Chemotherapy regimen selection	Innomedicine, LLC	$ -			not a license										
	BE	Zhang, J.	Data mining technology	Insilicom, LLC	$ -			not a license										
	BE	Hsieh, P.	Various antibodies	BioFront Technologies	$ -			not a license										
	BE	Stefanovic	anti-fibrosis drig	Celgene				10,000		Option fee								
	BE	Ma, T	Novel Cell Aggregation Bioreactor	Rooster Bio, LLC	$ -													
	EM	Kelley	Underwater CSI Book	Best Publishing Company	$ 73	None	None	$ 100.00	None	None	$ 100.00	None	None	$ 100.00	None	None		
	EM	Green	Certified Organizational Manager Program	Innovative Group Inc.	$ 17,360	None	None	$ 20,000.00	None	None	$ 20,000.00	None	None	$ 20,000.00	None	None		
	EM	Green	Certified Executive Leadership Program	Innovative Group Inc.	$ -	None	None											
	EM	Green	Certified Executive Leadership Program - Ger	Innovative Group Inc.	$ -	None	None											
	EM	Hsieh	Pork Fat Antibodies	Tanaka Chemical	None	None	None	None	None	None	None	None	None	None	None	None	Option to Exclusive license expires September 2014	
	EM	Hsieh	Catfish antibodies	Elisa Tek		None	None	$ -	None	None	$ -	None	None	$ -	None	None		
	EM	Hsieh	CNS Antibodies	Elisa Tek		None	None		None	None		None	None		None	None		
		Gavrilin	Hybrid magnet software	Radboud University Nijmegen High Magnetic Field Lab	None	None	None	None	None	None	None	None	None	None	None	None	this was a one time use license	
	EM	Poroseva	Power System Graph Converter	The Regents of the University of New	None	None	None	None	None	None	None	None	None	None	None	None		
	EM	Shute	Software	Empirical Games, LLC		None	None	not a license										
	EM	Goldsmith, E.	Logo design	FoxSmith LLC	$ 1,472	None	None	$ -	None	None	$ -	None	None	$ -	None	None	sale of IP; no follow-on royalty expected	
	EM	Shute, V	Software	Carney Labs, LLC	$ -	None	None	$ 5,000.00	None	None		None	None		None	None		
	JS	Schlenoff	Dipping robot	nanoStrata	$ 199			$ 1,000.00			$ 1,000.00			$ 1,000.00				
	JS	Speigel/Dixon	Science Tobacco and You	i4Learning	$ -													
	JS	Chen/Haik	Various	Therakos/J&J	$ -													
	JS	Krishnamurti	Superensemble Weather Forecasting	WeatherPredict/ RenRe	$ 350,000			$ 150,000.00			$ 150,000.00			$ 150,000.00				
	JS	Standley	Musical Pacifier	PremCare Medical Technologies	$ 48,000			$ 25,000.00			$ 25,000.00			$ 25,000.00				
	JS	Marshall	NMR Crude Oil Analysis Technology	Baker Hughs	$ -													
	JS	Marshall	Mass Spec Analysis Software	Sierra Analytics	$ 6,060													
	JS	Dougherty	Electrode/electrolysis technology	World Energy Solutions	$ -													
	JS	Winger	Solar Sausage ™	Solar Technology Holdings, LLC	$ 30,000			$ 30,000.00			$ 30,000.00			$ 30,000.00				
	JS	Darabi	PORTSTAR port security training	Educational Development Group	$ -													
	JS	Liang	Buckypaper Process patents	Nano Vision	$ -													
	JS	Brey	NMR Probe designs	Revolution NMR	$ 5,450			$ 5,000.00			$ 5,000.00			$ 5,000.00				
	JS	Bird	Bitter Magnet Drawings	Tsukaba Magnet Lab	$ -													
	JS	Zheng, J.	Supercapacitor technology	General Capacitor	$ -						$ 150,000.00			$ 300,000.00				
	JS	Zheng, J.	Fuel Cells	Bing Energy	$ 10,000			$ 10,000.00										
	JS	Edington	TBD	Oscilla Power	$ -													
	JS	Blaber, M.	Mouse Jacket	Lomir	$ 5,000			$ 1,000.00			$ 1,000.00			1000				
	JS	Tozer	Guetin Cylinder Piston Cell Drawings	University of Warwick	$ -													
	JS	Tawfiq	Borescope sale	Avasarala, S	$ 25,000													
	JS/EM	Ortolano/Newcom	Perspectives on the Short Story	Pearson Learning Education	$ 12,945			$ 10,000.00			$ 10,000.00			$ 10,000.00				
	JF		Film School	Various	$ -													
	JF	Branson	JSEP	NCS Pearson	$ -			$ -			$ -			$ -				
	JF	Baker	web referrels	JustFlowers	$ 185			$ 150.00			$ 150.00			$ 150.00				
	JF	Dailey/Hendry	Ethics Course	LearnSomething.com	$ 3,481			$ 3,500.00			$ 3,500.00			$ 3,500.00				
	JF	Davidson	Various licenses related to Photomicrographs	Various	$ 15,217													
	JF	Davidson	Photomicrographs	Nikon, Olympus, Zeiss	$ 510,000													
	JF	Alley/Wright	The Seminole Fight Song	Arranger's Publishing	$ 8			$ 10.00			$ 10.00			$ 10.00				
	JF	Swofford	PAUP Software	Sinauer Associates - Smithsonian	$ 7,358													
	JF	Holton	Taxol	BMS	$ -													
	JF	Dudley	Bn-OPT reagent (Dudley reagent)	Aldrich Chemical Company	$ 522			$ 500.00			$ 500.00			$ 500.00				
	JF	Dudley	PMB reagent (Dudley II reagent)	Aldrich Chemical Company	$ -			$ -			$ -							
	JF	Davidson	various products based on photomicrographs	BevShots MicroArt, LLC	$ 4,000													
	JF	Ye, M	Nitrate software	RYL Consulting	$ -			0			0			0				
	JF	Davidson	various products based on photomicrographs	Weston Earth Images/Alcophone	$ -			0			0			0				
	JF	Vanlandingham	concussion drug	Prevacus, LLC	$ -													
	JF	Winger	Stadium Runner Device	Stadium Runner, LLC	$ -													
	JF	Klatt	Software	Web sales of remaining inventory	$ 64													
	JF	Graham, M	Partners for a Healthy Baby; other books	Direct web and book sales	$ 803,407			800000			800000			800000				
	JF/EM	Dilling	TEST	Team Simulations	$ 10,000			$ 10,000.00			$ 10,000.00			$ 10,000.00				
					$ 1,867,671	$ -	$ -	$ 1,121,960	$ 345,344	$ 253,934	$ 1,318,210	$ -	$ -	$ 1,699,960	$ -	$ -		

