

# PANEL: EXPECTATIONS OF ACADEMIC-INDUSTRY COLLABORATIONS

Robert Baughman, Ph.D.  
Executive Vice President  
Technology Development & Innovation Center

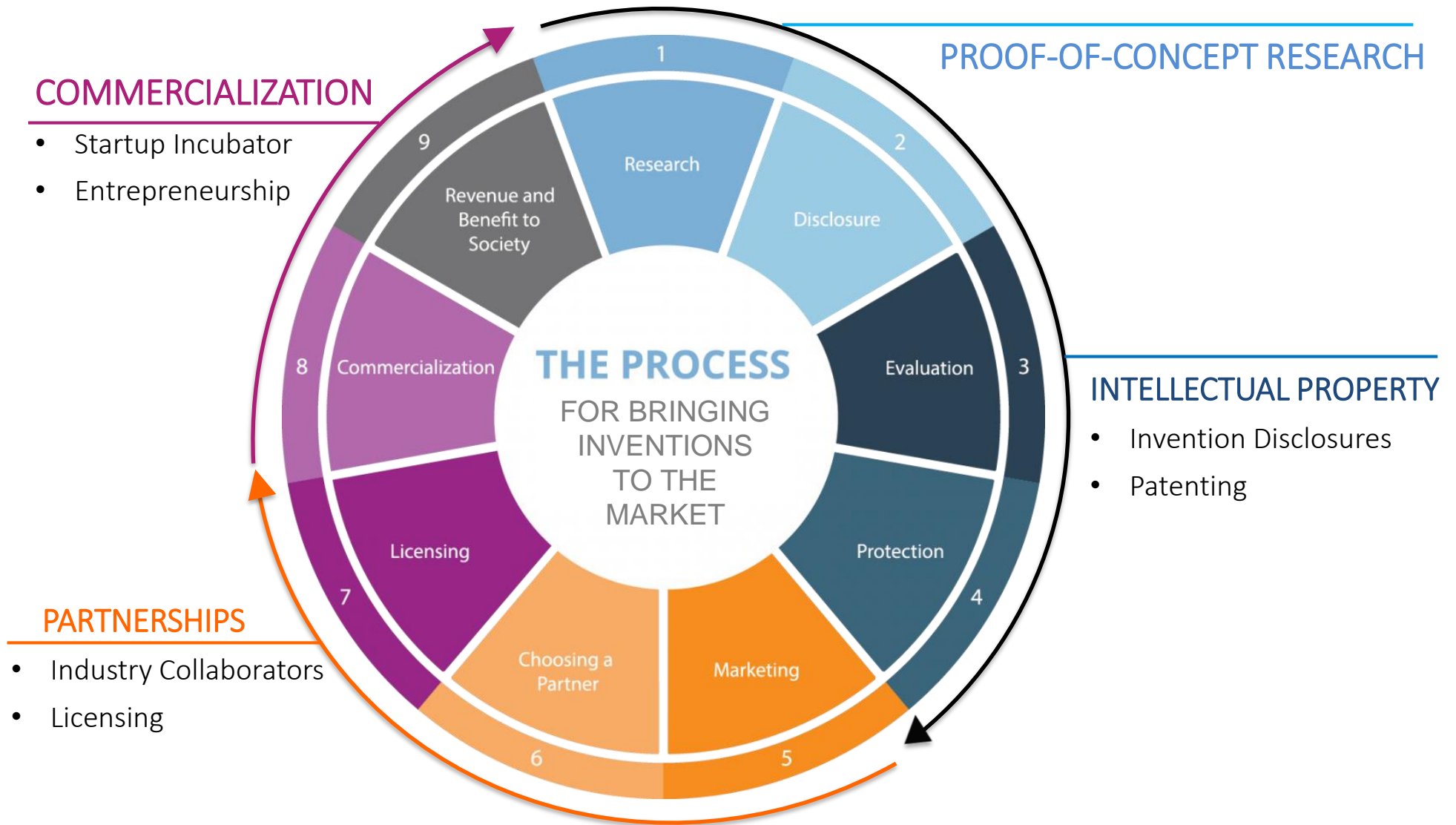
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3<sup>rd</sup> Regional WIPO Presidents' Summit  
13 November 2018



OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY GRADUATE UNIVERSITY  
沖縄科学技術大学院大学

