

# Intellectual Property and Commercialization

Office of Technology Management

Christine F. Weaver, Ph.D.  
Director, Licensing & New  
Venture Development



# Technology Transfer: What is it?

It's all about getting from HERE.....



....to HERE



Intellectual Property!

- Process of transferring UTHealth discoveries from the lab/clinic to the private sector for commercial development
- Link between research and commercialization
- Licensing is primary vehicle in academia

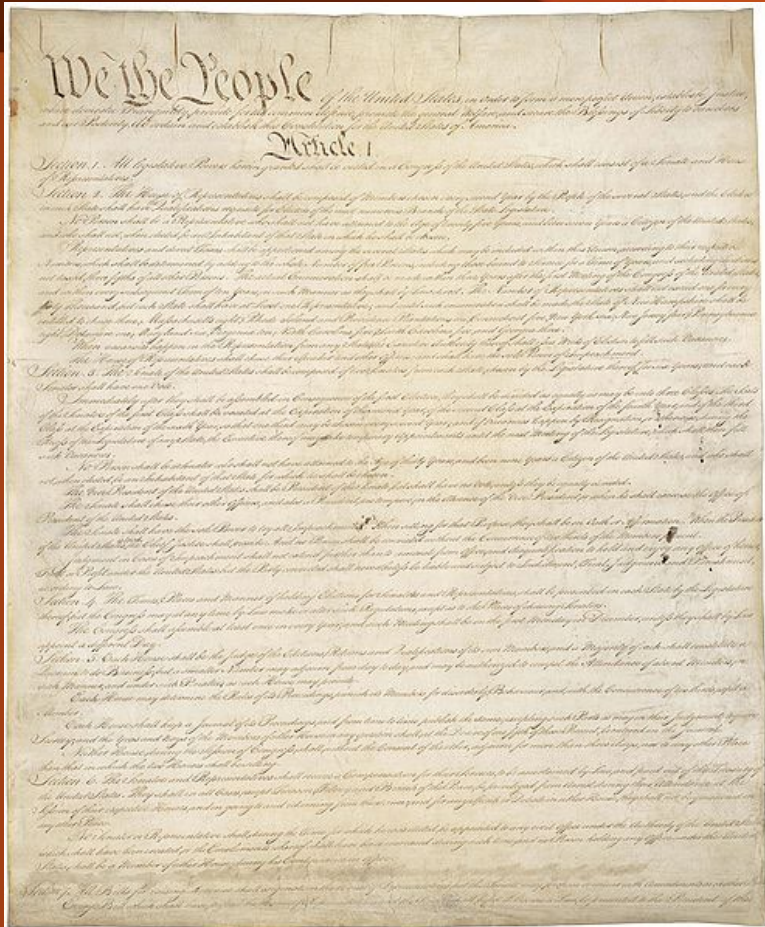
# What is Intellectual Property (IP)?



A product of the mind that has commercial value

- **Patent** (plants, utility, design)
- **Copyright** (music, graphics, written matter, software)
- **Trademarks** (name, sound, logo)
- **Trade secrets** (customer list, formula, know-how)
- **Software** (may be included in patents and copyrights)
- **Tangible Research Property** (biological materials, prototypes, databases, devices, equipment)

# What is a Patent?



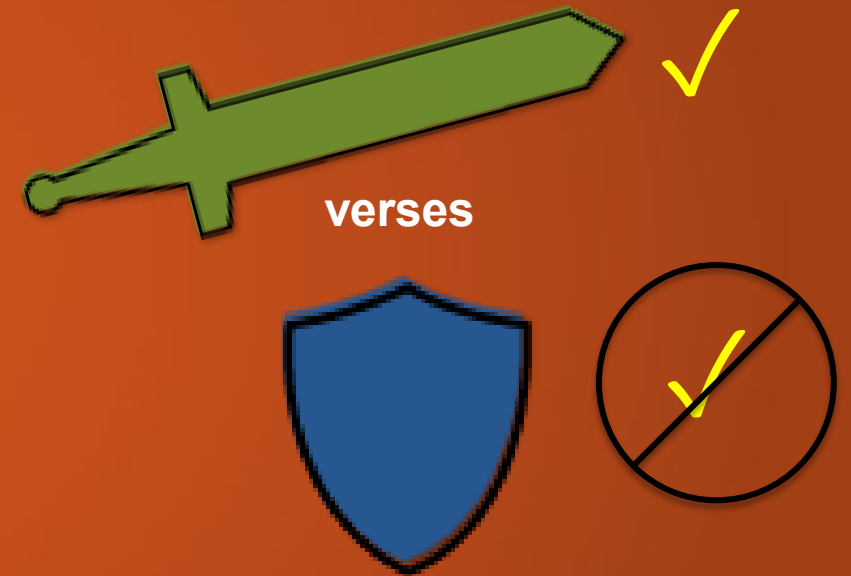
U.S. Constitution: Article I: Section 8,  
Clause 8:

- The Congress shall have power ... To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.
- ...patent law seeks to foster and reward invention... to promote disclosure of inventions... to stimulate further invention... and to permit free use of items in the public domain.  
U.S. Supreme Ct. (1979)

# What does a Patent do?

the right to exclude others from “making, using, offering for sale, or selling the invention throughout the U.S. or importing the invention into the U.S.” for a period of 20 years from the date of filing the patent application.

(35 U.S.C. 154 (1994))



# Copyright

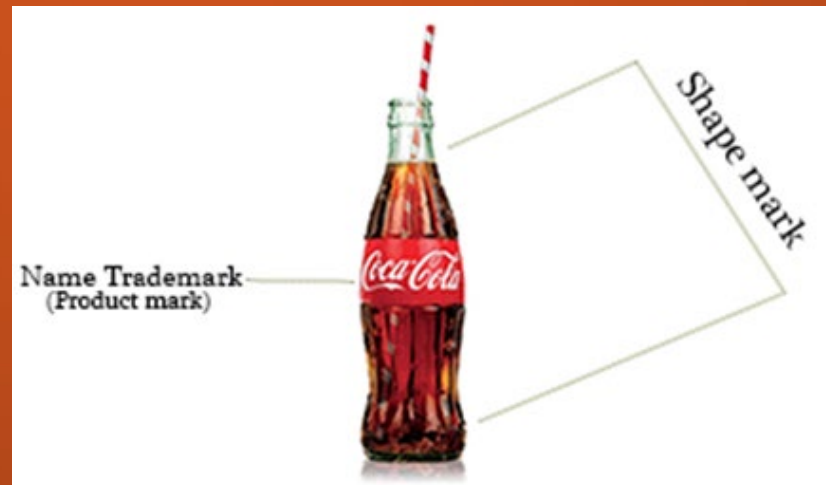
The exclusive right, granted by law, to the creator of a work to make, print, publish, perform/record and otherwise to control the use of a literary, dramatic, musical, artistic, or other work.