THE TRANSACTION METRICS (the METRICS)

Benefiting Society and the Economy

Academic Technology Transfer for 2023



autm

For more information visit
www.autm.net

Every year university research yields discoveries with commercial potential.

Technology transfer professionals associated with universities and other academic institutions 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.

Clock

Driving the Innovation Economy

Academic Technology Transfer in Numbers

From 1996 to 2020, up to...

$1.9 trillion contributed to **U.S. gross industrial output**

$1 trillion contributed to **U.S. gross domestic product**

6.5 million **jobs** supported

554,000+ **inventions disclosed...**

141,000+ **U.S. patents issued...**

to research institutions since 1996

18,000+ **startups formed**

73% of university licenses are to **startups and small companies**

200+ **drugs and vaccines developed** through public-private partnerships since **Bayh-Dole Act** enacted in 1980

autm
Transforming Ideas into Opportunities

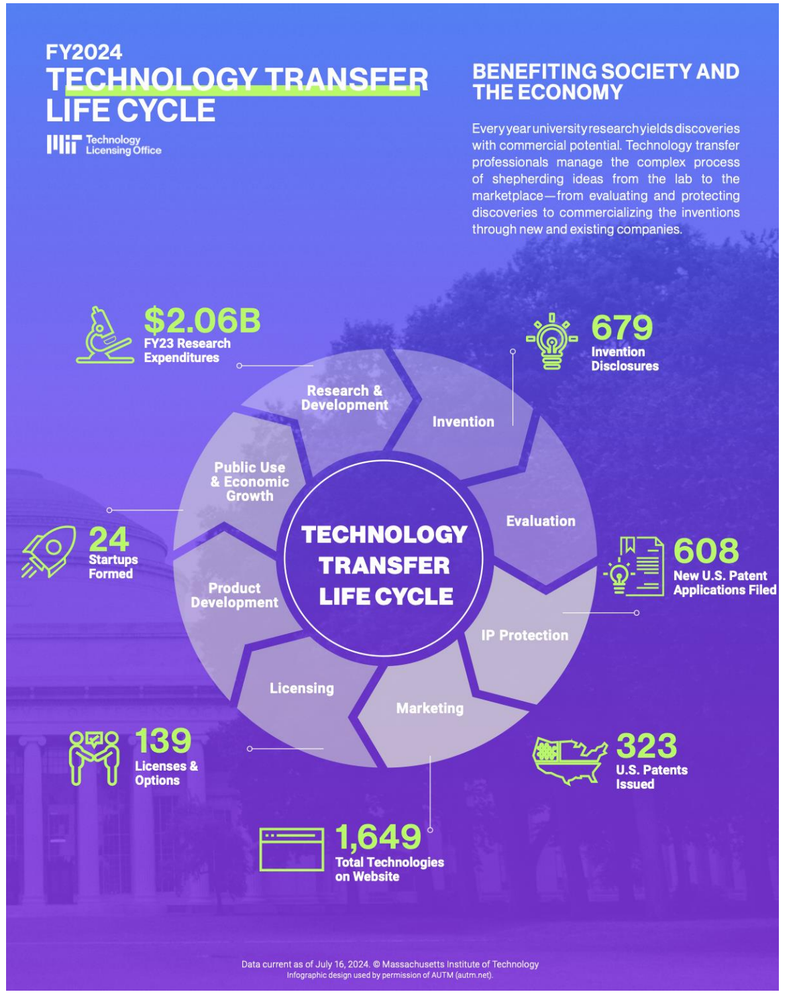
For more information visit
www.autm.net

This information was compiled from AUTM and the Biotechnology Innovation Organization: The Economic Contribution of University/Nonprofit Inventions in the United States: 1996-2020; June 2022 as well as the AUTM 2023 Licensing Activity Survey and Statistics Access for Technology Transfer Database, www.autm.net/STATT, and Academic Patent Licensing Helps Drive the U.S. Economy, IPWatchdog.com, June 20, 2017.