# TECHNOLOGY TRANSFER PROCESS





# ACADEMIC-INDUSTRY COLLABORATION



## PARTNERSHIPS

Industry collaborators,  
sponsors, licensees,  
investors



## TIMELINE OF ACADEMIC-INDUSTRY COLLABORATIONS

### United States: ~100 years of history

- 1910's The Research Corporation founded by UC Berkeley professor to patent and license university-derived inventions
- 1925 University of Wisconsin establishes the first university technology transfer office
- 1930's MIT-Standard Oil Company collaborate to develop oil refinery technologies (personnel exchange of faculty/students to industry)
- 1940's University of California System puts in place policies requiring disclosure of inventions and establishes mechanisms for licensing to companies
- 1951 Stanford Industrial Park created to provide link between Stanford University and industry partners and link to jobs for university graduates
- 1980 *Bayh-Dole Act* allows universities to patent and license publicly funded inventions
- 2010 200+ Technology Transfer Offices established in universities



## COMPANIES INCREASINGLY TURN TO UNIVERSITIES FOR EARLY-STAGE RESEARCH

- Siemens + Berkeley, MIT, GA Tech, DTU, Tsinghua, others
- Rolls-Royce + Oxford
- GlaxoSmithKline + UNC Chapel Hill
- Google + UCL, Oxford, Cambridge, MIT, others
- Facebook + 30 universities
- Amazon + Max Planck Society
- Uber + Carnegie Mellon
- Many Others





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## Top 50 corporate institutions by number of academic collaborations

Corporate institutions ranked by the number of bilateral partnerships they engaged in with academic institutions to co-author papers published in the Nature Index between 2012 and 2016.

Rank	Corporation	Country/Region	# bilateral collaborations 2012–2016
1	BGI	China	642
2	Amgen Inc.	United States of America (USA)	513
3	GlaxoSmithKline plc. (GSK)	United Kingdom (UK)	494
4	Leidos Holdings, Inc.	United States of America (USA)	486
5	F. Hoffmann-La Roche AG	Switzerland	467
6	Illumina, Inc.	United States of America (USA)	412
7	Novartis International AG	Switzerland	399
8	Eureka Scientific, Inc.	United States of America (USA)	381
8	IBM Corporation	United States of America (USA)	381
9	Merck & Co., Inc.	United States of America (USA)	356
9	Pfizer Inc.	United States of America (USA)	356
10	Génomex Québec	Canada	354





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### Top 50 academic institutions by number of corporate collaborations

Academic institutions ranked by the number of bilateral partnerships they engaged in with corporate institutions to co-author papers published in the Nature Index between 2012 and 2016.

Rank	Institution	Country/Region	# bilateral collaborations 2012–2016
1	<a href="#">Harvard University</a>	United States of America (USA)	669
2	<a href="#">Stanford University</a>	United States of America (USA)	463
3	<a href="#">Massachusetts Institute of Technology (MIT)</a>	United States of America (USA)	427
4	<a href="#">University of Oxford</a>	United Kingdom (UK)	394
5	<a href="#">University of Cambridge</a>	United Kingdom (UK)	347
6	<a href="#">Johns Hopkins University (JHU)</a>	United States of America (USA)	341
7	<a href="#">University of Michigan (U-M)</a>	United States of America (USA)	326
8	<a href="#">University of California Los Angeles (UCLA)</a>	United States of America (USA)	322
9	<a href="#">Columbia University in the City of New York (CU)</a>	United States of America (USA)	308
10	<a href="#">Cornell University</a>	United States of America (USA)	300



# ACADEMIC-INDUSTRY COLLABORATION

## PARTNERING MEETS A VARIETY OF NEEDS



**Recruit Students and Researchers**



**Access to Research and Facilities**



**Launch or Work with Startups**



**License Technologies**



**Establish R&D Center**



**Train Workforce**

**University:**

Link students to jobs after graduation

**Industry:**

Gain access to top talent coming from universities

**University:**

Introduce industry to university; earn income to support core facilities

**Industry:**

Gain access to latest technologies and equipment (particularly in new areas)

