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FOR  
TECHNOLOGY TRANSFER AND RESEARCH COMMITTEE**

**Committee Meeting: 5/9/2017**

**Board Meeting: 5/10/2017**  
Austin, Texas

	<b>Committee Meeting</b>	<b>Board Meeting</b>	<b>Page</b>
<b>Convene</b>	<i>9:30 a.m.</i>		
1. <b>U. T. System Board of Regents: Discussion and appropriate action regarding Consent Agenda items, if any, assigned for Committee consideration</b>	<i>9:30 a.m.</i> <b>Discussion</b>	<b>Action</b>	<b>224</b>
2. <b>U. T. System: Report on U. T. System commercialization performance</b>	<i>9:31 a.m.</i> <b>Report/Discussion</b> <i>Ms. Goonewardene</i>	Not on Agenda	<b>225</b>
3. <b>U. T. System: Report on creative industry partnerships</b>	<i>9:40 a.m.</i> <b>Report/Discussion</b> <i>Ms. Goonewardene</i> <i>Ferran Prat, Ph.D., J.D.,</i> <i>U. T. M. D.</i> <i>Anderson Cancer Center</i>	Not on Agenda	<b>235</b>
<b>Adjourn</b>	<i>10:00 a.m.</i>		

1. **U. T. System Board of Regents: Discussion and appropriate action regarding Consent Agenda items, if any, assigned for Committee consideration**

RECOMMENDATION

No [Consent Agenda](#) items are assigned for review by this Committee.

2. **U. T. System: Report on U. T. System commercialization performance**

REPORT

Ms. Julie Goonewardene, Associate Vice Chancellor for Innovation and Strategic Investment and Managing Director of the U. T. Horizon Fund, will report on U. T. System commercialization performance. A PowerPoint presentation is set forth on the following pages.

# Report on U. T. System Commercialization Performance

Ms. Julie Goonewardene

Associate Vice Chancellor for Innovation and Strategic Investment and  
Managing Director of the U. T. Horizon Fund (UTHF)

U. T. System Board of Regents' Meeting  
Technology Transfer and Research Committee  
May 2017



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# Office of Innovation and Strategic Investment (OISI)

## Mission

OISI exists to ensure that life-changing innovations from U. T. System institutions reach the people who need them

**We help make innovation real**



# OISI's Commercialization Impact

- ▶ The commercialization of U. T. innovations directly improves the human condition in the State of Texas, the nation, and the world
- ▶ OISI serves commercialization offices by providing expertise and resources that enhance performance and reduce barriers to generate value



# U. T. System Commercialization Facts

*License executed every 2 days*

*U.S. patent issued every 2 days*

*Startup company formed every 13 days*



## U. T. System Commercialization Rankings

- 1<sup>st</sup> (U.S., public) *The World's Most Innovative Universities 2016*, Thomson Reuters
- 4<sup>th</sup> (world)
- 2<sup>nd</sup> (U.S.) Number of university startups formed in 2015-2016, Association of University Technology Managers
- 4<sup>th</sup> (world) *Top 100 Worldwide Universities Granted U.S. Utility Patents in 2015*, National Academy of Inventors & Intellectual Property Owners Association



