

Government-University-Industry Partnerships: Global Innovation

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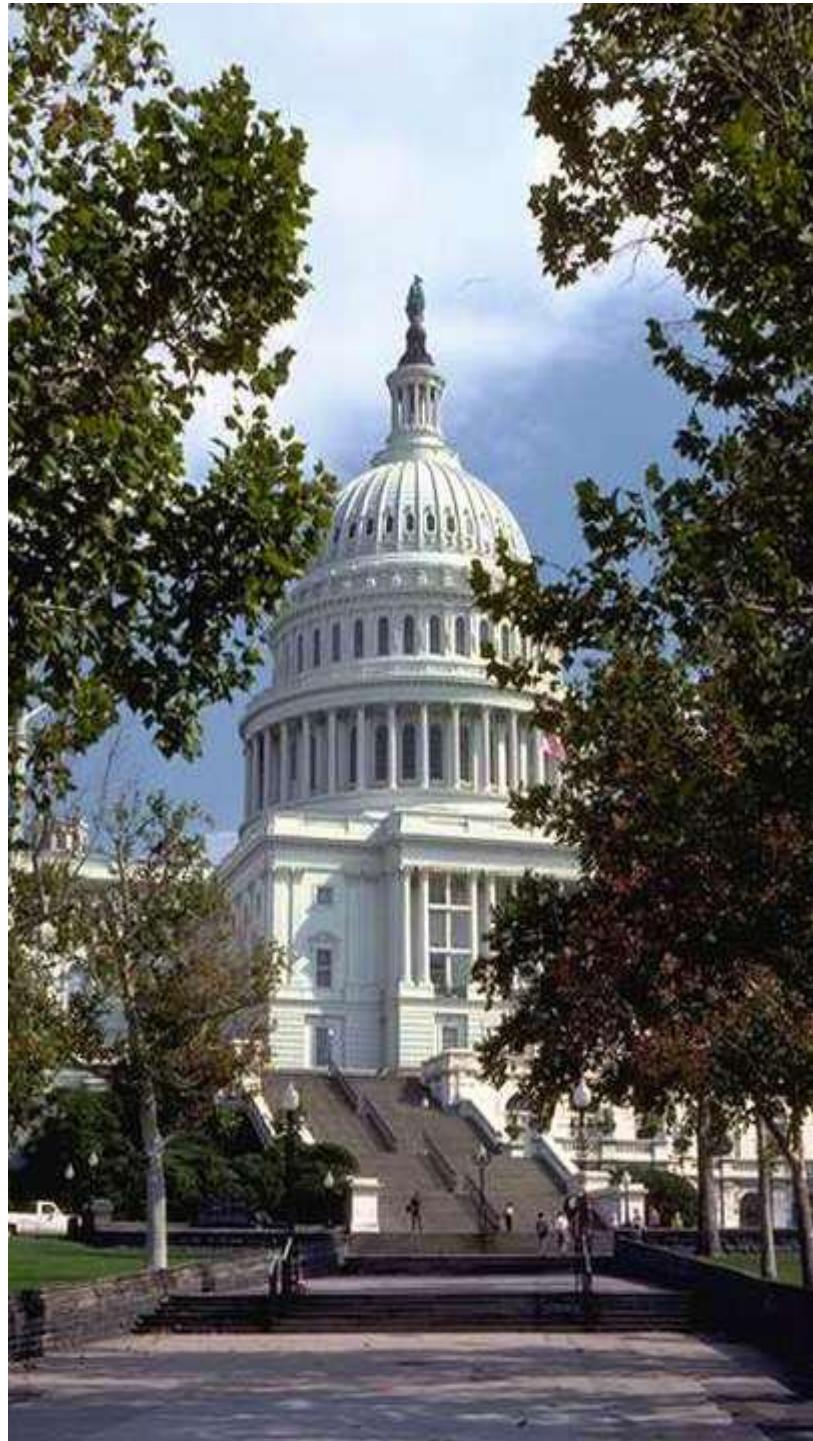
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WISC-NRC Workshop:
Rising Above the Gather Storm:
Development of Regional Innovation Environments