May include software. Cost is minimal.

# Trademark

“Words, names, symbol, device, slogan, packaging design or combination of these that serves to identify and distinguish one specific product from others. Includes sound, color combinations, or smell.”

Can be registered. Cost can vary



# Intellectual Property Protection

- **Patent** - 20 years from filing of application
- **Copyright** - Lifetime of creator plus 50 years
  - Happy Birthday!
- **Trademark** - 20 years, extendable
- **Trade Secret** - Forever, if careful

Each protection strategy provides the owner with the ability to exclude others from using the technology unless licensed, for a specified time period.



# Who owns IP?

The Board of Regents of the University of Texas System owns the IP when it is:

- created within an employee's scope of employment; or
- created on UT System time, or with use of UT System facilities/resources; or
- Resulting from research supported by Federal Funds or 3<sup>rd</sup> party sponsorship or university gift.

# What is a Invention?



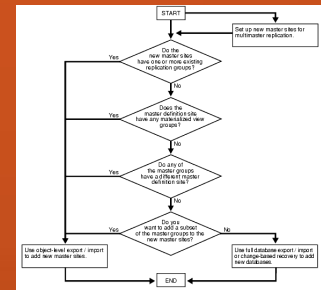
- An invention is a solution to a technical problem
- Inventions are important, but not everything important is an invention.
- An invention starts with an idea, but must be more than an idea
  - Conception and reduction to practice

# Patentable Inventions?

- Some inventions are patentable and some are not.
  - Judicial exceptions: abstract idea, law of nature or natural phenomenon, humans
- In the U.S., a patentable invention must be claimed as either a

- machine
- a composition of matter
- Method or a process

2. A method of identifying a vulnerable atherosclerotic plaque in a living vessel comprising the steps of:  
detecting a region along the luminal wall having a temperature that is higher than that of an adjacent region;  
and  
locating the vulnerable plaque based upon the higher temperature of the detected region.

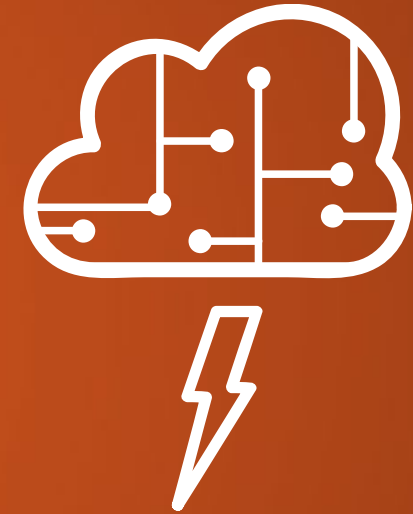


- a manufacture
- **Must be new, useful, and non-obvious.**



# Can I patent this?

- |   |          |
|---|----------|
| • Perpetual motion machine                      | No       |
| • Naturally-occurring culture of microorganisms | No       |
| • Enriched or pure culture of microorganisms    | Yes      |
| • Human Gene                                    | No       |
| • Word-processing application stored on a disk  | Yes      |
| • Song stored on a disk                         | No       |
| • Genetically-engineered mouse                  | Yes      |
| • Genetically-engineered human                  | No       |
| • A new use for aspirin                         | Yes?     |
| • Medical or surgical procedure                 | Yes, but |
| • Method of doing business                      | Maybe?   |
| • Diagnostic assay                              | Maybe?   |
| • Algorithm                                     | Maybe?   |





US006293874B1

(12) **United States Patent**  
**Armstrong**

(10) **Patent No.:** US 6,293,874 B1  
(45) **Date of Patent:** Sep. 25, 2001

(54) **USER-OPERATED AMUSEMENT APPARATUS FOR KICKING THE USER'S BUTTOCKS**

*Primary Examiner*—Joe H. Cheng  
*Assistant Examiner*—Kim T. Nguyen  
(74) *Attorney, Agent, or Firm*—Pitts & Brittan, P.C.

(76) **Inventor:** Joe W. Armstrong, 306 Kingston St., Lenoir, TN (US) 37771-2408

(57) **ABSTRACT**

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

An amusement apparatus including a user-operated and controlled apparatus for self-infliction of repetitive blows to the user's buttocks by a plurality of elongated arms bearing flexible extensions that rotate under the user's control. The apparatus includes a platform foldable at a mid-section, having first post and second upstanding posts detachably mounted thereon. The first post is provided with a crank positioned at a height thereon which requires the user to bend forward toward the first post while grasping the crank with both hands, to prominently present his buttocks toward the second post. The second post is provided with a plurality of rotating arms detachably mounted thereon, with a central axis of the rotating arms positioned at a height generally level with the user's buttocks. The elongated arms are propelled by the user's movement of the crank, which is operatively connected by a drive train to the central axis of the rotating arms. As the user rotates the crank, the user's buttocks are paddled by flexible shoes located on each outboard end of the elongated arms to provide amusement to the user and viewers of the paddling. The amusement apparatus is foldable into a self-contained package for storage or shipping.