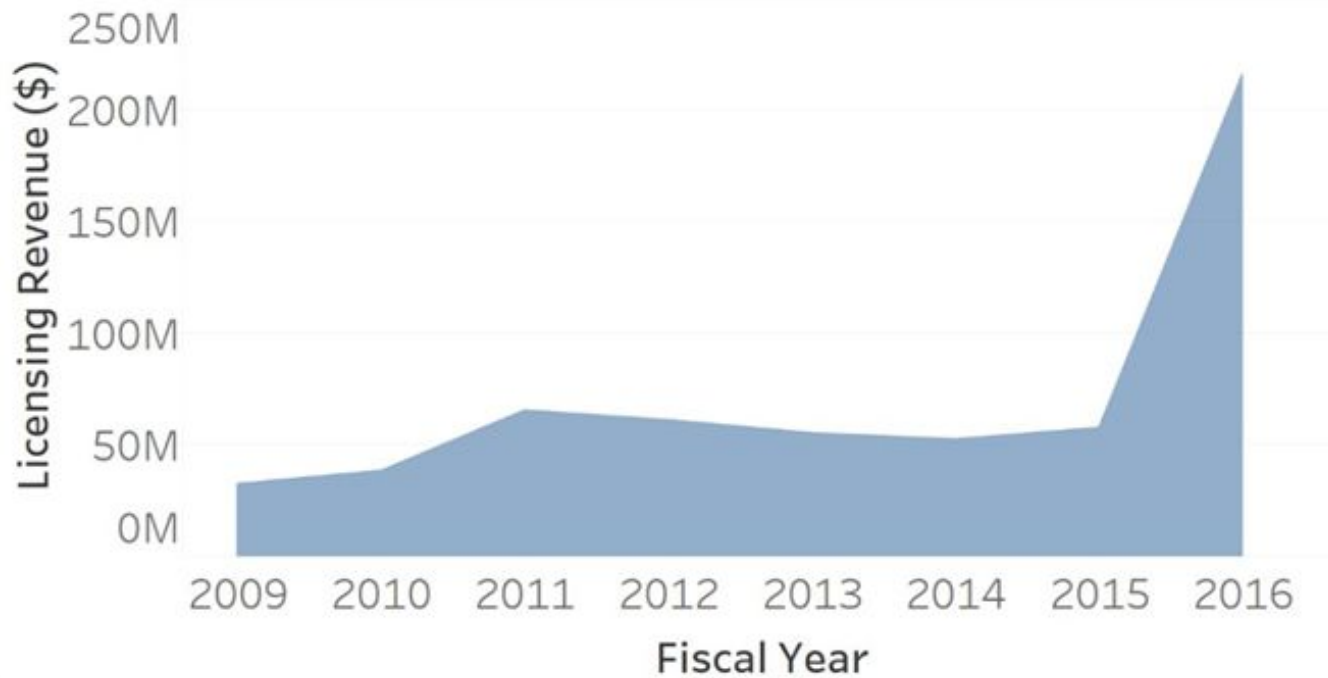


# Commercialization Performance

- ▶ Building a successful commercialization enterprise requires:
  - Nurturing a pipeline that results in stable licensing revenue
  - Facilitating an environment that increases the likelihood of positive anomalous events



# U. T. System Licensing Revenue, FY2009-FY2016



# Competitive Summary, Cumulative FY2011-FY2015

	University of Texas System	University of California System	University of Wisconsin System	State University of New York System	University of North Carolina System
Total Research Expenditures (\$M)	12,859	26,919	5,838	4,757	4,147
Federal Research Expenditures (\$M)	6,297	14,385	2,875	2,650	3,245
Industry Sponsored Research Expenditures (\$M)	1,268	1,759	126	748	180
United States Patents Issued	937	1,975	814	337	234
Licenses with Income >\$1M	50	81	36	12	3
Startups Formed	117	337	38	44	72
Licensing Revenue (\$M)	292	679	277	63	19

Source: Association of University Technology Managers Licensing Surveys, 2011-2015

Additional notes:

1. University of North Carolina System data includes University of North Carolina-Chapel Hill, University of North Carolina-Charlotte, and University of North Carolina-Greensboro
2. University of Wisconsin System data includes University of Wisconsin-Madison and University of Wisconsin-Milwaukee



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## Conclusion

- ❑ OISI is committed to continue supporting U. T. System's successful commercialization enterprise
- ❑ Delivering initiatives that have been requested by and add value to U. T. System institutions, such as patent nationalization, mentor network, and U. T. Horizon Fund investment
- ❑ Creating sustainable value through a service-oriented and team-based culture with the central goal of providing impactful, differentiated, and cost-effective expertise to the System, its institutions, and the broader stakeholder community



3. **U. T. System: Report on creative industry partnerships**

REPORT

Ms. Julie Goonewardene, Associate Vice Chancellor for Innovation and Strategic Investment and Managing Director of the U. T. Horizon Fund, will introduce Dr. Ferran Prat, Vice President for Strategic Industry Ventures, U. T. M. D. Anderson Cancer Center. Dr. Prat will report on creative industry partnerships. A PowerPoint presentation is set forth on the following pages.