Thank you to our sponsors

cayuse INNOVATION

MIT TLO



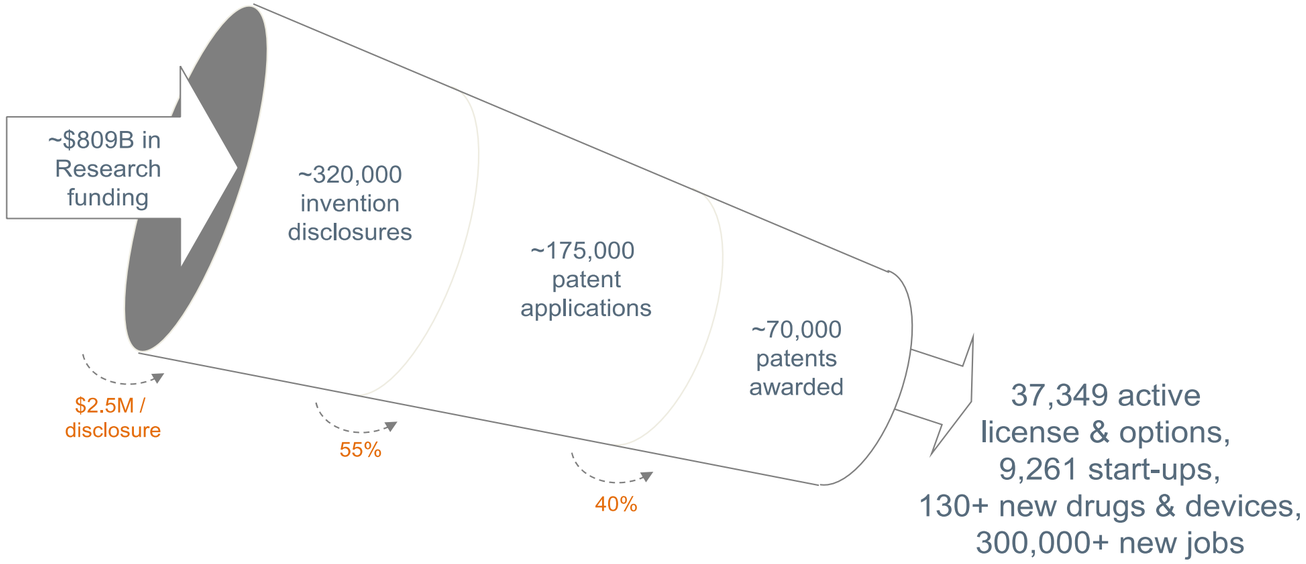
Source: https://tlo.mit.edu/

Also well known:

- **Pioneering contributions to life changing tech**
- **Well known inventors, startup founders**
- **Famous companies**
- **Powering East Coast economy, Route 128**

Where Do Universities Play in This Space

Cumulative Inputs and Outputs, 1991 – 2014, US Universities



Source: AUTM Licensing Surveys (FY91- FY14)

AUTM CY 2018 data:

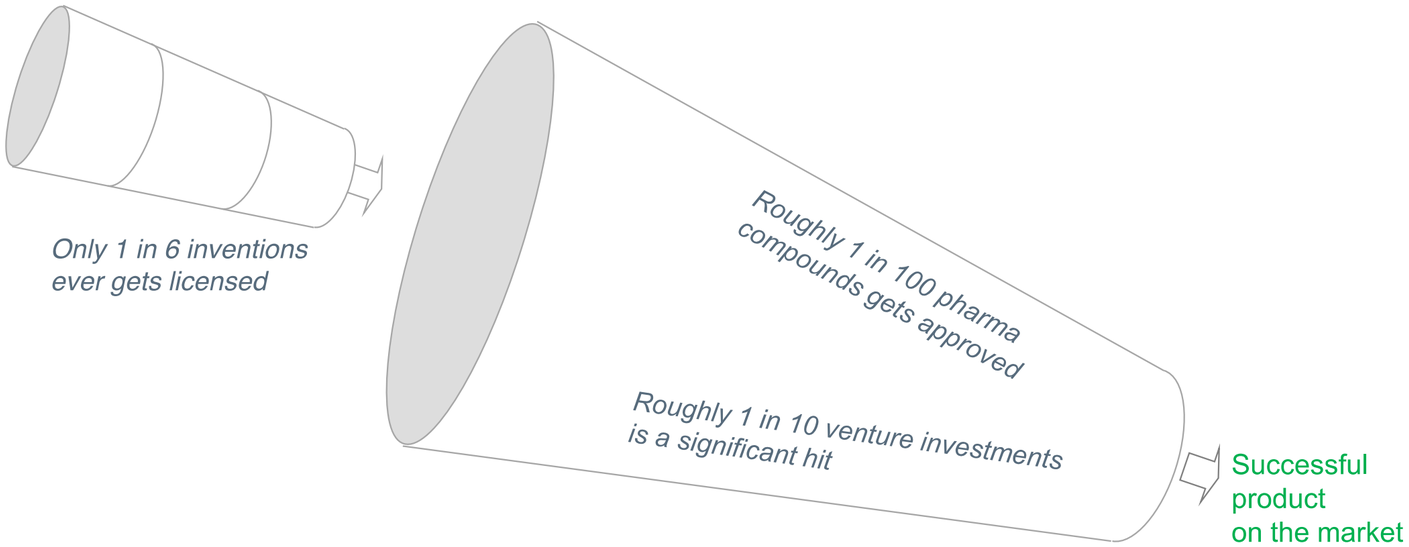
- **RE: $72 billion**
- **INV/RE: ~ 4 per $10M**
- **New products/ RE: ~ 0.12 per $10M**
- **New startups/RE: ~ 0.15 per $10M**
- **Most licensing to SME**