September 22-23, 2011

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

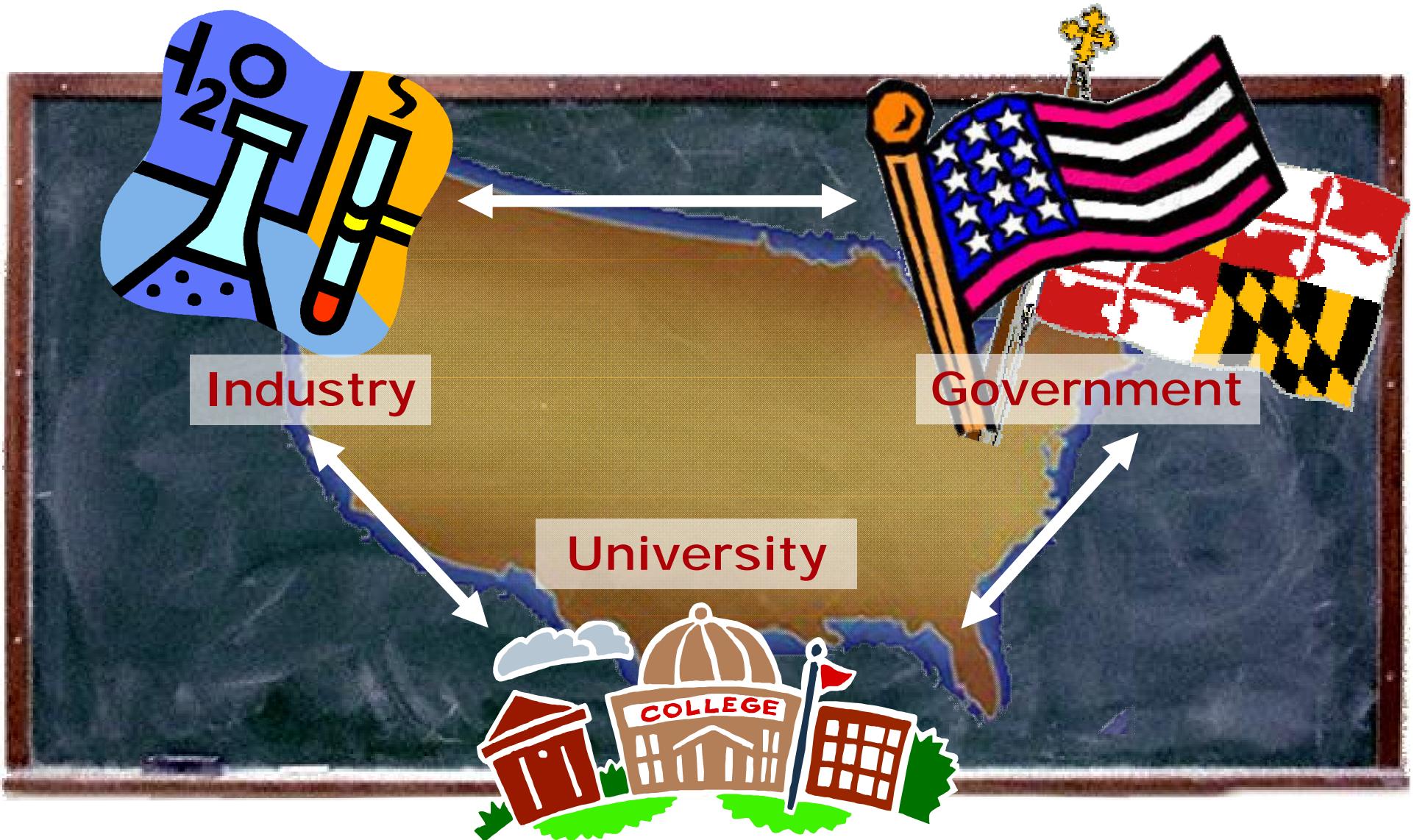


Texas

Google™

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.
- 21st 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

