

# Government-University-Industry Partnerships: Global Innovation

C. D. Mote, Jr.

Regents Professor and past President, University of Maryland

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# Partnerships for Global Innovation

- Key Words
  - Partnerships
  - Global
  - Innovation
- Today let's look at:
  - Partnerships
  - National → Global
  - Innovation → Global Innovation



## UM National Partnerships:

- NOAA
- NIST
- DHS
- NSA
- FDA
- NIH
- NASA
- SI
- LOC
- DOE
- DOD
- DOJ
- NCI
- NARA
- USDA
- NSF



Berkeley and Reed



Stanford and Berkeley



**Microsoft®**

Washington State and Harvard



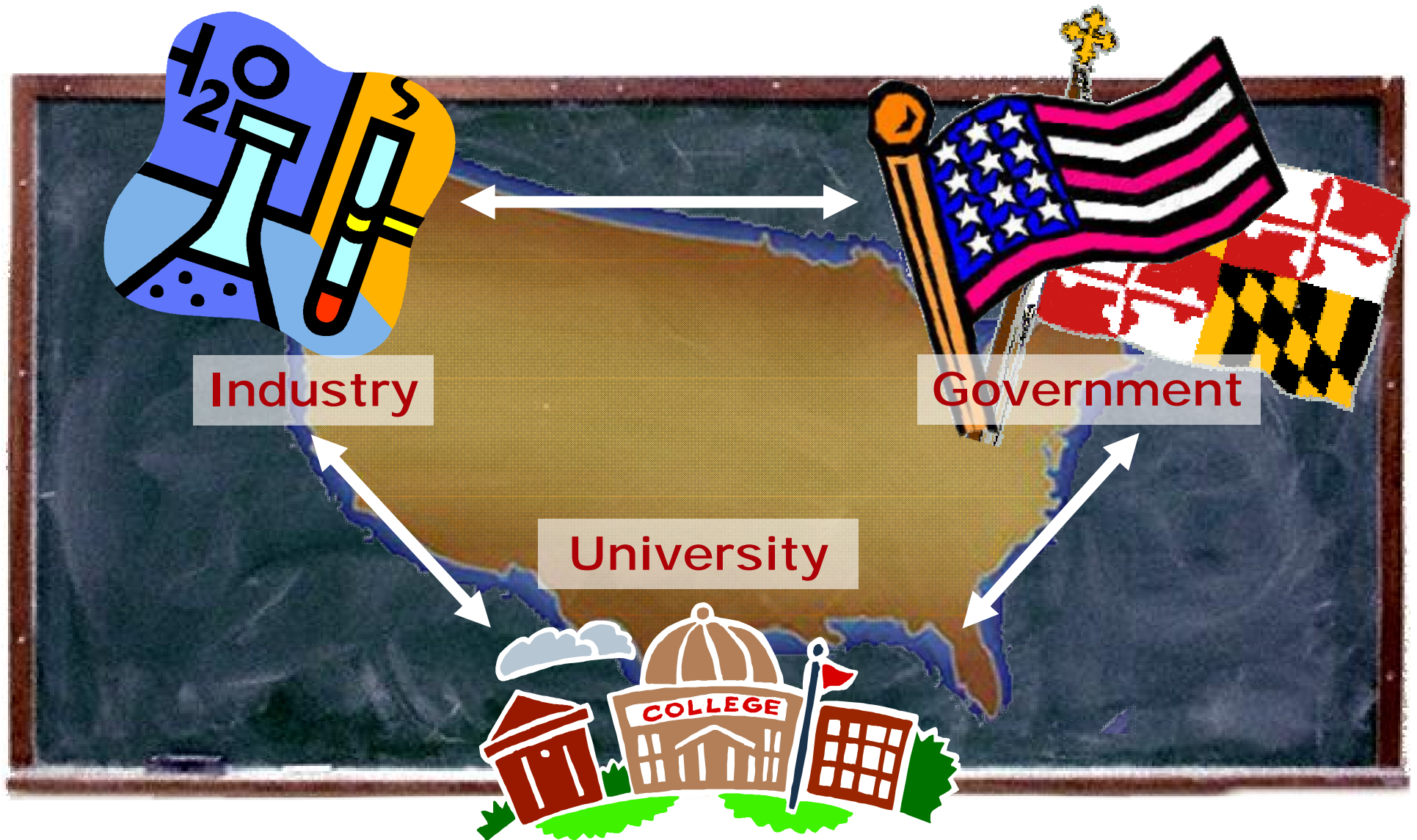
Texas



Maryland, Michigan and Stanford



# 1945 - 1990 : national innovation platform



## Between 1990 and 2000

### What's new?

- Transition from national innovation platform to a global innovation platform
- Cold War national paradigm: ***“isolation and control” of information for innovation control*** ended because information could not be controlled.
- 21<sup>st</sup> Century global paradigm: ***“partnerships and engagement” for information creation & accelerating innovation***