Courtesy: Orin Herskowitz, Columbia Technology Ventures

But the End of One Process is Just the Beginning of Another

University's Funnel

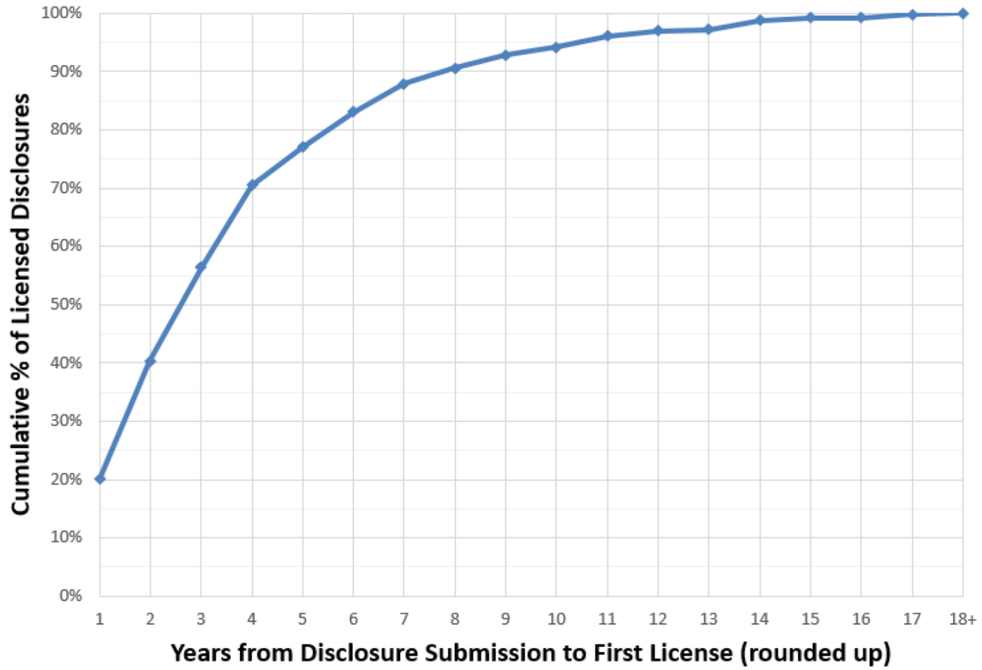
Industry / VC's Funnel



Courtesy: Orin Herskowitz, Columbia Technology Ventures

Inventions Often Take Years to Get Licensed:

Only ~55% of Deals Done by Year 3, only 85% by Year 6



Source: Review of elapsed time from invention submission to executed license, for ~400 executed licenses covering ~700 inventions, 1982 until 2014 (32 years)

Courtesy: Orin Herskowitz, Columbia Technology Ventures

Myths

Myth: TT earnings can substitute grants and contracts
No. The best of global institutions earn up to 2-5% of their R&D budget

Myth: TT is a commercial activity
No. Tech transfer is a vehicle to realize the mandate of most academic/R&D organizations to disseminate knowledge and know-how, and bring the benefits of knowledge to the society. TT is a delivery mechanism for impact.

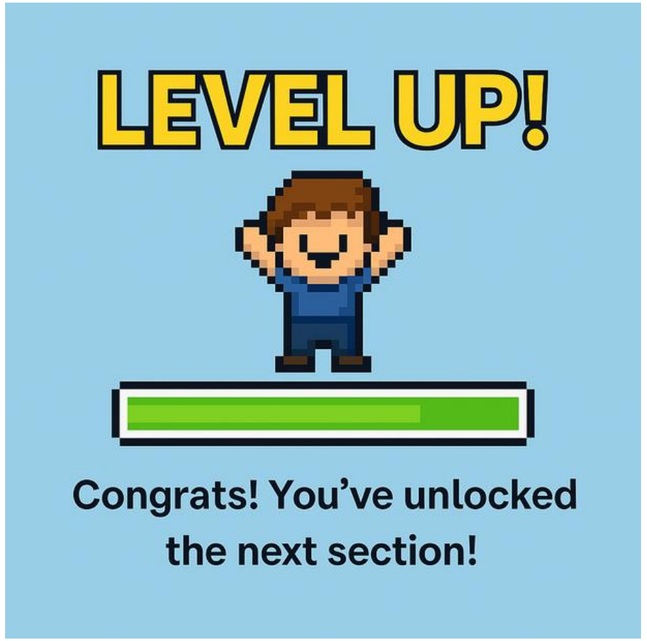
Myth: TT is a distraction to the main activity of teaching
No. Technology development and its translation to actual products/ services of use to society not only provides access to real-world problems to researchers but also trains students in real-world topics. It also inspires and attracts faculty/students who are motivated by serving society through technology.