(21) **Appl. No.:** 09/477,175

(22) **Filed:** Jan. 4, 2000

(51) **Int. Cl. 7** ..... A63H 37/00

(52) **U.S. Cl.** ..... 472/51; 472/55

(58) **Field of Search** ..... 472/51, 55, 137; 482/51, 72, 148

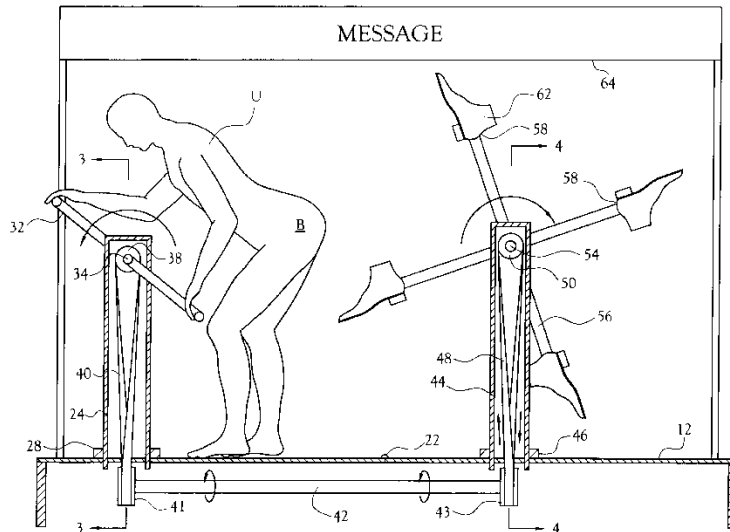
(56) **References Cited**

**U.S. PATENT DOCUMENTS**

654,611	7/1900	De Moulin .	
920,837	5/1909	De Moulin .	
953,411	3/1910	De Moulin .	
966,935	8/1910	Mamaux .	
976,851	11/1910	De Moulin .	
1,175,372	3/1916	Newcomb .	
4,457,100	* 7/1984	Nightingale .	446/333
5,785,601	* 7/1998	Kubesheski et al. .	472/135

\* cited by examiner

14 Claims, 7 Drawing Sheets



# Just because you can?

(54) **USER-OPERATED AMUSEMENT APPARATUS FOR KICKING THE USER'S BUTTOCKS**

# Who is an Inventor?

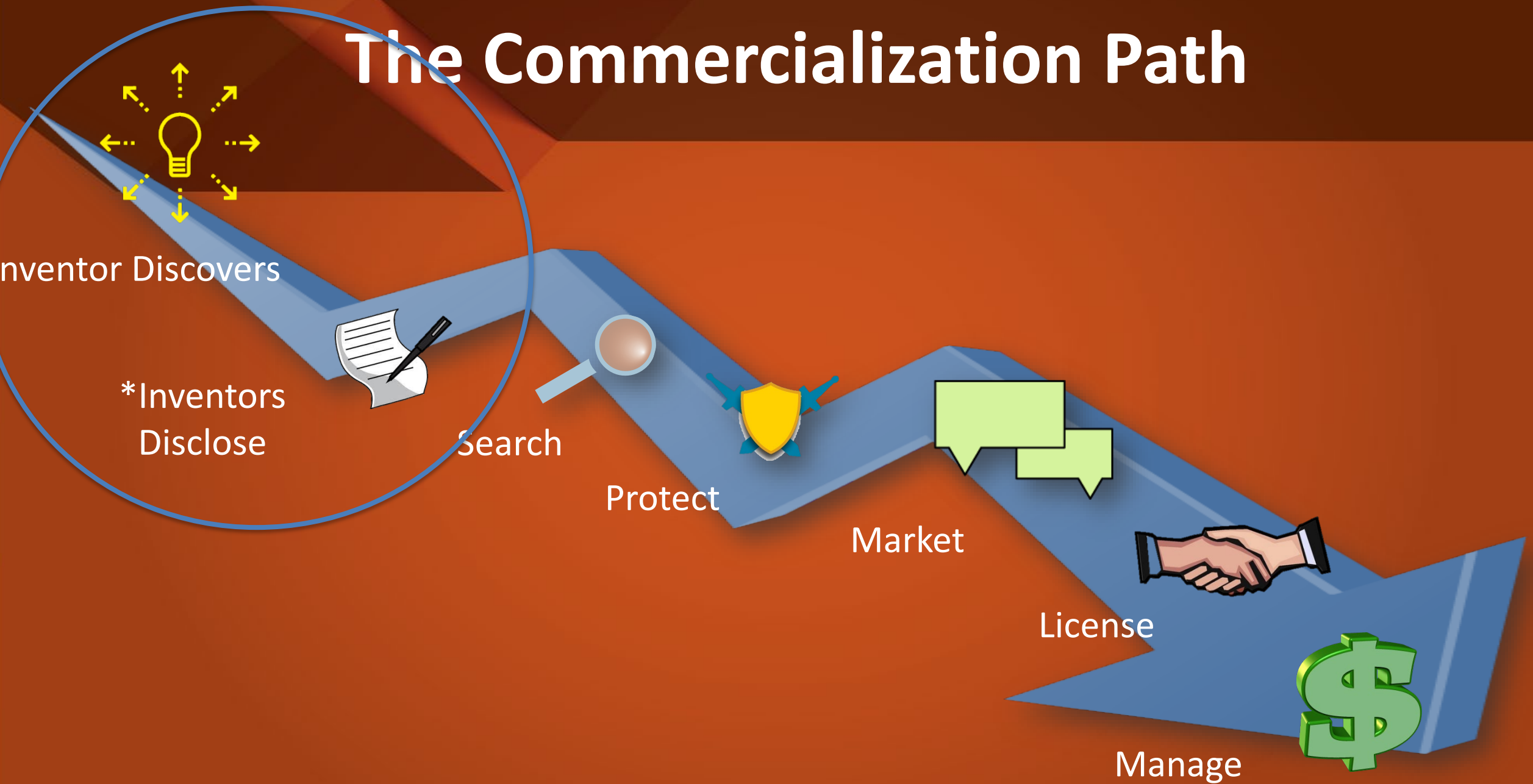
- A person who conceives, produces or contrives something previously unknown by the use of ingenuity or imagination
- Co-inventors if each contribute to the inventive process, even if unequally
- Not necessarily co-inventor if only following directions
  - **A co-author is not necessarily an inventor**
  - **Inventorship is dependent on the specific claims in an application**
    - Co-Inventors have equal rights (not as a percentage of contribution)
- A matter of **LAW**

# Why do I care about IP?

- IP is a way to translate your research to the marketplace—  
OTM is your link to commercialization, i.e. through existing or new businesses, investors (\$\$), etc.
- Federal Grant Agencies require IP to be reported not only on your grant report, but through our office (iEdison)
  - Bayh-Dole Act 1980's
    - Created environment for technology transfer from universities
    - Government reporting requirements for inventions made using federal funds




# The Commercialization Path





# I think I have an invention...what do I do next?

  
**UTHealth™**  
The University of Texas  
Health Science Center at Houston  
OFFICE OF TECHNOLOGY MANAGEMENT  
TECHNOLOGY REPORT

For OTM use only

File #: \_\_\_\_\_

Submitted to: \_\_\_\_\_

Funding Agency: \_\_\_\_\_

1. TITLE OF TECHNOLOGY: \_\_\_\_\_

2. CREATOR(S) INFORMATION: \_\_\_\_\_

Please list the full name of all UTHealth employees or students and any non-UTHealth personnel who have contributed to the development of the technology by conceiving or elaborating on the idea, designing experiments, evaluating experimental results, contributing features while building a device or performing a method, or otherwise directly contributing to the technology beyond merely providing funds, work space, materials, or entirely directed labor. Joint appointment with any other university, a company, or governmental agency or the like must be noted below.