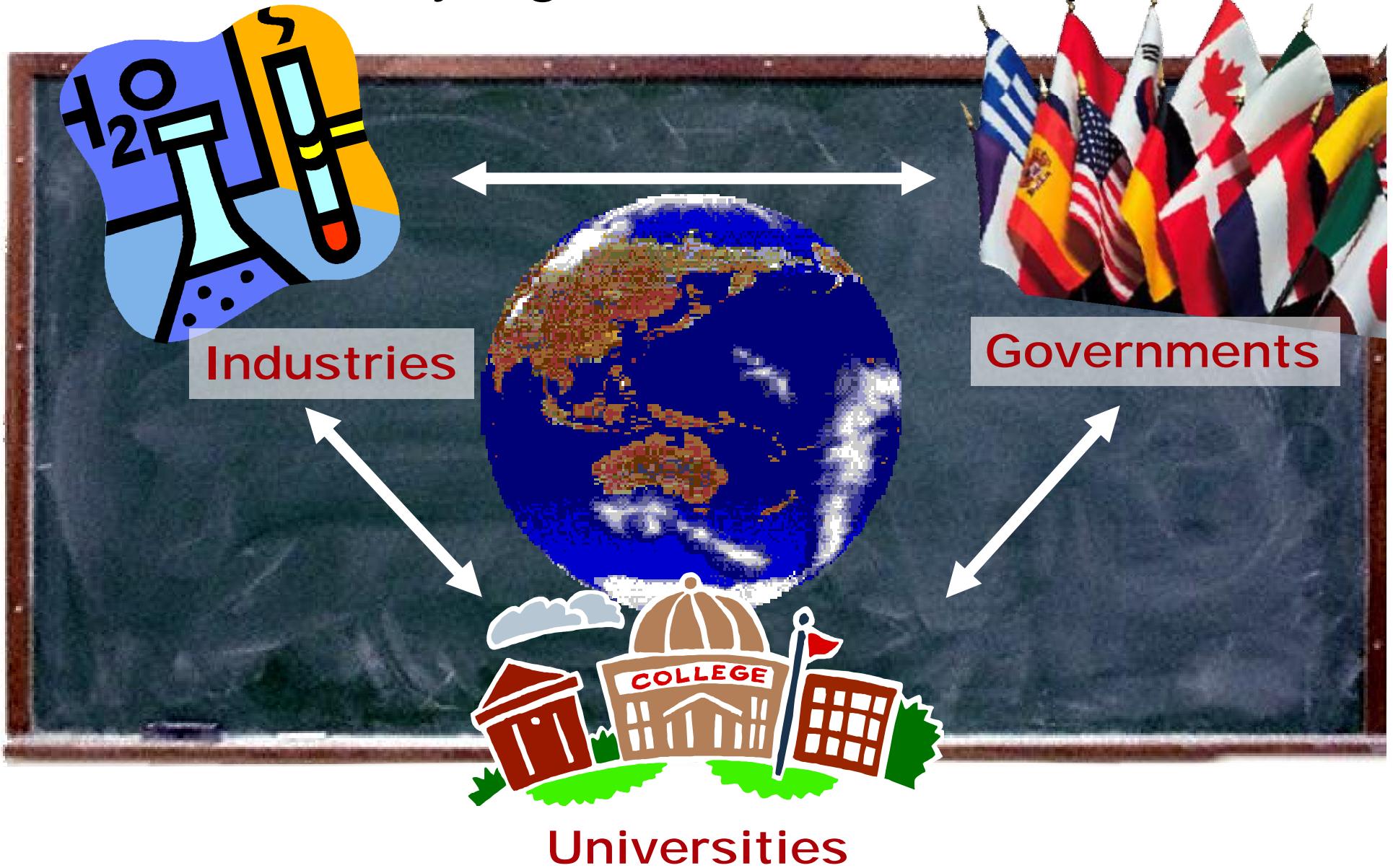


Industries: Multinational, national, local



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,

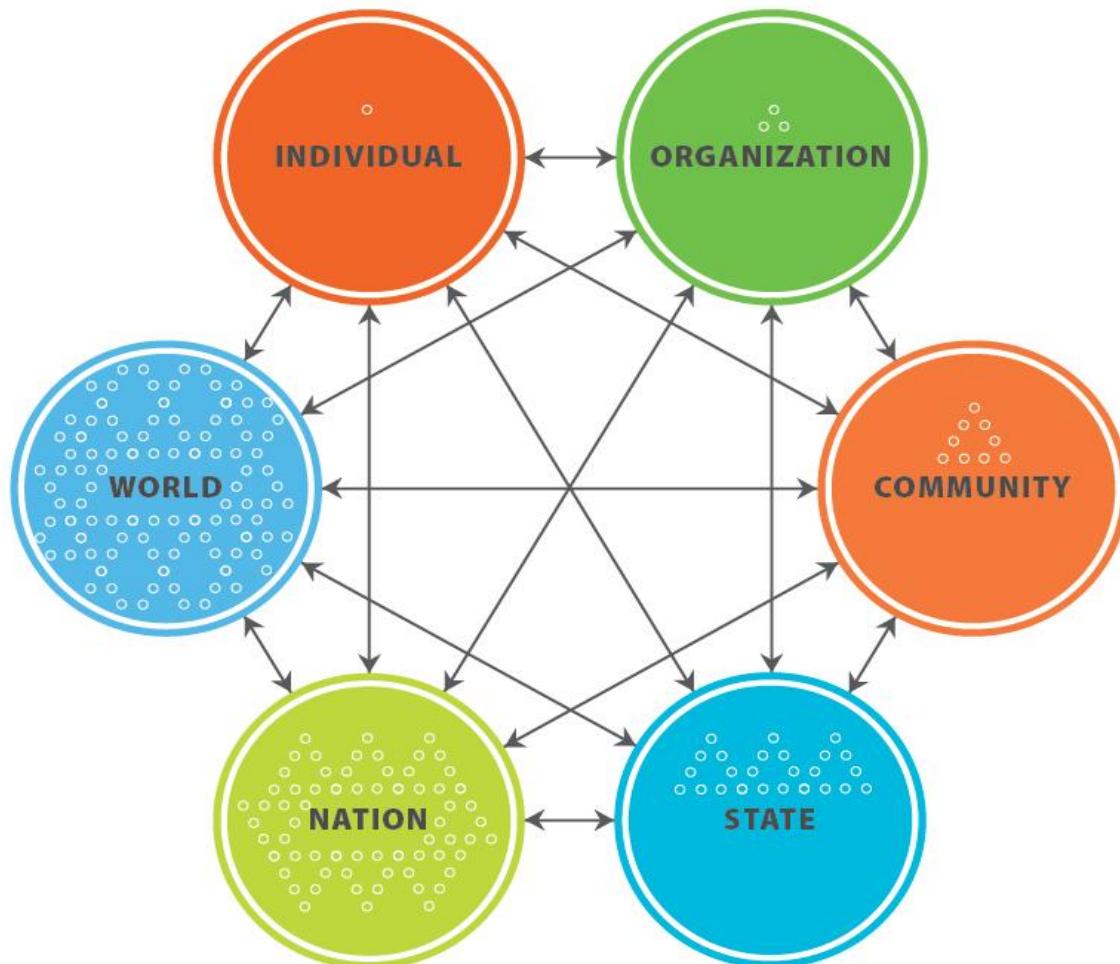
October 2007 address to 17th CPC National Congress



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 21st 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