The Economic Contribution of University/Nonprofit Inventions in the United States: 1996-2017 (22 years). BIO/AUTM Report 2019

- Total contribution of these academic licensors to industry gross output ranges from $723 billion to $1.7 trillion, in 2012 U.S. dollars;
- Contributions to gross domestic product (GDP) range from $374 billion to $865 billion, in 2012 U.S. dollars;
- Estimates of the total number of person years of employment supported (5.9 million) by these academic licensors' licensed-product sales range from $2.676 million to $5.883 million over the 22-year period.

The high end of the range, in particular the $1.7 trillion contribution to gross output, $865 billion contribution and providing support for 5.883 million jobs over the 22-year period, is based on an assumption of a 2% earned royalty rate on licensees' product sales.

Case Studies and Stories:



Case Studies and Stories:

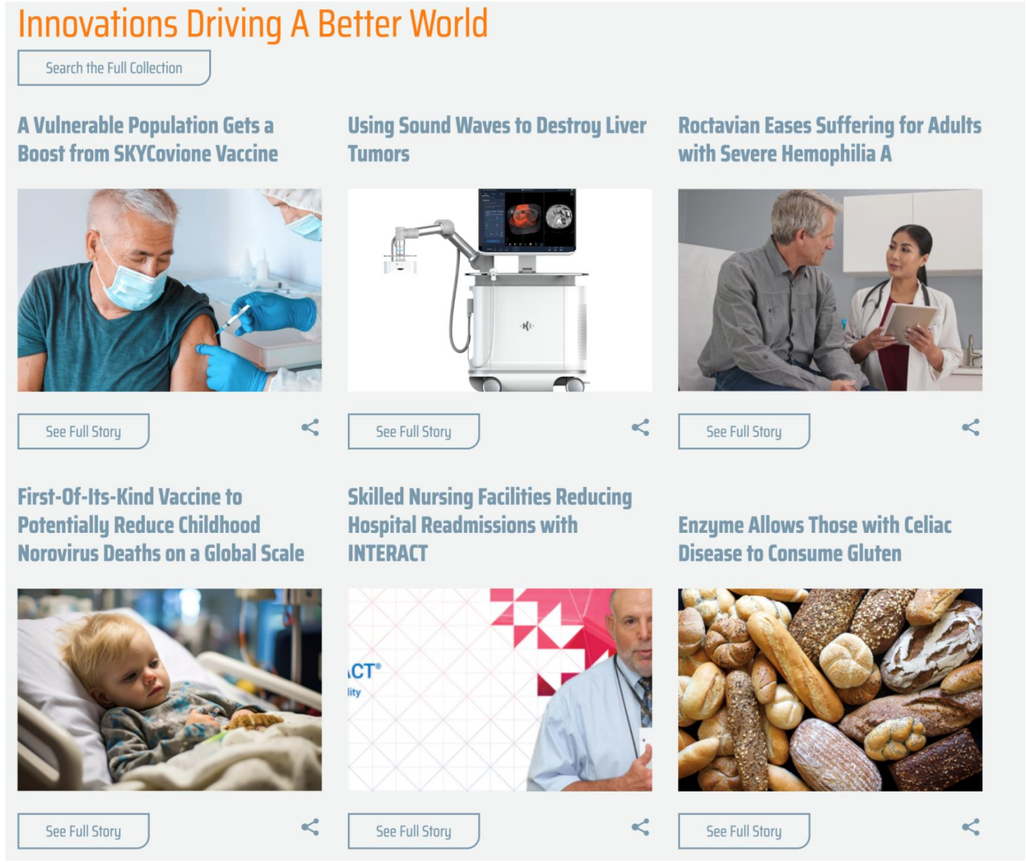
The Better World Project (AUTM)