Name: _____ School: _____ Title: _____ Department: _____ Work Address: _____ Work Phone: _____ Work Email: _____ % Contribution: _____ What is this individual's contribution: _____	Employer: <input type="checkbox"/> UTHealth <input type="checkbox"/> Other (Name): _____ % Time Employed by UTHealth: _____ % % Time Employed by Other: _____ % Other Appointment: <input type="checkbox"/> None <input type="checkbox"/> Clayton <input type="checkbox"/> Other: _____ Home Address: _____ Home Phone: _____ Personal Email: _____ Citizenship: _____
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Note: OTM should be informed of any changes to the above information

Name: _____ School: _____ Title: _____ Department: _____ Work Address: _____ Work Phone: _____ Work Email: _____ % Contribution: _____ What is this individual's contribution: _____	Employer: <input type="checkbox"/> UTHealth <input type="checkbox"/> Other (Name): _____ % Time Employed by UTHealth: _____ % % Time Employed by Other: _____ % Other Appointment: <input type="checkbox"/> None <input type="checkbox"/> Clayton <input type="checkbox"/> Other: _____ Home Address: _____ Home Phone: _____ Personal Email: _____ Citizenship: _____
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Note: OTM should be informed of any changes to the above information

Name: _____ School: _____ Title: _____ Department: _____ Work Address: _____ Work Phone: _____ Work Email: _____ % Contribution: _____ What is this individual's contribution: _____	Employer: <input type="checkbox"/> UTHealth <input type="checkbox"/> Other (Name): _____ % Time Employed by UTHealth: _____ % % Time Employed by Other: _____ % Other Appointment: <input type="checkbox"/> None <input type="checkbox"/> Clayton <input type="checkbox"/> Other: _____ Home Address: _____ Home Phone: _____ Personal Email: _____ Citizenship: _____
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Note: OTM should be informed of any changes to the above information

CONFIDENTIAL Page 1 of 5

- Technology Report Form
- Copyright Disclosure Form
- Software Disclosure Form
- Research Material Form

OTM's report form (left), as well as a wealth of IP related information for inventors, can be found on OTM's website:

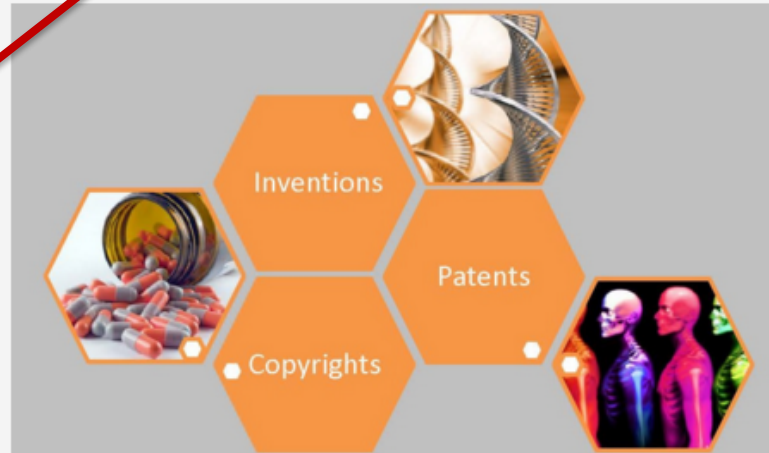
[www.uth.tmc.edu/otm](http://www.uth.tmc.edu/otm)

## Office of Technology Management

### Office of Technology Management

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- ▶ BCC-Biotechnology Commercialization Center
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- ▶ FAQ



### Office of Strategic Industry Initiatives

The new Office of Strategic Industry Initiatives was jointly established by OTM and UTHealth's Office of Research Academic Affairs in order to facilitate stronger strategic alliances between UTHealth faculty and biopharma industry.

**Contact: Melissa S. Thompson, Ph.D.**

### Latest Technologies

**Text Understanding in an Ontology Driven Platform, including Data Collection and Processing**

ABSTRACT Systems and method to aid in the collection, representation and mining of data are disclosed. More particularly, embodiments as disclosed may utilize a unifying format to represent data obtained or utilized by a system to facilitate linking between data from different sources and the commensurate ability to mine such data. Specifically,

### EVENTS & NEWS

- **UTHealth Startup Decisio Health named as a finalist in this year's Fierce Innovation Awards**

(Houston TX) – December 1, 2015  
– Decisio Health announced today

# Office of Technology Management

## Office of Technology Management

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▼ For Inventors

For Inventors

Forms and Instructions

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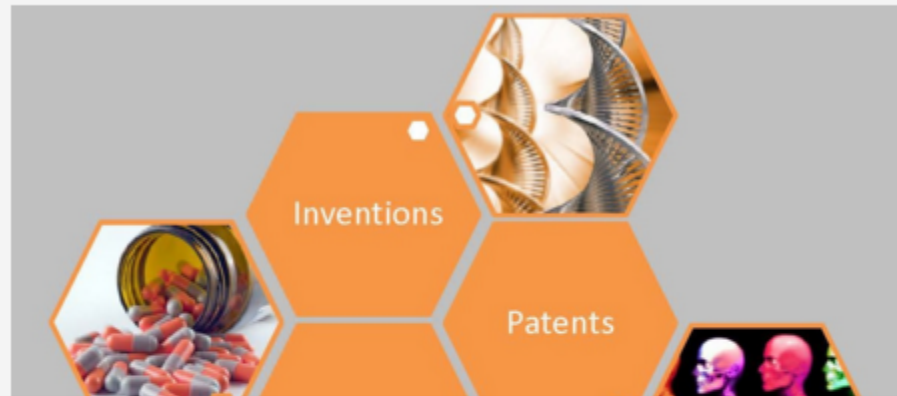
▶ Events & News