- Sports analogy: switched from playing defense to offense

# Global: talent, employment, markets, manufacturing, research and investment

- Expanding globalization
- Shortening product-life cycles
- Accelerating change
- No national industry (essentially)
- Growing consumer markets
- High demand for “front edge” skills/capabilities



# Global G-U-I Partnership Opportunities



Governments: National, state, regional, city



Industries: Multinational, national, local



Universities: Consortiums, campus, colleges,  
departments, faculty, students



2000 – today : global innovation platform



# Innovation's the answer. What's the question?

- Innovation has become the answer to just about every “**How will we . . . ?**” question

# Innovation and Talent - the coins of the realm!

***“the worldwide competition of overall national strength is actually a competition for talents, especially for innovative talents.”***

***-Pres. Hu Jintao,***

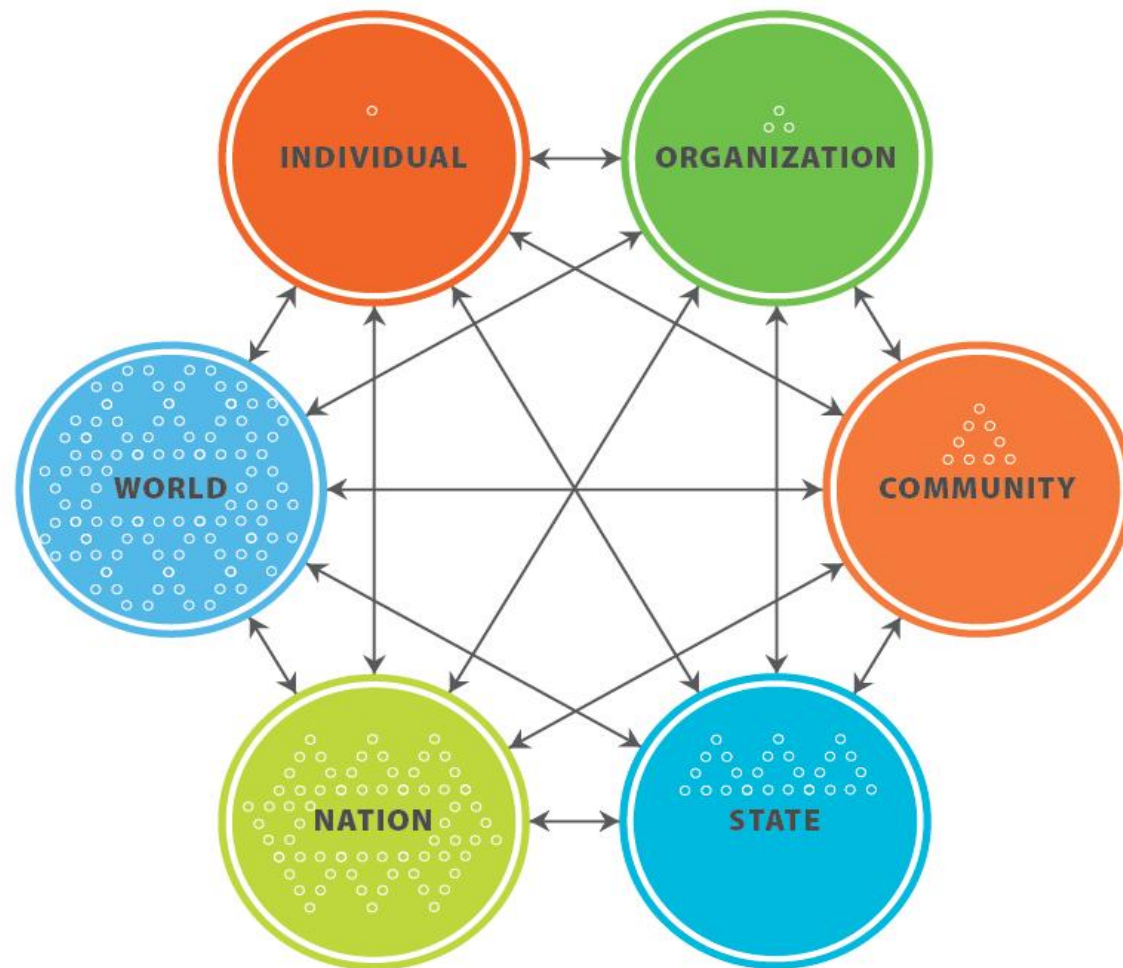
October 2007 address to 17<sup>th</sup> CPC  
National Congress