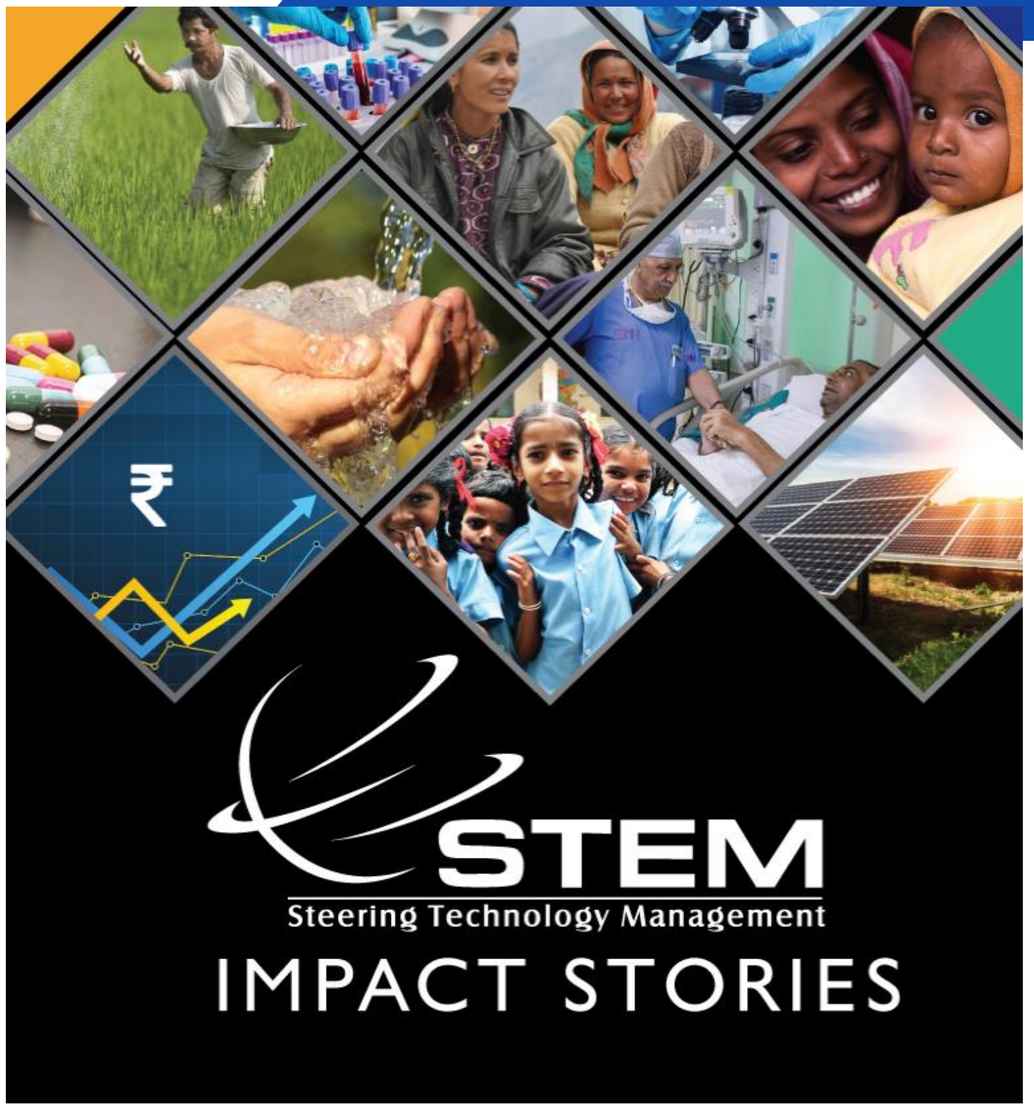
Sathguru books of Indian Case Studies

- https://autm.net/about-tech-transfer/better-world-project;
- The Musical Pacifier: https://www.youtube.com/watch?v=YfEtX4VEYSg
- Impact Awards Coffee Table Books - INDIA

Case Studies and Stories:

https://autm.net/about-tech-transfer/better-world-project;





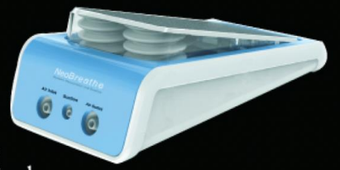
NeoBreathe

SCHOOL OF INTERNATIONAL BIODESIGN

An easy-to-use newborn resuscitator, specificallydesigned for frontline health workers.The technology NeoBreathe, has been developed under the School of International Biodesign (SiB) program, centered at All India Institute of Medical Sciences (AIIMS) and IndianInstitute of Technology, Delhi (IIT-D) and implemented in collaboration with the StanfordUniversity, USA and partnership with Indo-US S&T Forum.

Socio-Economic Impact:

- Successfully reached-out to 22 Indian States & 8 foreign countries i.e. South Africa, Congo, Mali, Kenya, Nigeria,Algeria, Ghana & Rwanda
- The device has benefited hundreds of paramedical staff and thousands of through sale of more than 200 units
- Five times less expensive than its predicate device
- Aligned with 'Make in India' and is all set to be exported to other countries
- The technology transfer and commercialization of the technology has led to employment generation with about 50 plus direct creation of jobs and indirectly to many others for contract manufacturing of the product



Technology Transfer Model

- Licensed to Windmill Health Pvt. Ltd on an exclusive worldwide basis with a nominal, token upfront licensing fee and small percentage of royalty on gross revenues and per centage sharing of sublicensing fee
- Sublicensed to Phoenix Medical Systems to manufacture and sell in India and abroad
- To ensure expedited technology translation process, the agreement includ ed diligently drafted technical milestones including fund raising, techni caldevelopment and regulatory approvals

Recycling Flower Waste from Places of Worship

CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow developed the technologies for judicious utilization of bio-resources converting:

- Flowers into incense sticks and fragrant cones
- The fresh petals of scented roses are used for making rose water,
- leaves of the basilused for distillation of its essential oils
- decomposed flowers and leaves of belpatra(Aegle marmelosL) are used for making vermin-composts which is used as organic fertilizers in kitchen gardens and pots