▶ Startups

▶ BCC-Biotechnology  
Commercialization  
Center

Funding Opportunities

Resources

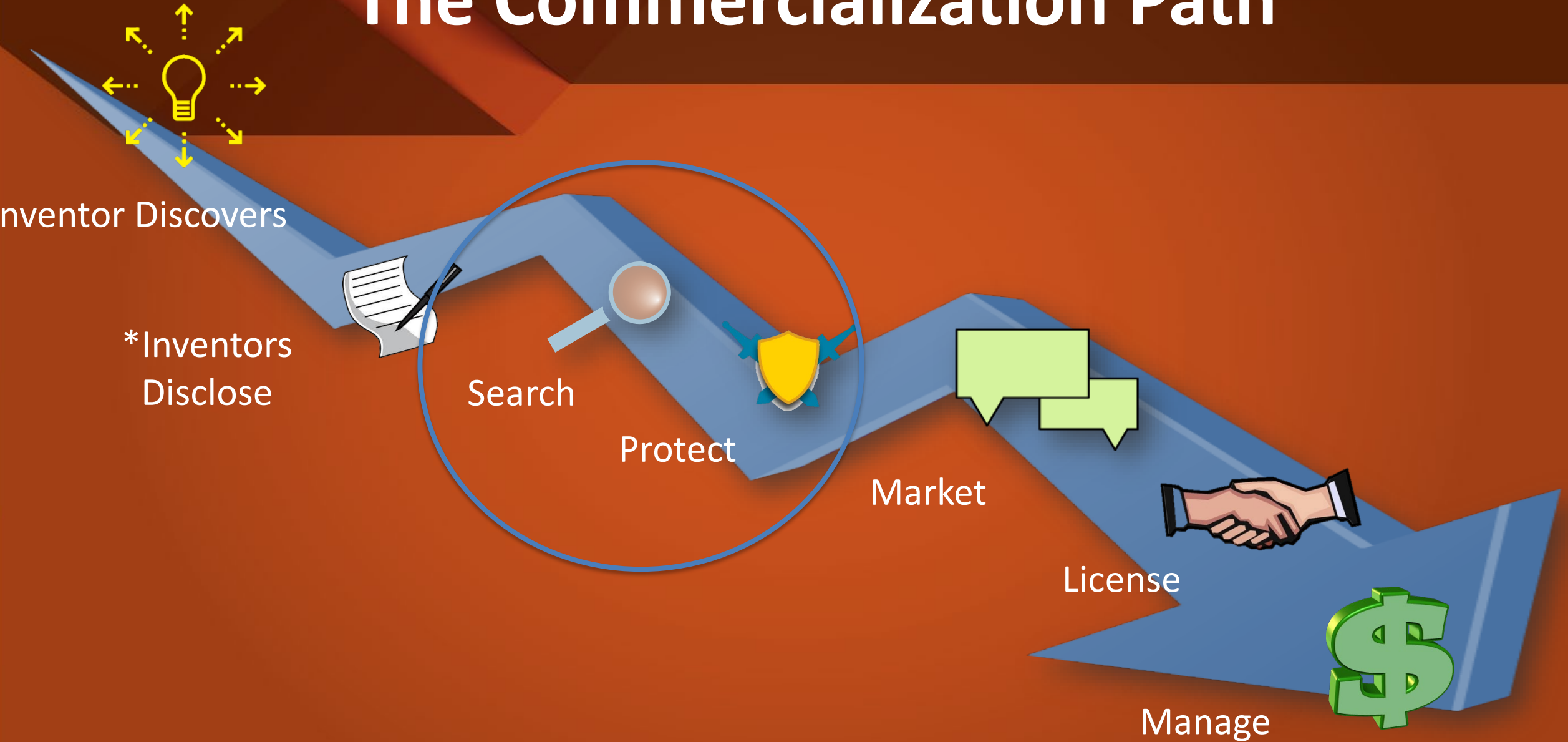


## Forms and Instructions for Reporting a Technology

### Technology Report Forms:

- Technology Report Form: **Patents**
  - Additional Creator Addendum Form-Technology
- Technology Report Form: **Software**
  - Additional Creator Addendum Form-Software
- Technology Report Form: **Copyright**
  - Additional Creator Addendum Form-Copyright
- Technology Report Form: **Research Material**

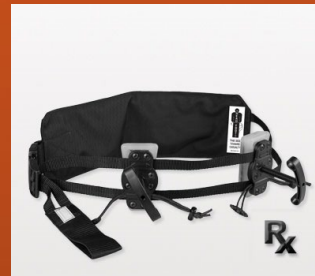
# The Commercialization Path



# Search & Assess the Technology

## Qualitative assessment of potential product

- **The technology** should lead to a useful, commercially valuable product
- **Intellectual property protection**; technology should be adequately protected; other IP must not block the path to commercialization
- **Path-to-market**; clear business model/strategy for generating profit
- **Regulatory issues**
- **Commercial Partnership Opportunity**
- **Licensing: Big company vs. small company vs. start-up company**



# What additional information do we need to know for IP Protection?

- Is there Novelty/Obviousness
- Public Disclosures?
- Funding Sources
- License Agreements
- Sponsored Research Agreements
- Material Transfer Agreements
- Software Agreements
- Clinical Trial Agreements
- Inventors' employment



Manuscripts  
Abstracts  
Posters  
Seminars, including job interviews  
Web Postings  
Genbank  
Conversations  
Patents