# INNOVATION at all Scales

- Scales innovative cultures
  - Organizations/Individuals: *Bottom Up*, private sector (mainly)
  - National: *Top Down*, government (mainly)
  - Regional/community: hybrid
  - States: hybrid
  - World: hybrid
- Global innovation: university-industry-government

# Global Innovation





# Prominent Role for Universities

- About **knowledge, talent, discovery, creation, innovation**
- Act globally - like industry (sometimes)
- Act locally - like governments (sometimes)
- Partnerships & engagement
  - industries, governments, NGOs and universities
  - locally, regionally, nationally and internationally



# University innovation services

- Technology Incubator
- International Incubator
- Bioprocess scale-up facilities
- Consulting for industry supported by government (MIPS)
- Venture Accelerator
- Technology Start-Up Boot Camps
- Angel Investor Networks
- Counseling & venture mentorship (MIT)

# Global Innovation: State, Organization, World - 2009



# Global Innovation: World, Organization, State

## Recruiting Chinese Companies, 2007

Research Park : Attracted Chinese Partners

*Sponsored by MOST*

Beijing

Organized by

Hi-Tech Development Center of China

科技部火炬中心

Shanghai

Organized by

Shanghai Technology Innovation Center

上海市科技创业中心

Guangzhou

Organized by

Guangzhou High & New Technology Incubation Center

广州市高新技术创业服务中心

# Global Innovation: Individual, Organization, World (Sierra Leone)





# Global Innovation: World, Nation, Organization

## DOE Solar Decathlon



## POINTS TO TAKE AWAY:

- The 21<sup>st</sup> century innovation paradigm is based on partnerships and engagement for creating information and accelerating innovation.
  - The former innovation control paradigm based on information control ended because information cannot be controlled.
- Universities are central players in global innovation.
  - Nearly all assets needed are found around them.
- Recruitment of talent to accelerate innovation is the global norm.
  - “Front edge” skills are in great demand and will continue to be so.

## POINTS TO TAKE AWAY:

- The global innovation platform has replaced the national innovation platform.
  - Industry has operated on the global innovation platform for a decade.
  - Universities are moving unevenly, but steadily to the global innovation platform.
  - Government has taken measured, but significant steps toward the global innovation platform.
  - Those not on the global innovation platform will be left behind because that is where the world is going.

# G-U-I Partnerships: Global Innovation









# Global Innovation : Organization, Nation, World (Brazil)



# NASA Deep Impact Mission : July 4, 2005



# INNOVATION

- Innovation is a culture leading to:  
———→ successful implementation
- A culture develops when an institution, an organization or a group shares characteristic  
  
———→ attitudes, values, goals and practices.