CSIR - CIMAP

Socio-Economic Impact:

- Creating employment opportunities for over 3000 women creating a livelihood of Rs.200 to Rs.1000 per day
- Judicious recycling of flower waste and reducing waste generation
- Non-toxic and organic bio-resources are safer than the chemical based products for both the users and the personnel involved in manufacturing
- Less smoke produced from organic flower-based incense sticks

Technology Transfer Model

The technology transfer model of making incense sticks and fragrant cones are two types:

a). For women Self Help Group- Free training and demonstration offered

b). For MSMEs- Technology Transfer for an upfront fee and royalties on sales and training offered for a fee

Measuring and Communicating the Value and Impact and Benefits of academic commercialization. March 2023

Value And Impact Of Academic Technology Transfer

The Need To Improve How We Communicate The Value And Impact Of Academic Technology Transfer And Knowledge Exchange Activities*

By John A. Fraser

1. Introduction

In spite of widespread activities in U.S. universities since the mid-1980s, many of the key stakeholders in our activities do not yet have an appreciation of the positive impact of academic technology transfer (TT)[1] and knowledge exchange (KE)[2] on their institutions and the U.S. economy.

Early examples include the Cottrell Electrostatic Precipitator[3] invented by FG Cottrell at the University of California at Berkeley in 1907 and the Canadian discovery of the importance of Insulin at the University of Toronto and its commercialization by the Eli Lilly Corporation in the 1920s.[4] A major expansion of the activity occurred with the passage of the Bayh-Dole Act in the early 1980s. Both AUTM and the Federal Lab Consortium have annual reports on such yearly activity.

What about today? Recent examples include the partnerships amongst universities and federal labs to assist the private sector to create successful COVID vaccines.

Why is there still a perceived lack of understanding by many of our stakeholders of the impact of our activities?

Possibly because our stakeholders (elected officials, senior leadership of research institutions) have turnover in their positions and also have a very broad scope of responsibilities in which oversight of technology transfer is a small part. Thus, understanding of our impact is modest to begin with and lost as they leave their posts and move on.

It is also clear that we TT practitioners have communicated primarily using transaction metrics (numbers of disclosures, patent applications, licenses, etc.) and stories. This is fine as far as it goes, but I believe that primarily using transaction metrics severely limits the way in which we can communicate the impact and value of what we do!

■ John A. Fraser,
President,
Burnside Development & Assoc. LLC,
Bethesda, MD, USA
E-mail: jfraser@burnsidedev.com

Why?

Communicating using primarily transaction metrics forces the audience to understand the mechanisms of how we practitioners do things. The audience asks themselves, "why are disclosures and patents so important?" In reality, the audience is not overly concerned with the mechanics of how we do things. What they do care about is how our activities can help them do their job of achieving institutional goals and advancing their careers.

The Solution?

Determine who is in the audience we are addressing and describe the benefits for them of our activities, next reinforce understanding by using a story or two to put a name and face to the successful activity and finally use the transaction metrics to show how the activity scales to have a very measurable economic impact. This will be expanded later in the article.

Why is it increasingly important to clearly communicate the impact and value of what we do? Because what we do matters!

Dr. Norman Augustine (and coauthor Neal Lane) have once again stepped forward to issue a clarion call[5] that "the country's global leadership is being challenged in a rapidly changing and increasingly competitive world. The United States cannot afford to be complacent about the advancements in science and technology that are needed to power the economy, defend the nation, maintain public health, and combat climate change."

*This paper is based on the content of the "Improving The Communication Of The Value And Impact Of What We Do" roundtable presented at the 2022 AUTM AGM in new Orleans.

1. Technology transfer is the name used largely in the United States to describe the process by which existing knowledge, facilities or capabilities developed under research and development (R&D) funding are utilized to fulfill public and private needs.

2. Knowledge Exchange (KE) or Knowledge Transfer (KT) is a term used largely in the United Kingdom to describe the equivalent process, which aims to maximize the two–way flow of technology, IP and ideas. In turn this enables companies (existing and new) or other non–academic organizations and the public sector, to drive innovation leading to economic and social benefit and enables publicly funded research organizations (PROs) to advance research and teaching.

3. *https://en.wikipedia.org/wiki/Electrostatic_precipitator.*

4. *https://en.wikipedia.org/wiki/Insulin.*

5. *https://bit.ly/3tuVxKP.*

Session 4 B :
Training and excelling as Tech Transfer Professionals (TTPs)

John
Fraser

Topics Covered

1. What skills and capabilities should TTPs focus on strengthening?
2. What are the formal mechanisms for building credentials?
3. What are the ways to gain experiential learning?

Skills and Capabilities

COMMUNICATION

Using the Communication Tools to Communicate to identified Audiences

RELATIONSHIP BUILDING (EMPATHY)

Building INTERNAL relationships with researchers, institution leadership, administrative colleagues and the internal entrepreneurial community and EXTERNAL relationships with companies, the local community and local and national levels of government.

THE TT MECHANICS

Learning the Mechanics by **Doing** and Courses.