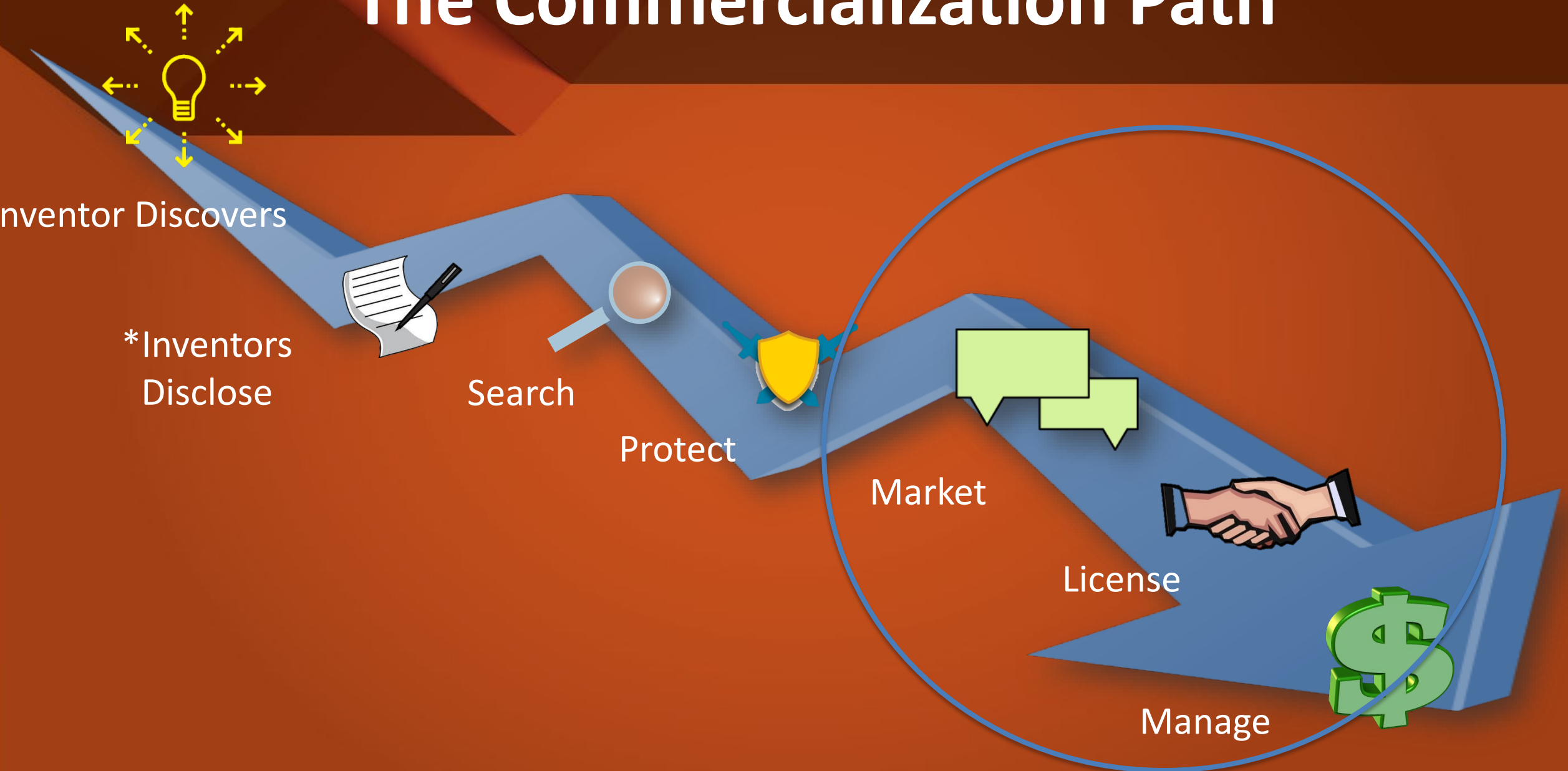
# Why Assess? Why not just file?



## Obtaining a patent is expensive!

- An average of **\$15,000+** in legal fees **just to file** a US patent application, **\$25,000** to issue
- An average of 3-5 years to prosecute a US patent
- An estimated **\$480,000** in legal fees to file and maintain US and standard foreign venues

# The Commercialization Path





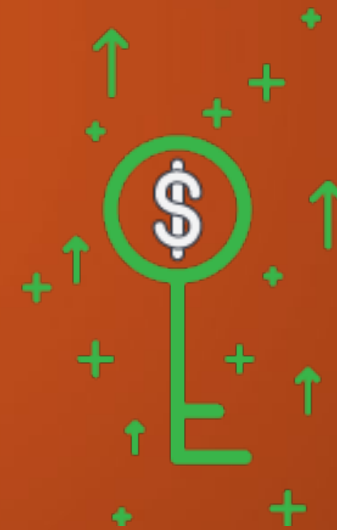
# Commercialization

- Valuation
- Negotiation
- Execution of Agreements
- Agreement Management

# What's the benefit to you?

At UTHealth, we distribute cash received from the licensing of your IP as follows:

- Creators 50%
- Patent fund/OTM 35%
- Your School 5%
- Your Department 5%
- Your Laboratory 5%



# We Need Your Help!

- Talk to us **(as EARLY as possible)**
- Confidentiality—UT authorized signature needed on CDAs/NDAs
- **Documentation/Record Keeping**
- Assist with searching
  - Scientific Literature
  - Patents
  - Commercial potential
  - Licensee Identification
- Assist with patent prosecution
- Assist with licensing

# OTM By The Numbers

- \$4+ million** Annual Gross Revenue
- \$100+ million** Licensing Revenue (cumulative)
- 25+** New License/Option Agreements per Year
- 500+** Total License/Option Agreements (cumulative)
- 2700+** Patents/Patent Applications (cumulative)
- 50+** New US Patent Applications Filed Each Year
- 100+** Products on the Market



## Portfolio Companies (UTHealth)

- **62 portfolio companies** (cumulative); 31 active
- **More than \$250 M** in capital raised to date
- **3 companies IPO/acquired** with market cap >\$3B : Volcano, LifeCell; PLx Pharma
- **More than >1300 jobs** created in private and 3 public companies

## Selected Portfolio Companies:



# MORE Information



[otm@uth.tmc.edu](mailto:otm@uth.tmc.edu)



[uth.tmc.edu/otm](http://uth.tmc.edu/otm)



[@UTHealth\\_OTM](https://twitter.com/UTHealth_OTM)