# Culture of Innovation: Shared Characteristics

1. Strong leadership committed to implementations
2. Minimal hierarchy in decision making
3. Commitment to implementations
4. Values disparate talents & entrepreneurship
5. Values ideas, the creative and unconventional
6. Moves quickly but adapts readily
7. Willingness to accept failures



# Testing for a Culture of Innovation: Does it have: ?

1. Strong leadership committed to innovation
2. Minimal hierarchy in decision making
3. Commitment to deliverables, implementation
4. Value disparate talents & entrepreneurship
5. Value ideas, the creative and unconventional
6. Move quickly and adapt readily
7. Willingness to accept failures



## EXECUTIVE LEADERSHIP TRAINING AT UNIVERSITY OF MARYLAND

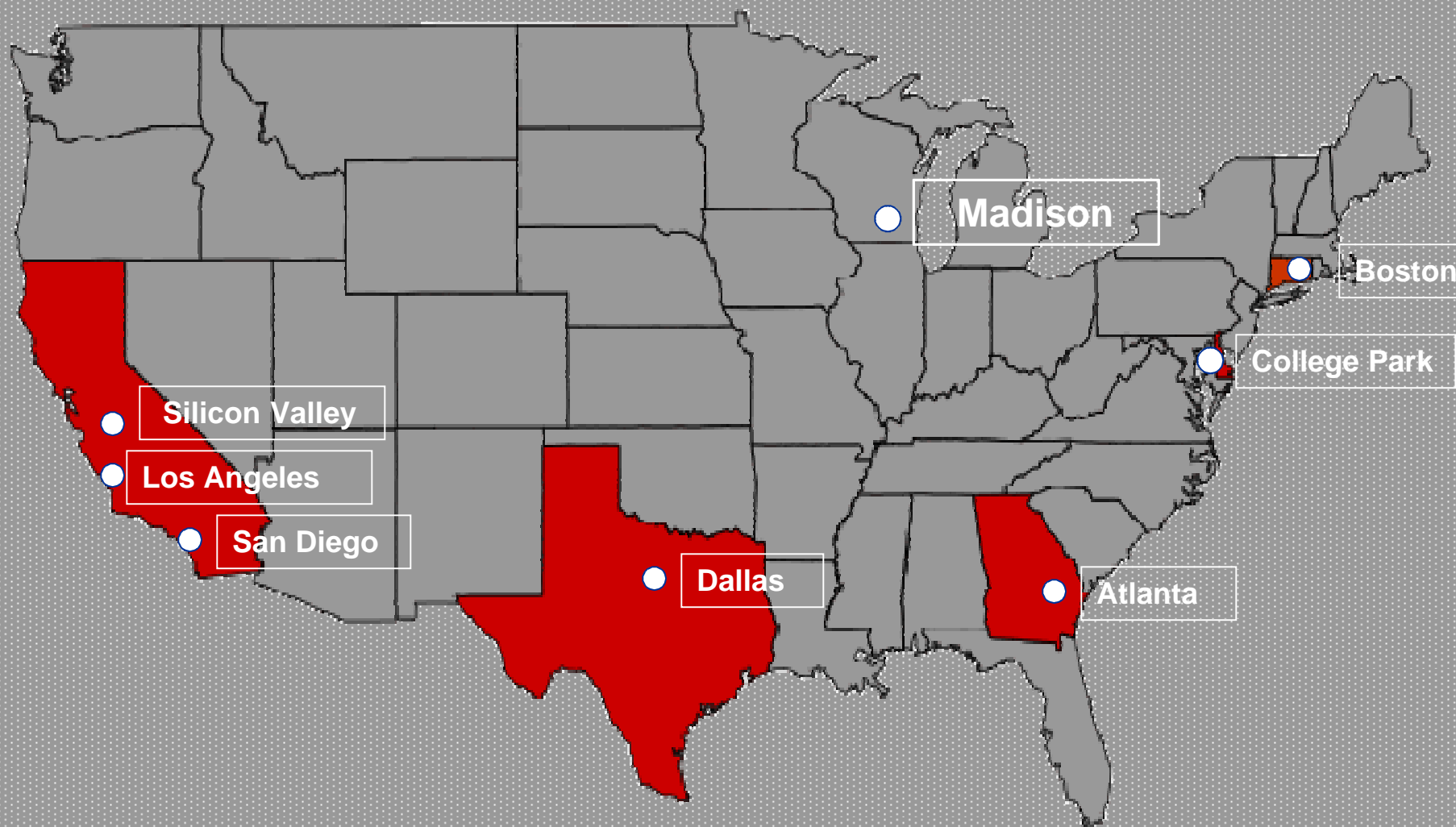


# Global Climate Change and Weather Prediction

- National Oceanic and Atmospheric Administration (NOAA)
- The Pacific Northwest National Lab Joint Global Change Research Institute (UM, DOE)
- Earth System Science Interdisciplinary Center (UM,NASA,NOAA)