Specific skills. IP Identification, Protection & Portfolio Management; Evaluation; Marketing + Transactions; Venturing; Valuations and Managing relationships over time. Skill level recognition via RTTP certification, or national certification or US based CLP certification.

Session 4 C :
IP Management for TT Professionals

John
Fraser

Topics Covered

- **A quick overview of the basics, followed by a discussion on key issues in IP portfolio management and strategic management for optimal outcomes.**
  - **The Basics: the Usual Suspects: Inventions, Creative Works, Software, Tangible IP, databases, Plant varieties and Seed, etc., Social Innovations.**
  - **Methods of Protection: Patents, Copyrights, Retention of Tangible IP.**

IP Portfolio Management

FSU Product Pipeline 2005

260 Invention Disclosed; 320 Provisional/Utility Patent Apps; 143 US Patents since FY 1995
75 CDA's completed; 22 Deal Opportunities*

PRODUCT	LICENSEE	APPLICATION	PRE-LICENSE	LICENSED TO CORPORATIONS		
				Product Development	In Market	Terminated
EDUCATION						
Job Skills Education Program (JSE	NCS Pearson Publishing	basic job skills army training				
WebPath	FSU	medical pathology				
FI Center Academic Advisory Serv	State of Florida	high school - university				
Partners for Healthy Baby Books	FSU	early child care				
Womens' Self Esteem Book	FSU	consumers				
Science Tobacco & You	TSI	grade 4 - 8 science education				
MagLab Alpha	Sempco Inc.	grade 4 - 8				
Ethics Course	LearnSomething.com	state government				
PHARMACEUTICAL						
synthetic-Human Growth Factor	GAP Funding	tissue growth				
Taxol analogs	Taxolog (S)	cancer				
Metronidazole	SDR Pharma	antibiotic - vs ulcers				
Metronidazole	SDR Pharma	Xray radiosensitizer				
Taxol production method	Bristol-Myers Squibb	cancer				
MEDICAL DEVICES						
Mad Cow Disease Diagnostic	GAP Funding	Food Industry				
magnetic separations of proteins	Nanomagnetics & Biotech Inc (S)	heart attack confirmation				
tree nut allergens	BioMay	allergy diagnostic				
Pacifier Activated Lullaby	GE Medical/Ohmeda	neonatal units-Hospitals				
INFORMATION TECHNOLOGIES						
Face Recognition Systems	GAP Funding	Security				
DQS queing software	Genias/SUN	software				
Career Portfolio	UCSD; Georgia Tech; Goldwater	student career advice				
Superensemble Forecasting	WP Inc.	weather forecasting				
Florist Software	FSU	Security, Flowershop				
FSU Smart Card	Cybermark	Security, Identification				
OTHER						
Neural network	SUTI	data mining				
Seminole Fight Song Sheet Music	Arrangers Publishing	School Spirit				
StratoSequence Robot	Nanostrata (S)	Research Tool				
PAUP Software	Sinauer Publishing	Research Tool				
FT-CRT	FSU	Petroleum analysis				
T.E.S.T.	TITAN Inc.	Tabletop Exercise Simulation				
Disaster Housing Resource On-Lin	FEMA	Disaster housing dbase				
Electron resonance spin device	Kyo-Spin (S)	ERS device components				
	Software AG	webenabling CICS legacy dbases				
Diagnostic Camera System	Integrated Design Tools (S)	Research Tool				
Cocktail Neck Ties	Stonehenge	Clothing				

(S) = FSU start-Up company	- company started based on FSU technology, expertise
Internal FSU Development	- disclosure, IP protected, GAP Funding to define commercial collaboration in place
External Develoment	- disclosure, IP protected, developed by industry/ Not GAP Funding
Product Development	- licensed, company working on product development
In Market	- product in marketplace
Terminated	- no longer being sold in market

* Includes status 3 (prospect identified) and status 4 (deal outstanding) from OIPDC Summary Sheets

last updated - 1/23/2006

Strategic Management for Optimal Outcomes

- **Commercialization: Outreach, Disclosure then Partnering + Licensing.**
  - **Administration of Agreements**
- **Infringement and Litigation**
- **Gathering and Communicating the Metrics**
- **Gathering and Communicating the Stories and Case Studies**

Strategic Management for Optimal Outcomes

IP Ownership in multi-Party Collaborations

Several research institutions join a Consortium of small and large companies and perhaps a national research lab. The State or National government funds the consortium to address a named research topic.

Question. Who owns what?

Ans. A common research program exists amongst the Parties. A common IP /IP Usage Policy needs to be created. One Party is designated as Facilitator and handles IP Disclosures and nonexclusive, pre commercial use by all Parties. Exclusive Commercial Licenses are available. If two Exclusive, identical Commercial Licenses are requested, then they are each signed with minimum Milestones, etc. The Parties then compete / collaborate as needed.

WHY UNDERTAKE TT / KE?

Summary of the Many reasons

THANK YOU FOR LISTENING !

Q&A

John Fraser, President
Burnside Development & Assoc. LLC
www: burnsidedev.com
Email ID: jfraser@burnsidedev.com

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Contact Us

https://www.low-carbon-innovation.org/

https://www.venturecenter.co.in/

https://www.techtransfer.online/

ttonline@venturecenter.co.in