**University:**

Route for technology transfer; socio-economic impact in region

**Industry:**

Gain access to latest technologies and potential acquisitions

**University:**

Route for technology transfer

**Industry:**

Gain access to latest technologies

**University:**

Link students to jobs after graduation; training opportunity for students

**Industry:**

Gain access to top talent in core research areas; training opportunity for staff

**University:**

Introduce industry to university; earn income for teaching

**Industry:**

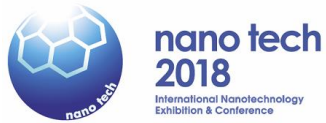
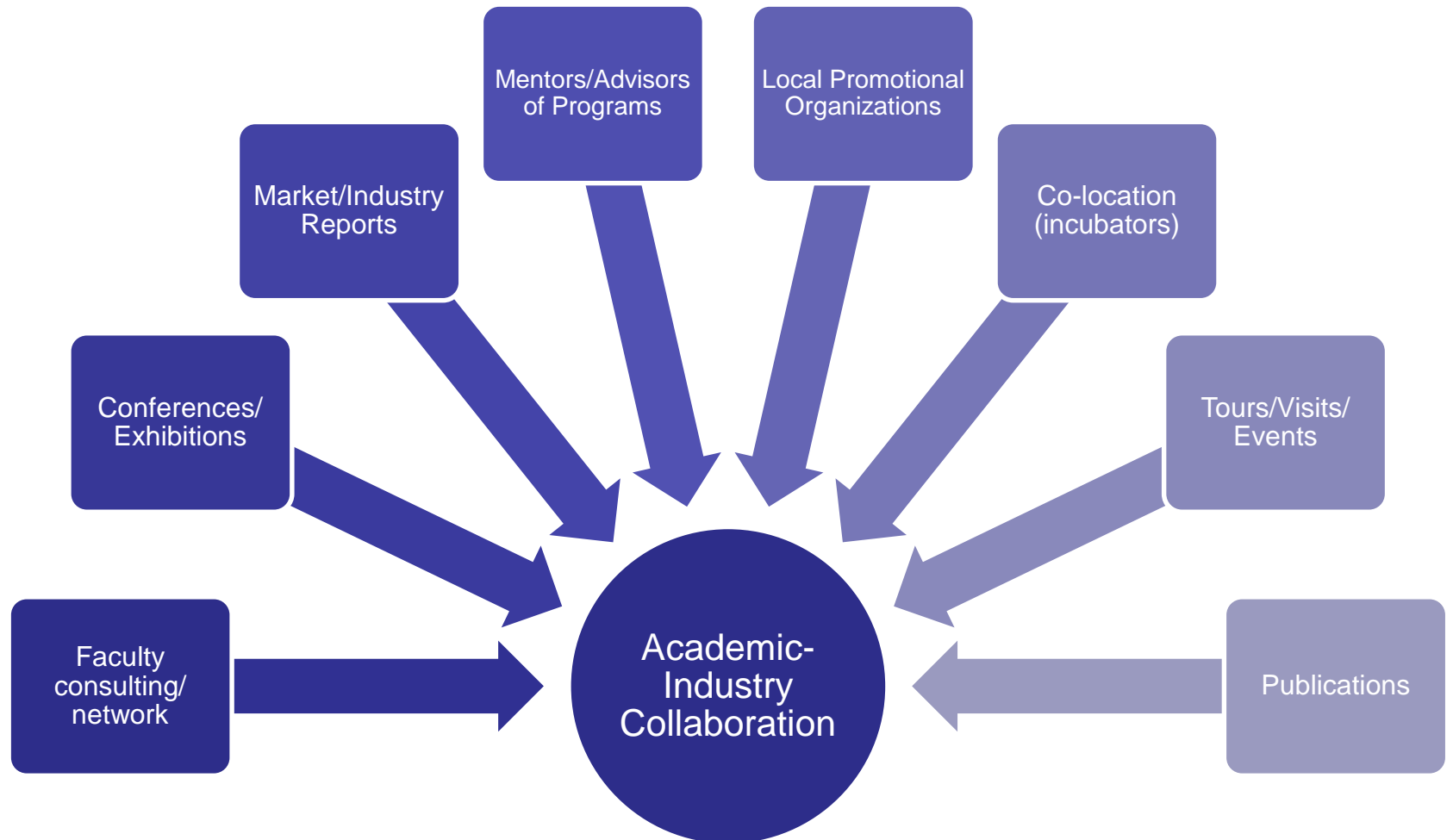
Train staff in the latest technologies and techniques