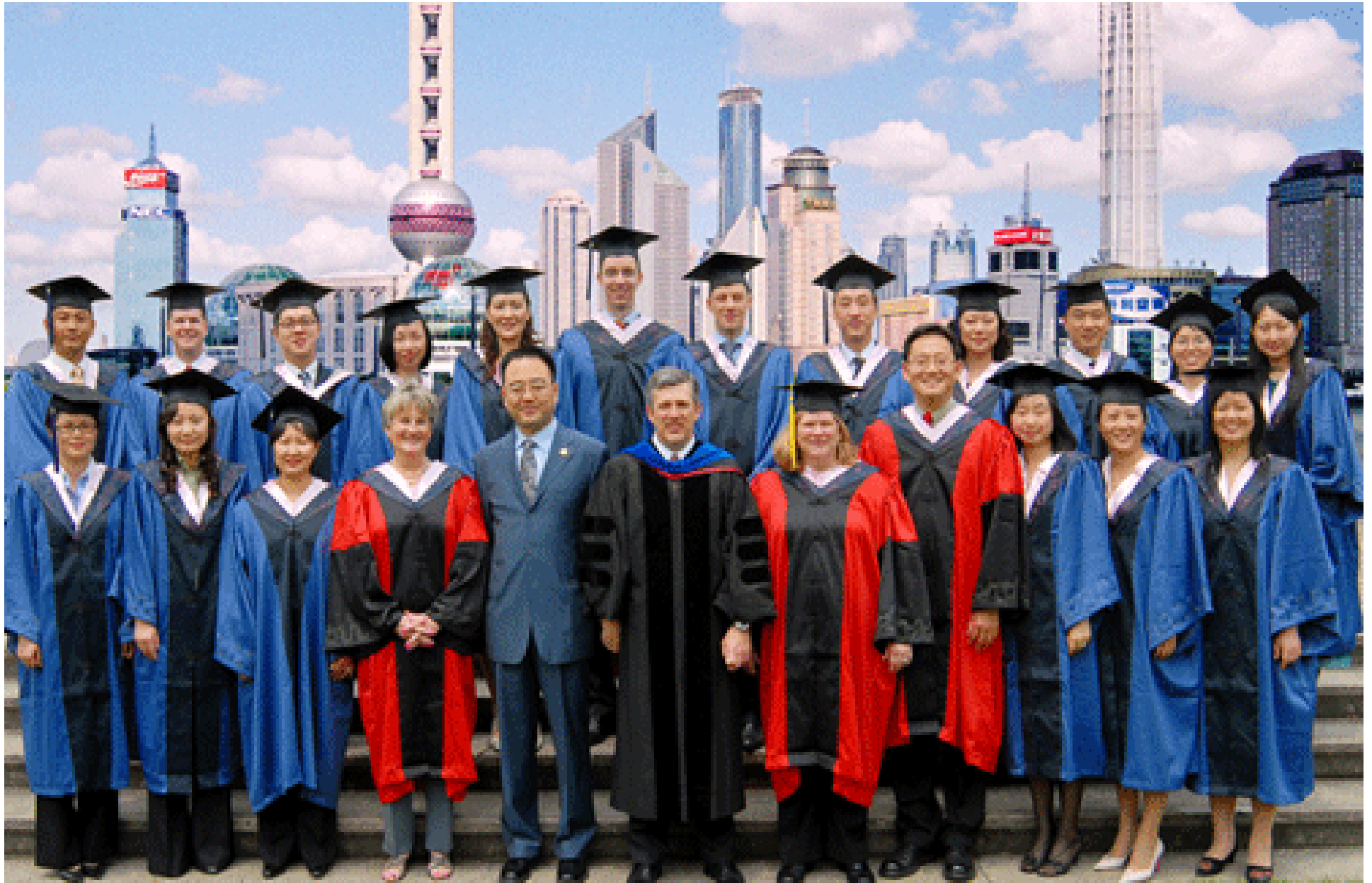


# Industry Gravitates Towards Universities



# Global Innovation: Organization, World

## Executive MBA in China



# Global Innovation: Organization, World

08夺金舍我其谁

ROBERT H. SMITH SCHOOL OF BUSINESS

*Go for the Gold!*

# China Business Plan

2008

# COMPETITION



马里兰大学史密斯商学院 2008 中国商业计划书大赛



# Global Innovation : Organization, State, World

## UM & PRC MOST - China Research Park - 2000



# Global Innovation: World, Nation, Organization

## VP Daniel Scioli, Argentina



UM  **IRIS**



Sudan: Strengthening Governance Structures

# Global Innovation: Organization, Community, World (Burkina Faso)





# Global Innovation: Organization, Community, World (Thailand)



# Points to take away:

- “Partnerships and engagement” to create information and accelerate innovation is the 21<sup>st</sup> century paradigm for innovation.
  - The former “innovation control paradigm” is dead because information cannot be controlled.
- Universities are central, not auxiliary participants in global innovation.
  - Nearly all needed assets are found there.
- Recruitment of talent to accelerate innovation is the norm.
  - “Front edge” skills are in great demand and will continue to be so.
  - Change is accelerating.
- The global innovation platform has replaced the national innovation platform.
- Industry has operated on the global innovation platform for a decade.
- Universities are moving unevenly to the global innovation platform.
- Government has taken measured, but significant steps toward the global innovation platform.





# How do universities drive innovation?

Can do nearly everything !

• education / training / workforce development

• research / discovery / creation / invention / IP

• services: self / community / government / industry

• partnerships / collaborations

• entrepreneurship / enterprise creation

# Where do universities drive innovation?

Span all scales - natural partners in innovation

- individuals
- organizations
- regions / communities
- state
- national
- global

# University Global Innovation

- International incubator
- Institute for Global Chinese Affairs
- Confucius Institute
- Executive Master's degrees
- Foreign government partnerships
- Competitions / challenges
- International agreements

# Universities: Driving Growth Around the World



# Why a Research Park at the UM?

- Space & flexibility
- Proprietary/classified work
- Off-campus work force
- Transformational opportunities
- Non-university interests