UTHealth Office of Technology  
Management<sup>®</sup>

# Contact Us: We are here to help YOU!

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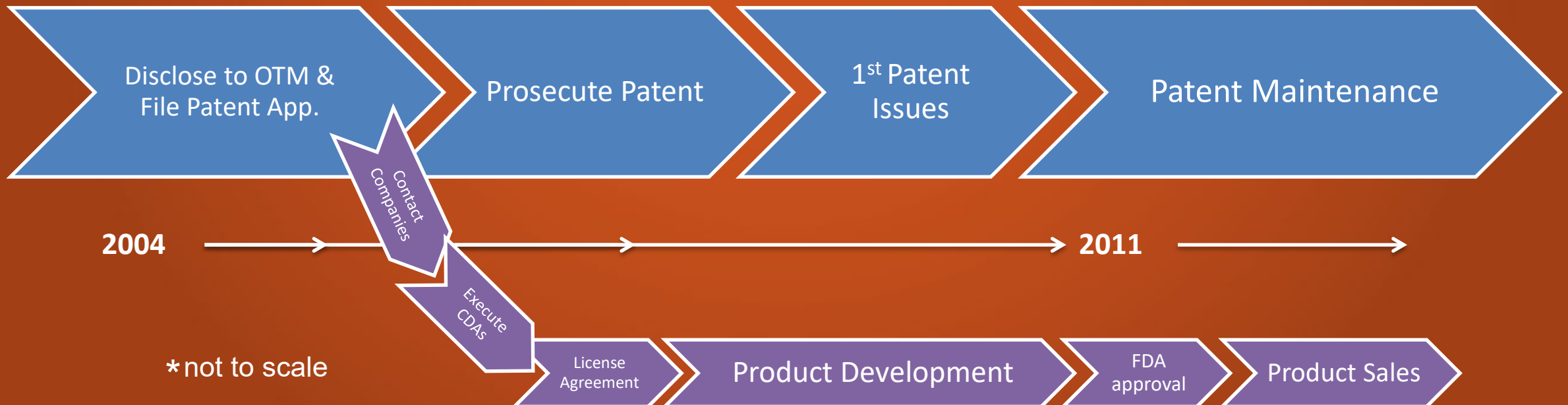
# Device Example: Portable Fluid Warmer



- 2+ patents issued by the USPTO
- 1 startup company formed: EMIT Corporation
- FDA 510(k) clearance received in FY2011 to market the device as “HypothermX™ HX100”



## Timeline\*



# Device Example: Portable Fluid Warmer



Various fluid warmer prototypes over the years, from research prototype to FDA approved product for sale

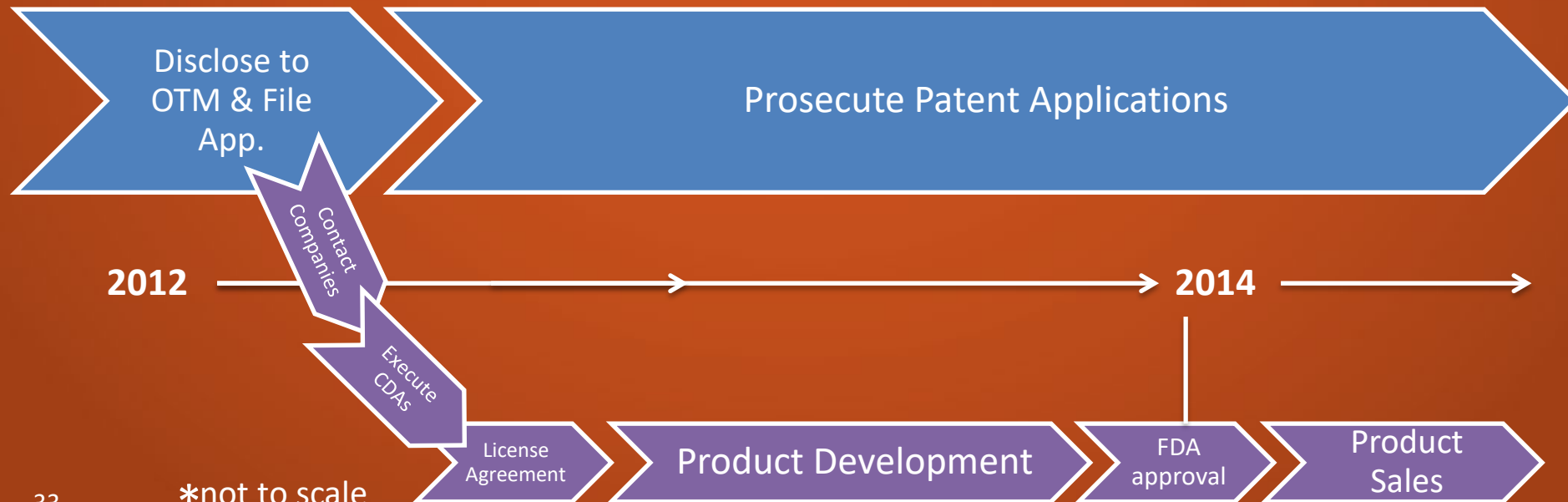


# Software Example: Patient Dashboard



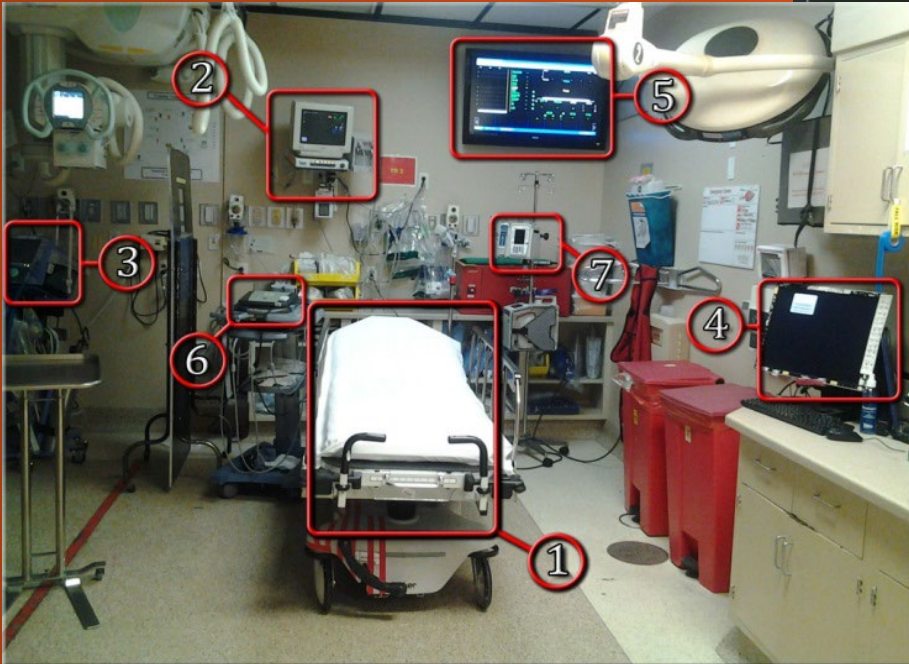
- 1 issued patent in the United States
- patents pending in the United States and abroad
- 1 startup company formed: Decisio Health
- FDA 510(k) clearance received in FY2014