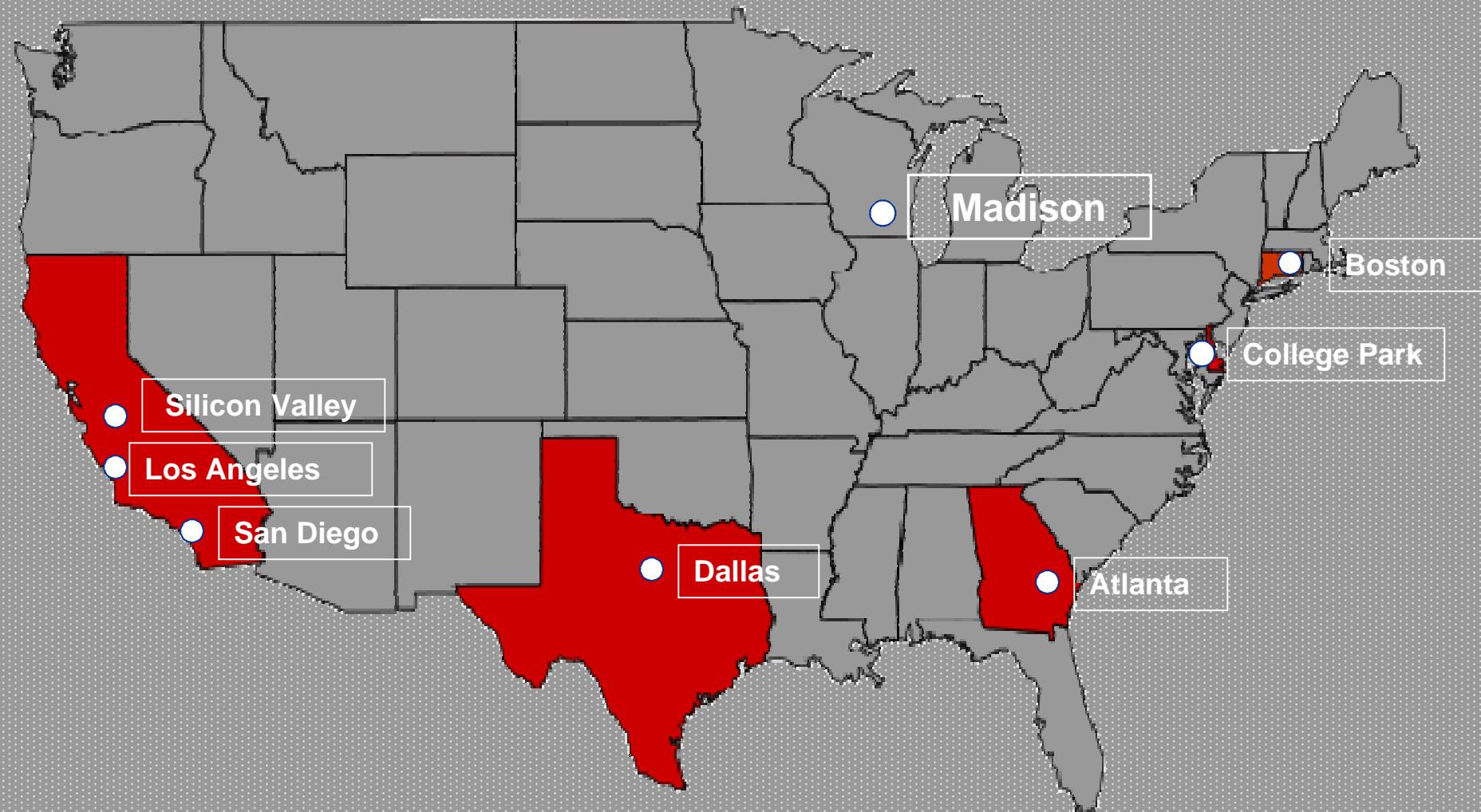


Global Climate Change and Weather Prediction

- 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

ROBERT H. SMITH SCHOOL OF BUSINESS

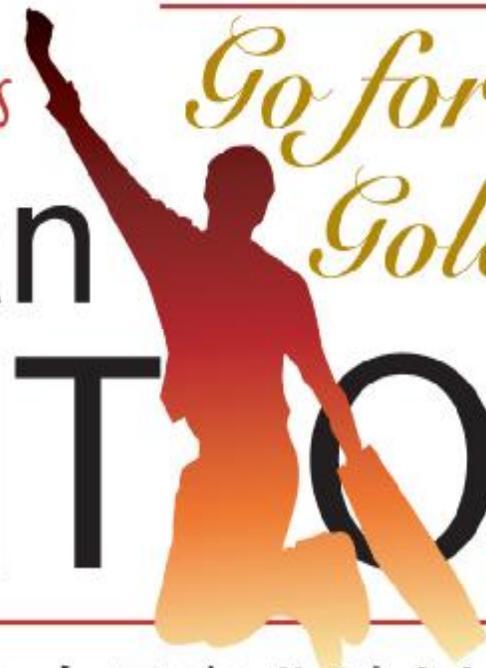
China Business Plan
COMPETITION

2008

马里兰大学史密斯商学院 2008 中国商业计划书大赛

08夺金舍我其谁

*Go for the
Gold!*



Global Innovation : Organization, State, World UM & PRC MOST - China Research Park - 2000



Global Innovation: World, Nation, Organization

VP Daniel Scioli, Argentina





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 21st 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 !

- Ŷ education / training / workforce development