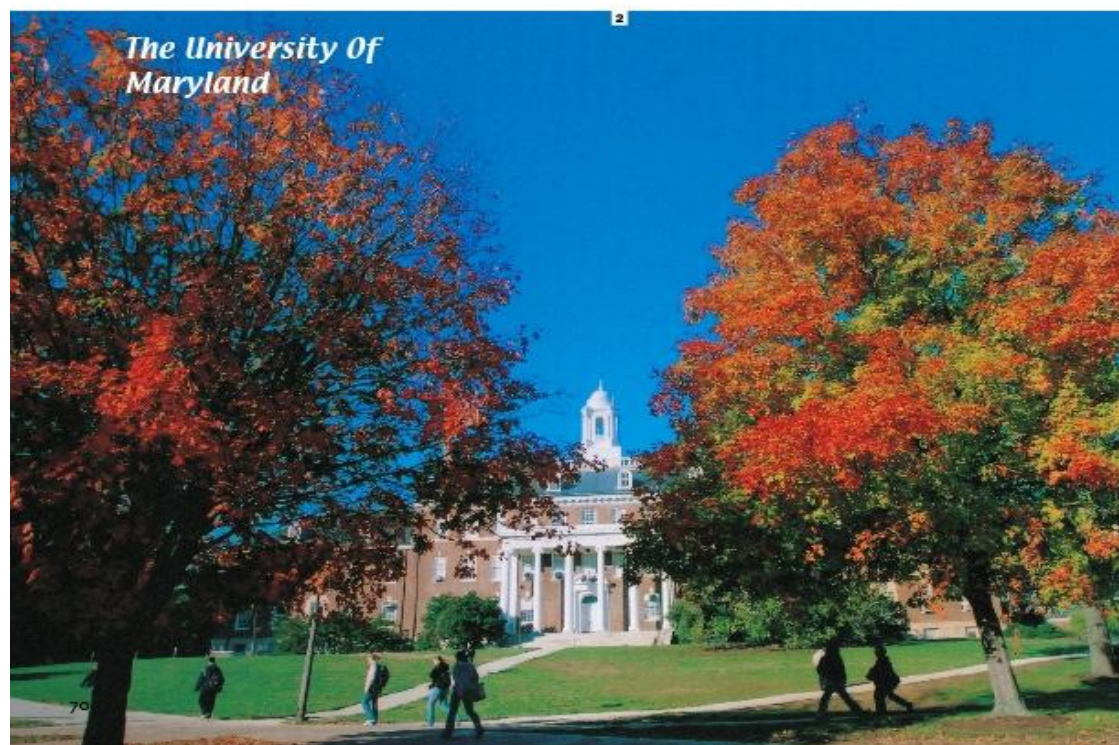
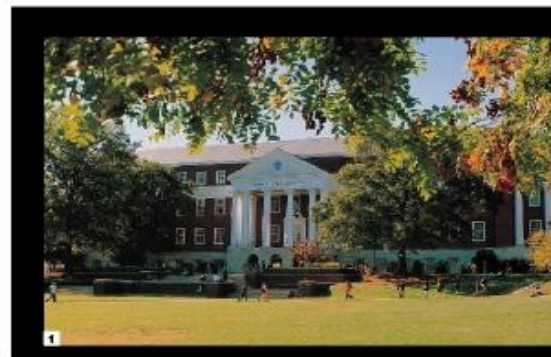
### III. National domain

- Federal laboratories
- Federal research initiatives
- Federal research missions



大学完善的教学设施,热情的教职员工,吸引了世界各地的莘莘学子。就读于马里兰大学,已成为学生的梦想。学校对各个国家和地区的学生是同一个标准,那就是用成绩说话。学校为学生提供24小时服务。各种餐饮一应俱全,有欧式、美式、墨西哥式西餐,有日、韩料理,还有受到欢迎的中餐。商场也设在餐厅内,餐厅门口还可买到学生们自己烹制的饭菜。在校园内,学生们的穿戴也五花八门,一个季节能看到四季不同的打扮。

现在校园有270座建筑,都是红砖、白柱,代表了一个时代的建筑风格。代表性建筑中,一是教堂。在这座教堂每年举行四千多个活动,包括上百个婚礼,还有八万多个教徒在此举行宗教活动;二是克萊瑞斯·史密斯艺术表演中心。心有四个表演大厅,包括交响乐、歌剧、话剧和现代音乐,这里被公认为全美大学





# Summary

## For success in the connected world

- Create a global culture of innovation and entrepreneurship
- Balance partnerships with industry and government with
  - Creation & transmission of knowledge
  - Traditional university values
- Assemble talent to increase productivity and quality
- Universities are central participants
  - Not auxiliary to business and government





## Countries with UM Agreements

# UNIVERSITY OF MARYLAND IN THE WORLD

