

iTech Tool: Linking and Tracking NIH Awards' Invention & Commercialization

- Case Studies

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Introduction

- Currently the linkage and tracking of the NIH awards to the intellectual property (IP) data is far from complete or accessible. After a patent was filed or granted, it is even more challenging to track its commercial activities, i.e. licensing activities and/or start-up formation.
- To meet the above needs, OPA at NIH is developing a systematic tool called *iTech*, which will collect, link, and track extramural researchers and their grant awards with patent filings, licensing activities and/or startup formation.

Data and Methods

- Data used includes patent filing documents from US Patent and Trademark Office (USPTO); Data from institutes' Technology Transfer Offices; Web news & reports etc.
- Map patents/applications to NIH awards.
- Associate commercialization activities with patents, through web scraping/data mining and user manual updating.

Conclusions

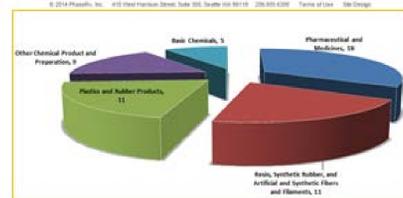
- Case studies illustrate that *iTech* system is capable to identify start-ups and licensing activities of a patent linked with NIH award, which were not reported in any existing NIH system.
- iTech* tool can assist NIH staff in their portfolio review, economic evaluation of program funding, and strategic planning.

Case 1: Dr. Stayton (U. Wash.): Grant to Patent to Biotech Start-up

Inventor Profile: Prof. Patrick Stayton is highly inventive over years, with total of 124 patents filed globally since 1995.



- Dr. Stayton's R01 award **R01EB002991** "Biofunctional Polymers for Intracellular Drug Delivery" led to the filing of patent US8822213 (CA2742955A1, WO2010053596A) in 2008.
- In 2008 Dr. Stayton founded Seattle biotech *PhaseRx*, pioneering the patented RNAi delivery technology, which raised \$19M from venture capital.
- Since then *PhaseRx* continues growing with 62 new Patents/applications filed to date



Case 2: Dr. Wang (U. Mich.): Grant to Patent to Acenta Therapeutics

- Dr. Wang is highly inventive, with total of 324 patents filed globally since 1995
- He co-founded biotech Acenta Therapeutics, focusing on anti-cancer drug development

Dr. Wang's Invention was highlighted by U-M Tech Transfer Office



Dr. Wang's award **R01CA121279** "Non-Peptide Small-Molecule Inhibitors of the MDM2-p53 interaction" led to the filing of patent US20140148494

Dr. Wang was Co-founder of *Acenta Therapeutics*



Licensing of Cancer Drugs from *Acenta Therapeutics* to Sanofi-Aventis

From the Philadelphia Business Journal
<http://www.bizjournals.com/philadelphia/stories/2010/05/31/daily40.html>
Sanofi-Aventis licenses potential cancer drugs from Acenta Therapeutics
Jun 4, 2010, 11:09am EDT
John George
Staff Writer
Biotechnology company Acenta Therapeutics could receive up to \$398 million under a global collaboration and licensing agreement it signed Friday with Sanofi-Aventis.
The deal covers several early-stage agents being investigated for their potential to enhance cancer control and treatment.

Case 3: Licensing: St. Jude's Patent Licensed to Juno Therapeutics

- Dr. Dario patented his findings in US8399645 "Chimeric receptors with 4-1BB stimulatory signaling domain" (not in RePORTER), funded by **R01CA058297** "Beta Cell Progenitors and Bone Marrow Microenvironment".
- In 2013 this patent was exclusively licensed to *Juno Therapeutics*, to commercialize the T-cell technology in cancer treatment
- This patent is highly marketable, its patent dispute between *Novartis* and *Juno Therapeutics* was settled in April 2015, where *Juno* received \$12.25 million.



Case 4: Licensing: U of Cincinnati's Patent Licensed to CardioDX

- Dr. Liggett filed patent US 7449292 on "Methods for predicting relative efficacy of a beta blocker therapy based on a B1-adrenergic receptor polymorphism" (not in RePORTER), funded by **P50HL052318**
- In 2006 this patent was exclusively licensed to CardioDx®, Inc. (CA), a cardiovascular genomic diagnostics company