# Report on Creative Industry Partnerships

Ferran Prat, Ph.D., J.D.

Vice President for Strategic Industry Ventures, U. T. M. D. Anderson Cancer Center

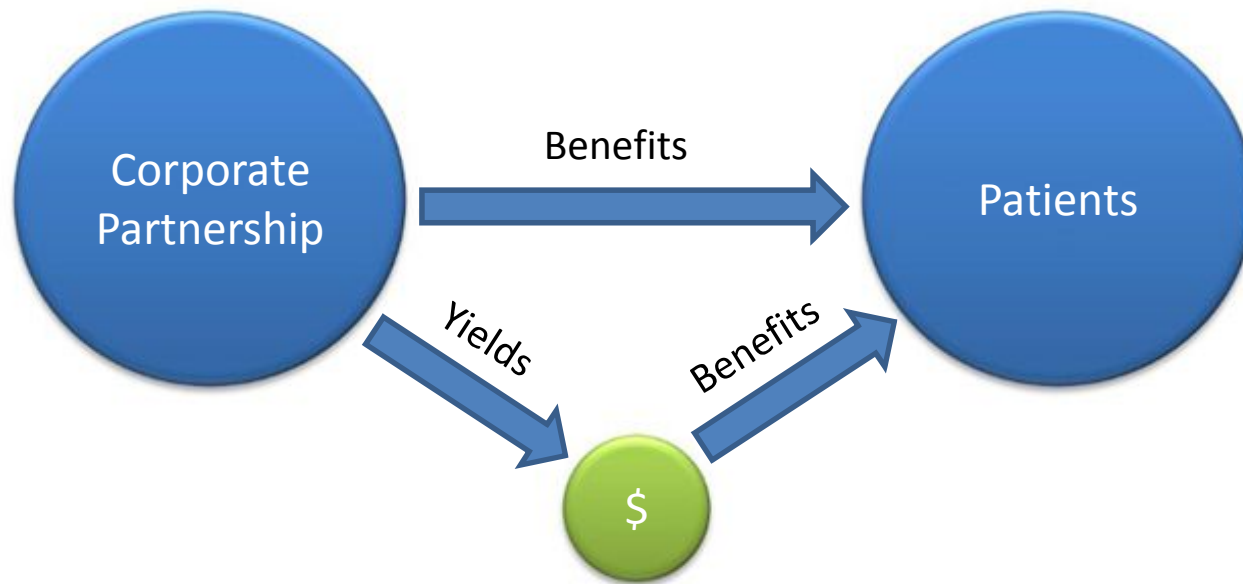
U. T. System Board of Regents' Meeting  
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## Why we do what we do:

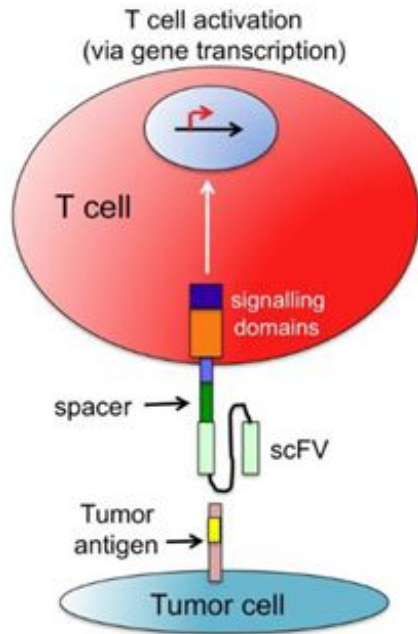


# We have done well, but two transactions stand out





# The Technology: “Sleeping Beauty”



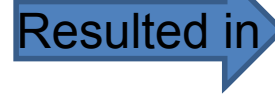
- A Chimeric Antigen Receptor (CAR) T-cell is a modified T-cell genetically engineered to target tumors by binding to their antigens
- CAR T-cells have shown spectacular results in certain leukemias that were lethal until now
- “Sleeping Beauty” is a methodology to perform the genetic modification in a simple and inexpensive fashion
- It was invented at University of Minnesota, but Dr. Laurence Cooper, at M. D. Anderson, foresaw its potential applicability to cancer