- Ŷ research / discovery / creation / invention / IP
- Ŷ services: self / community / government / industry
- Ŷ partnerships / collaborations
- Ŷ 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





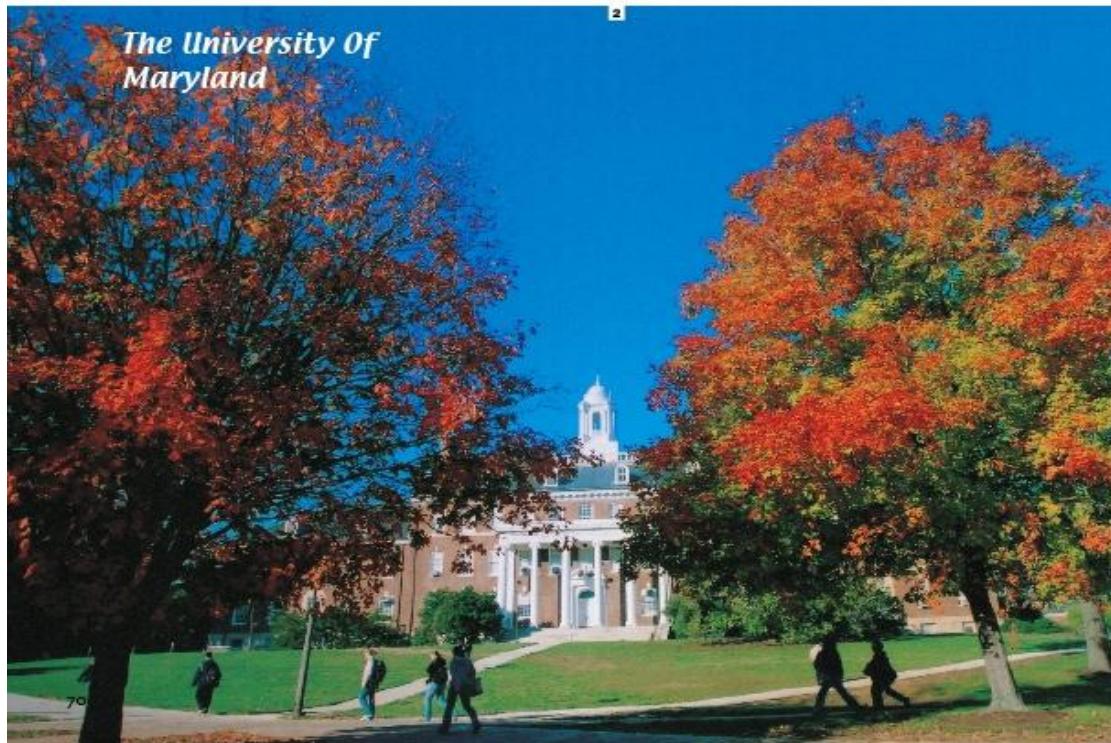


III. National domain

- Federal laboratories
- Federal research initiatives
- Federal research missions

大学完善的教学设施，热情的教职员，吸引了世界各地的莘学子。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子是同一个标准，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，学生们的穿著也五花八门，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，还有八万多个教派的信徒在此举行宗教活动；二是克莱瑞斯·史密斯艺术表演中心。中心有四个表演大厅，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