# ACADEMIC-INDUSTRY COLLABORATION

## SOURCES OF INDUSTRY PARTNERS





# ACADEMIC-INDUSTRY COLLABORATION

## UNIVERSITY INCUBATORS: CO-LOCATION MODEL



IMPERIAL COLLEGE LONDON I-Hub



IST AUSTRIA Cube



UNIVERSITY OF TORONTO

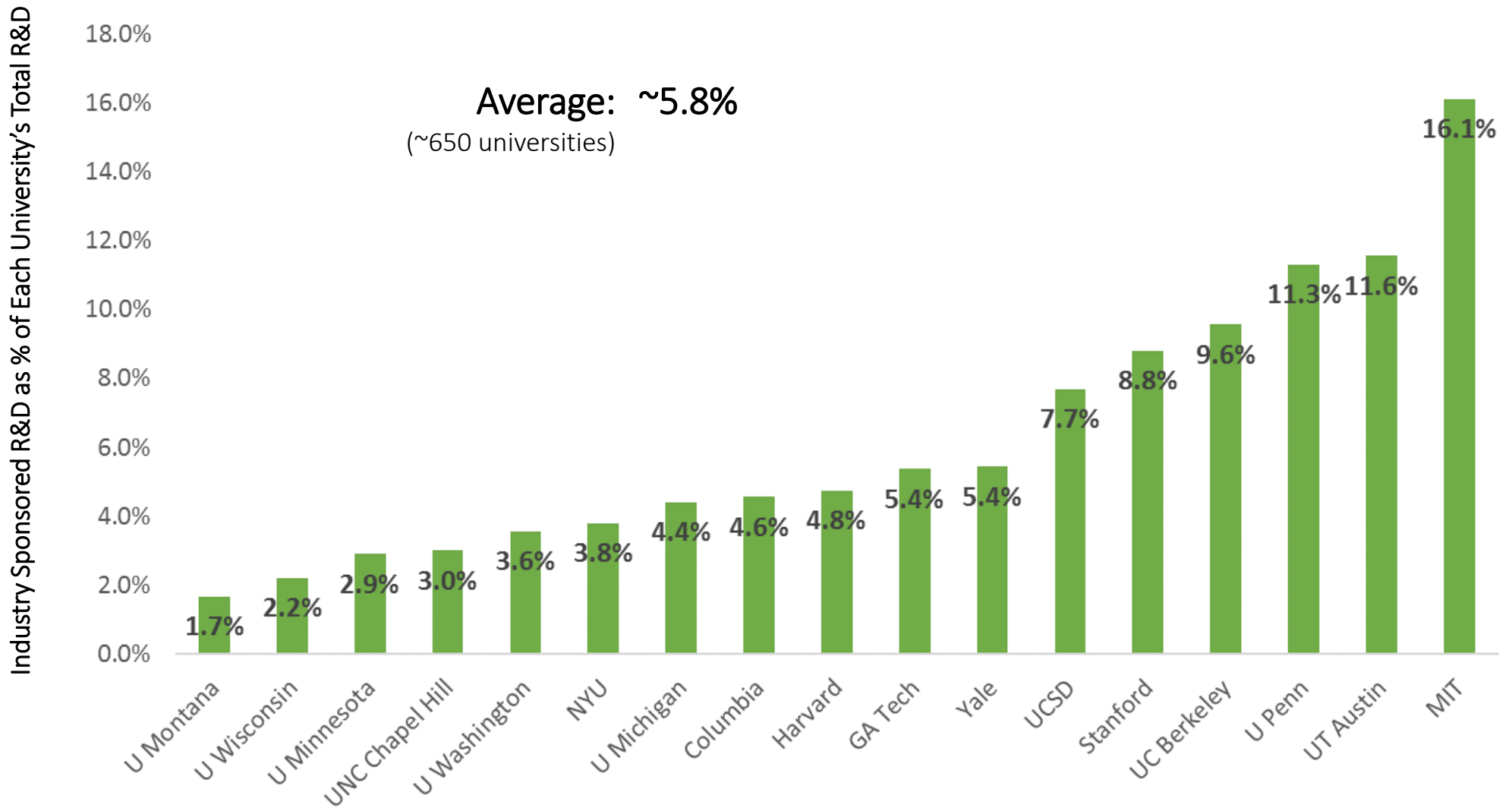


NAGOYA UNIVERSITY



# ACADEMIC-INDUSTRY COLLABORATION

## Industry-Sponsored R&D at U.S. Educational Institutions (2015)



SOURCE: National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey, FY 2015.