## Right time, right place

2014: an “up” year in biotech  
CAR T-cell technology was red hot  
The power of M. D. Anderson  
Dr. Cooper’s charisma and intellect  
+ Strategic approach to partnering

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### 2 Options

1. Intrexon / Ziopharm
2. Syndicate of Blue-chip Venture Capital

**Substantial interest in the community**



## Two radically different options

### Intrexon / Ziopharm

- Assignment of intellectual property estate
- \$100 million in Intrexon+Ziopharm stock (50:50)
- \$45-60 million in research funding over 3 years

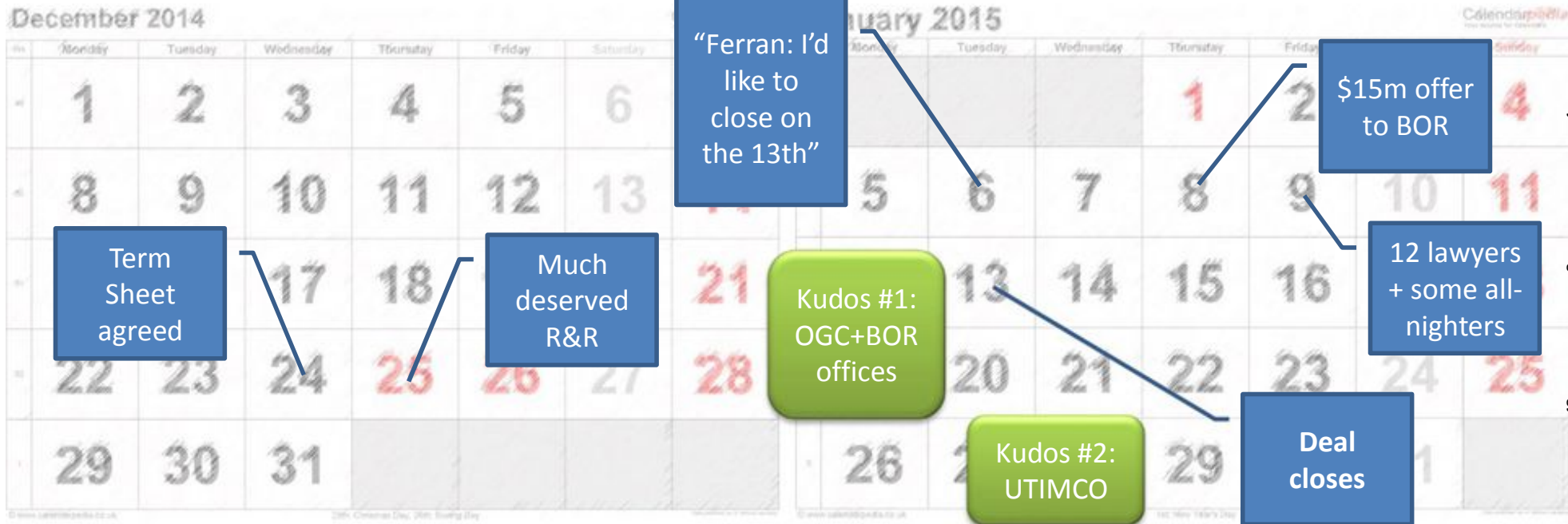


### Syndicate of Venture Capitalists

- Fully diluted pre-money of \$50 million (earned-out), all in common stock
- \$50 million in Series A financing, for a post-money of \$100 million
- \$10 million in licensing fees (\$2 million upfront)