## Timeline\*



# Software Example : Patient Dashboard

Early prototype:



ED BAY #1 : **ONLINE**

V2.1.1+35 (4EC8013-DEV)

00:01:29  
**ROCURONIUM**  
00:01:03  
**INTUBATION**  
00:00:01  
**CHEST TUBE - L**

**00:04:23**

RBC	FFP	PLT
<b>3</b>	<b>6</b>	<b>1</b>
00:00:12	00:00:13	00:00:05



HR: **123** 00:00:28  
SBP: **100** 00:00:28



GCS: **5** E: 1 V: 2 M: 2  
00:00:44

FAST

**POSITIVE**

ABC+: **2**

**POSITIVE**

CRYSTALLOID: **600CC**

CONSULT NEUROSURGERY

CONSIDER ICP

00:01:05  
INTUBATE

00:00:54  
CALL BLOOD BANK (4-3640)

PATIENT: **XRAY0123** - M - 54

NURSE: **S., BINOD**

# Software Example : Patient Dashboard

FDA approved  
version:

**BED 1: ONLINE** (UNSTABLE-DIVAD1) 2013-12-09 11:26:13

Timeline  
Morphine 4mg 00:00:14  
Chest Tube - R 00:00:10  
Intubation Prehosp

**00:00:48**

HR: 111 00:00:44  
SBP: 100 00:00:44  
TEMP: 97.3 00:00:44

RBC: 7 FFP: 7 PLT: 1  
00:00:46 00:00:46 00:00:14

GCS: 3 PREHOSP  
EYE: 1 VERBAL: 1 MOTOR: 1  
CRYSTALLOID: 0cc  
FAST 00:00:06  
ABC+: 2  
POSITIVE POSITIVE

Recommendations  
CONSULT NEUROSURGERY 00:00:47 ELAPSED  
CALL BLOOD BANK (4-3640) DONE  
INTUBATE DONE

PATIENT: XRAY0001 F/25 NURSE: JACKIE

- Severe Sepsis**  
Activated @ 8/31 14:43  
3 hr - 8/31 17:43
- Antibiotics
  - Blood Cultures
  - Initial Lactate  
6 hr - 8/31 20:43
  - Repeat Lactate
- Septic Shock**  
Activated @ 8/31 15:01  
3 hr - 8/31 17:43
- Fluid Resuscitation  
6 hr - 8/31 20:43
  - CV Ultrasound
  - CVO2
  - CVP: 7mm Hg
  - Fluid Challenge
  - Focused Phys Exam
  - Passive Leg Raise
  - Vasopressors

**BURN 1: ONLINE** v1.13 D2 8/31 18:17:08

**VITALS** 8/31 14:57  
HR: 110 (105-123)  
BP: 108 / 66 (80)  
SpO<sub>2</sub>: 95% CVP: 7mm Hg

**HEME** 8/31 13:26  
14.1 14.8 160  
45.3

**RENAL/LYTES** 8/31 13:26  
143 102 16 Ca: 9.8  
4.5 25 1.1 Mg: 1.6  
PO<sub>4</sub>: 2.6

**BUNDLES**  
FOLEY Document Foley Care  
HIT  
RENAL  
DVT  
CENTRAL LINE  
NUTRITION

HR: 5 hours 16 minutes @ 8/31 14:57

SBP: 5 hours 16 minutes @ 8/31 14:57

ENDOCRINE 8/31 13:26  
Glucose: 91 (76-95)

TEMPERATURE 8/31 14:00  
Tc: 102.3°F  
Tm: 102.5°F @ 8/31 07:00

TEG 8/31 13:26  
ACT: 113 α: 76  
R: 0.4 MA: 64  
K: 1.2 Lysis: 4.8

LACTIC ACID 8/31 13:26  
8.2(7.3-9.2)

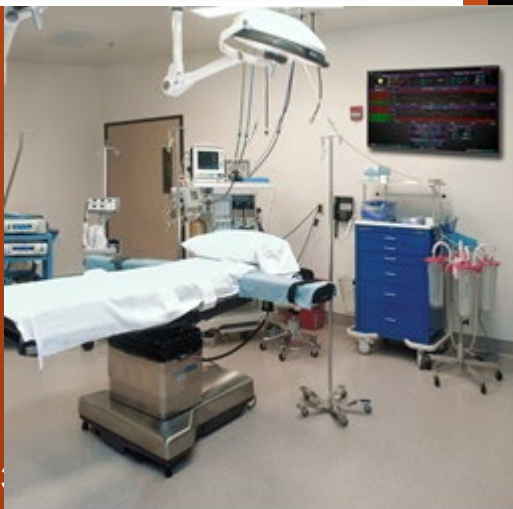
COAGS 8/31 13:26  
PT: 14 INR: 0.9 PTT: 31

NUTRITION 8/31 14:00

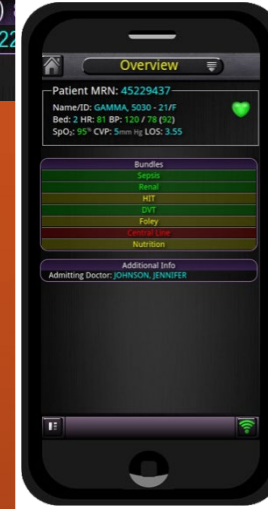
BLOOD GAS (ART)  
7.31 | 40 | 290 | 22

PROMOTE  
ADMITTING DR: BROWN, A.

PATIENT: XRAY, 8912 (60/F) MRN: 42302811



iPhone™,  
Android™  
Display



Android Tablet™, iPad™ Display

