



# The value of patents

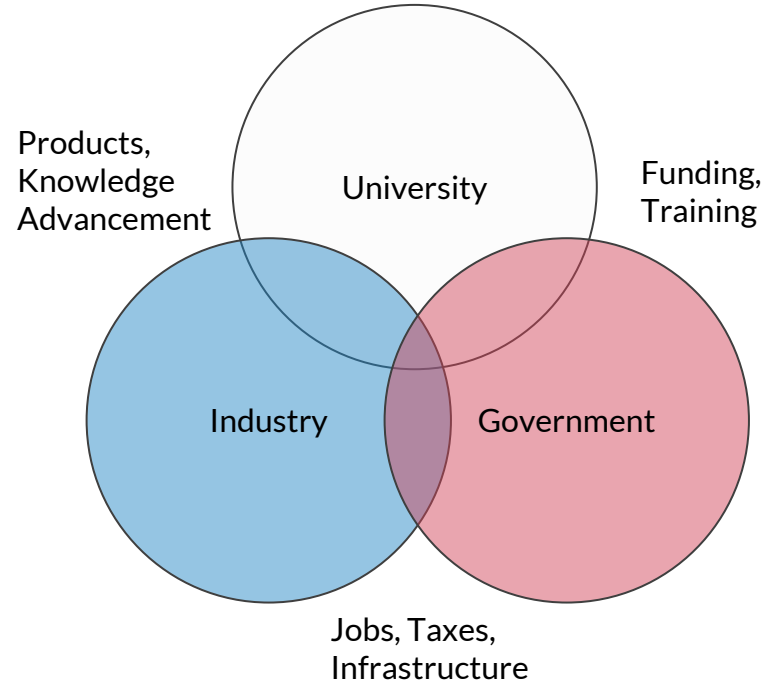
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#AltmetricSymp



# “Triple Helix” model of innovation

Innovation reliant upon  
interactions of  
University  
Government  
Industry



See:

[Etzkowitz & Leydesdorff, 2000](#)

Adapted from [Ngui Kimatu \(2016\)](#)





# Understanding innovation via patents

“Patents are a direct outcome of the inventive process”

“Particularly appropriate for capturing proprietary and competitive dimension of technological change”

Some patents are incremental

Measure commercialization, not always knowledge production

[Archibugi & Pianta, 1996](#)





# Why do patents make good data?

Longitudinal

Structured data on  
collaboration,  
commercialization, and  
inventors

Structured data on **related  
technologies** and  
**research** (prior art)






Patents contain two types of citations:

Citations to other patents

Citations to research outputs

			
US009918955B2			
(12)	<b>United States Patent</b>	(10) <b>Patent No.:</b>	<b>US 9,918,955 B2</b>
	<b>Soni</b>	(45) <b>Date of Patent:</b>	<b>Mar. 20, 2018</b>
<hr/>			
(54)	<b>METHODS OF REDUCING THE RISK OF A CARDIOVASCULAR EVENT IN A SUBJECT ON STATIN THERAPY</b>	5,603,959 A	2/1997 Horrobin et al.
		5,618,558 A	4/1997 Horrobin et al.
		5,656,667 A	8/1997 Breivik et al.
		5,698,594 A	12/1997 Breivik et al.
		5,750,001 A	6/1999 Breivik et al.

(56)	<b>References Cited</b>
<b>U.S. PATENT DOCUMENTS</b>	
7,112,609 B2	9/2006 Hermelin et al.

Colhoun, H. M., et al., "Primary prevention of cardiovascular disease with atorvastatin in type 2 diabetes in the Collaborative Atorvastatin Diabetes Study (CARDS): multicentre randomised placebo-controlled trial." Lancet 364: 685-9 (2004).





# Non-patent citations tell us...

- “The Knowledge Bases of the World’s Largest Pharmaceuticals Groups: What do patent citations to non-patent literature reveal?” ([2003](#))
- “Evidence from Patents and Patent Citations on the Impact of NASA and Other Federal Labs on Commercial Innovation” ([2003](#))
- “Market value and patent citations: A first look” ([2000](#))
- “The increasing linkage between US technology and public science” ([1997](#))
- “Is academic science driving a surge in industrial innovation? Evidence from patent citations” ([2005](#))





Three perspectives on one study:  
**Dr. Turner's malaria vaccine**





# Academia: Impact Case Studies (REF, RAE)

How is our institution's  
research making a  
difference?

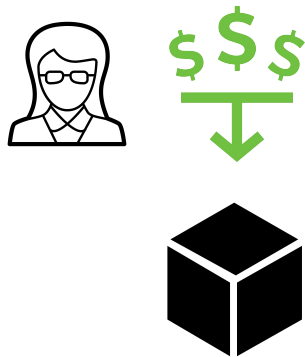
*"...The impact of Dr. Turner's  
malaria study is clear: countless  
lives were saved thanks to the  
patented vaccine she developed  
and licensed for production..."*





# Governments: Understanding ROI

What's the impact of the NIH's grant dollars?



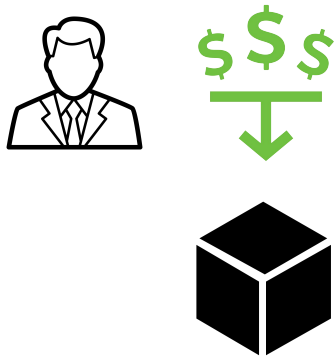
*"...For every 1 dollar spent funding Dr. Turner's malaria study, 5 dollars were invested in the US economy thanks to the patented vaccine she developed and licensed for production..."*





# Industry: Understanding ROI

What's the impact of a clinical trial?



*"...For every 1 dollar spent funding Dr. Turner's malaria study, 5 dollars might be earned thanks to the patented vaccine she developed and licensed for production..."*





# Questions?