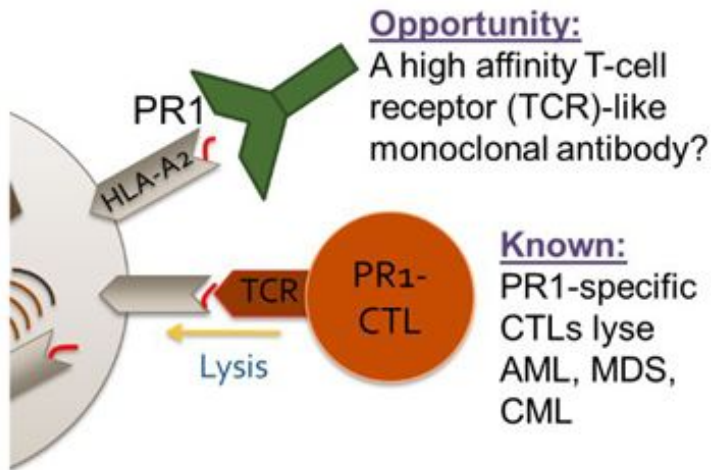
# A last minute twist



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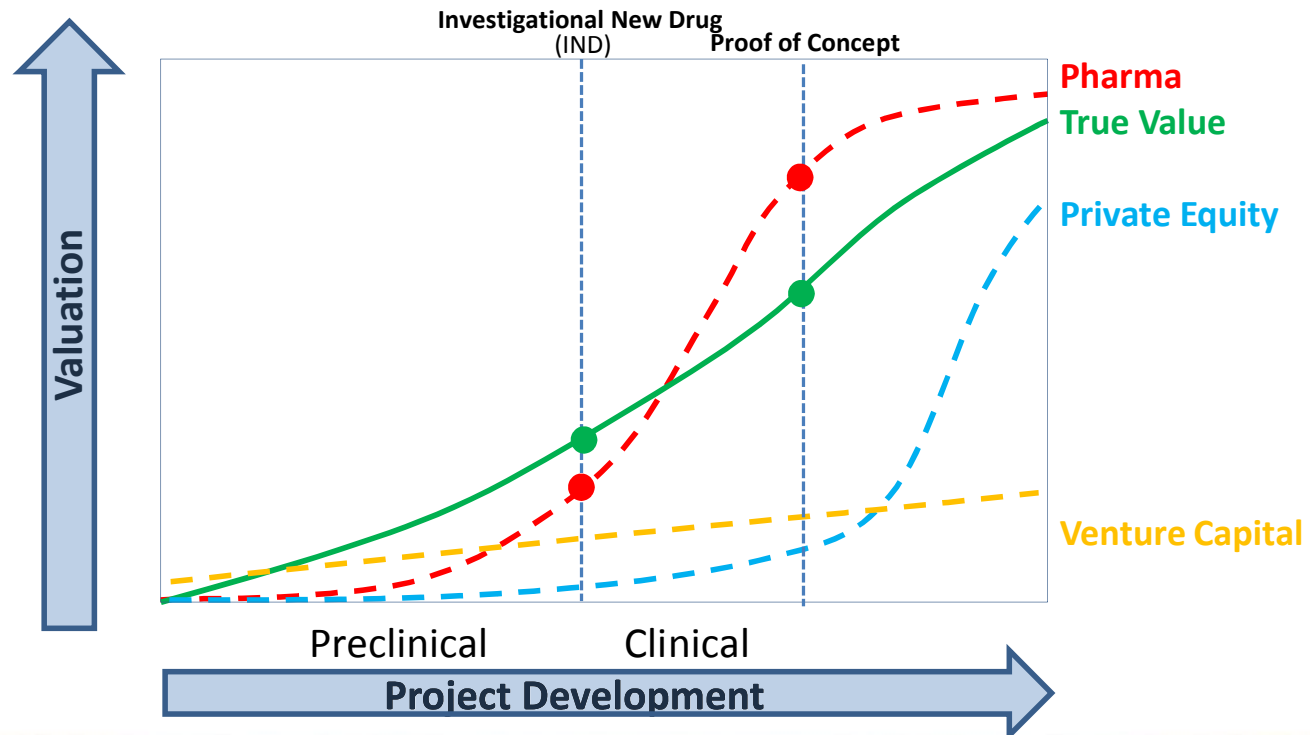
# The Technology: 8F4



- The body naturally generates T-cells against proteins in tumors through molecules in their surface called T-cell Receptors (TCR)
- 8F4 is an antibody discovered by Dr. Jeff Molldrem, and co-developed by Dr. Molldrem and ORBIT which mimics a TCR and showed remarkable activity in Acute Myeloid Leukemia models
- In Q1'05, 8F4 was still in late pre-clinical stage, ready to enter manufacturing



# Pharma is the natural partner at late pre-clinical stage



# We conducted a systematic, exhaustive partnering effort



## ...alas, academic institutions have struggled to receive Fair Market Value from Pharma

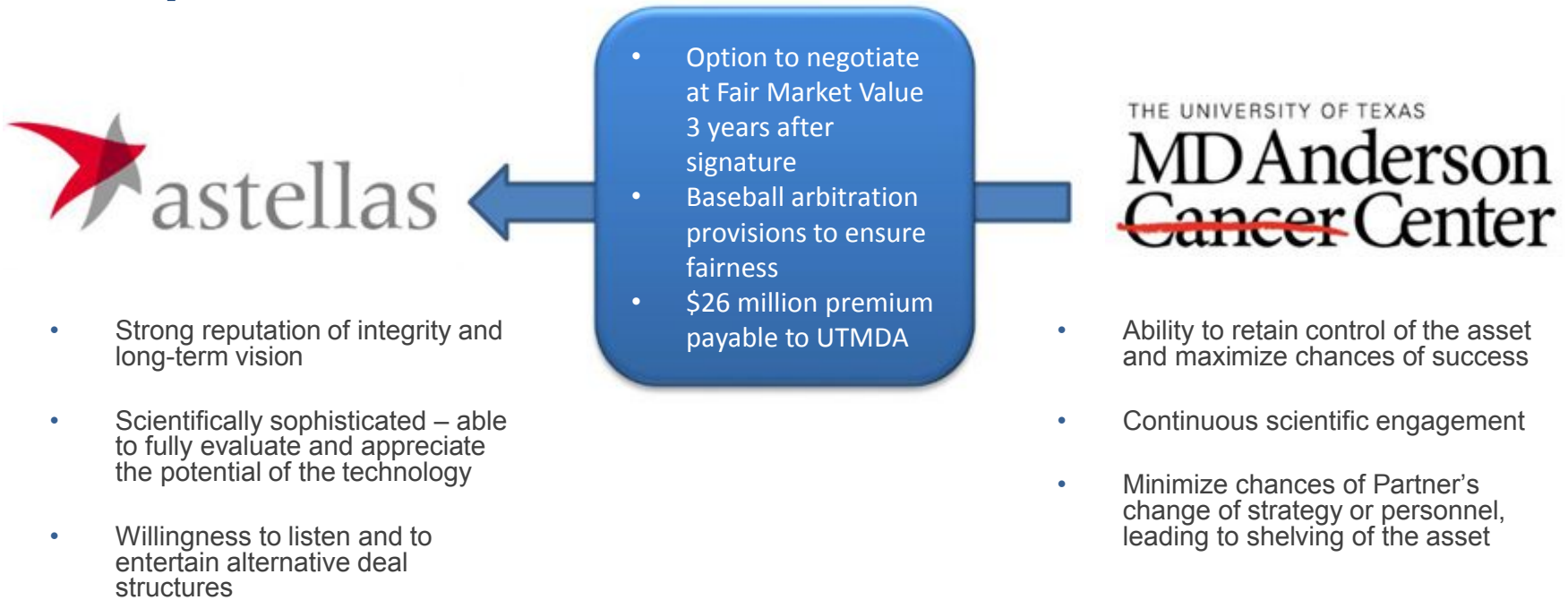


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# An innovative structure that resulted in a fair deal for both parties



## Lessons learned

- Think big
- We must compare ourselves to the best – not just to our peers
- Tailor the deal to the maturity and attractiveness of the asset
- Cultivate personal relationships – it’s all about the people
- U. T. System policy, programs, and culture maximize value for “big deals”

