

PURPOSE AND INITIAL FINDINGS

California Council on Science and Technology



PURPOSE

CCST'S TWO-PHASE APPROACH

- I. Preliminary report early 2011 to coincide with opening of legislature and the gubernatorial transition
- II. Detailed set of recommendations in May 2011.

Based on a review of innovation indicators and roundtables with industry and academic leaders across the state, **CCST has completed its Phase I report.**

PHASE I FINDINGS

- **California's innovation ecosystem achieved world leadership in the last century** because of its system of higher education, highly skilled workforce, advanced technical infrastructure, and enlightened policies.
- **California needs again to do what it does best:** “innovate (its way) to innovation” (“i2i”). CCST has identified two promising approaches to this task:

CCST Has Identified Two Promising Approaches to this Task:

- **Public-private** partnerships
- **Enlisting California's S&T community** in finding solutions to two of the state's major challenges, and in so doing enhancing international competitiveness:
 - ▶ Promoting **digitally-enhanced education**.
 - ▶ Addressing California's critical **challenges related to water** in a new way

MEASURING INNOVATION

California's key innovation indicators:

- Ranks first in total **R&D funding** (\$71 billion) and high in R&D funding per capita
- Leads nation in total **patent registrations**, and accounts for 25% of US total but leveling off
- Increasingly depends on **foreign talent** in science & engineering
- Failing to develop math and science proficiency in **future talent base** locally

CA LEADS U.S. IN TOTAL R&D FUNDING

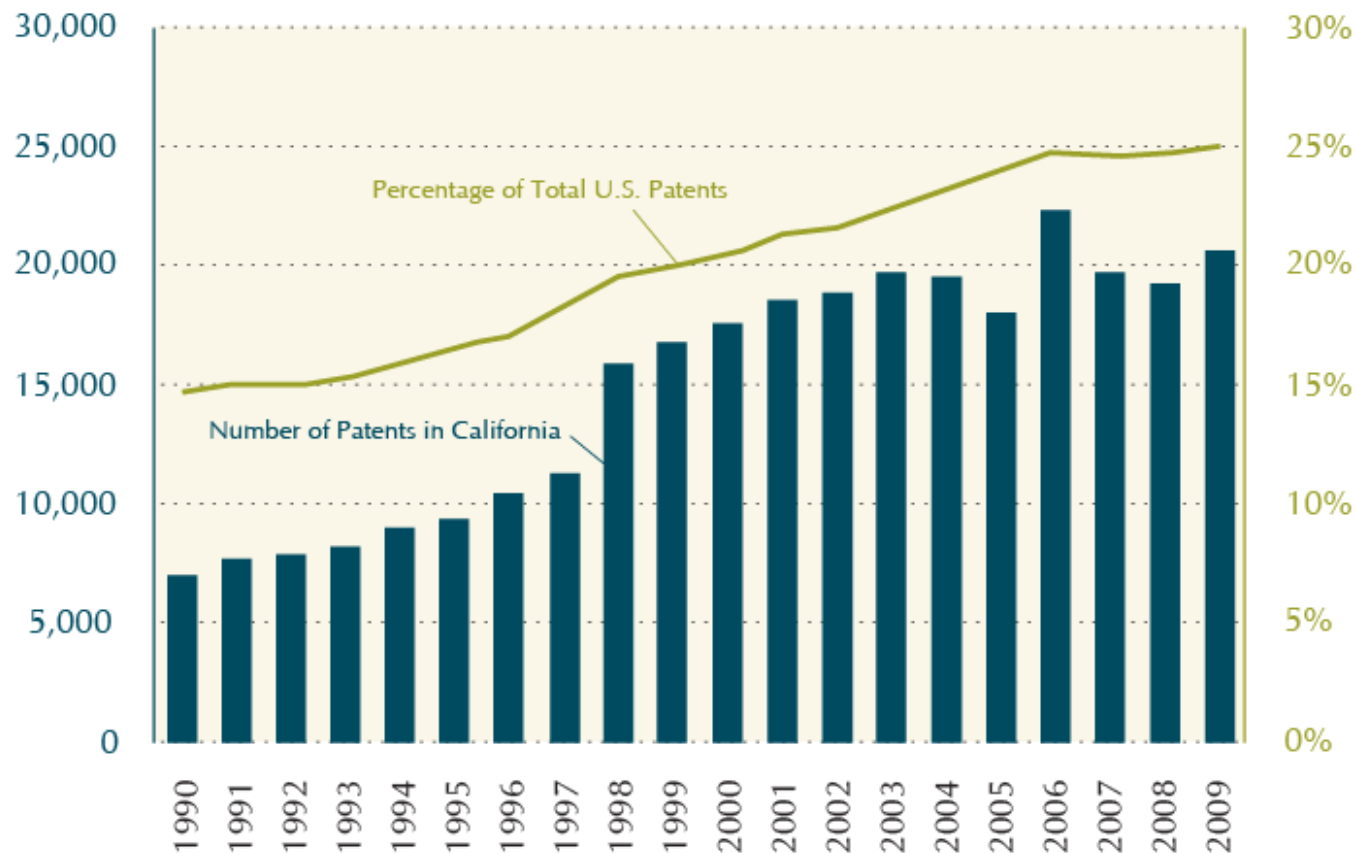
R&D FUNDING PER CAPITA: TOP STATES								
REGION	Total R&D Performance		Industry R&D		Federal R&D Obligations		Academic R&D	
	Total	Rank	Total	Rank	Total	Rank	Total	Rank
	2006						2007	
United States	\$1,123		\$817		\$360		\$164	
Massachusetts	\$3,182	1	\$2,407	1	\$944	4	\$334	2
New Mexico	\$2,980	2	\$348	31	\$1,596	2	\$208	8
Connecticut	\$2,596	3	\$2,374	2	\$457	9	\$198	12
Maryland	\$2,582	4	\$610	19	\$2,227	1	\$451	1
Washington	\$2,132	5	\$1,776	3	\$634	5	\$152	25
California	\$1,983	6	\$1,624	7	\$588	6	\$186	17

Data Source: Science and Engineering Profiles, by State: 2006-08 (NSF 10-302) November 2009; U.S. Census Bureau, Population Estimates
 Analysis: Collaborative Economics

CA LEADS U.S. IN TOTAL PATENT REGISTRATIONS, BUT ITS SHARE OF TOTAL IS LEVELING OFF

PATENTS

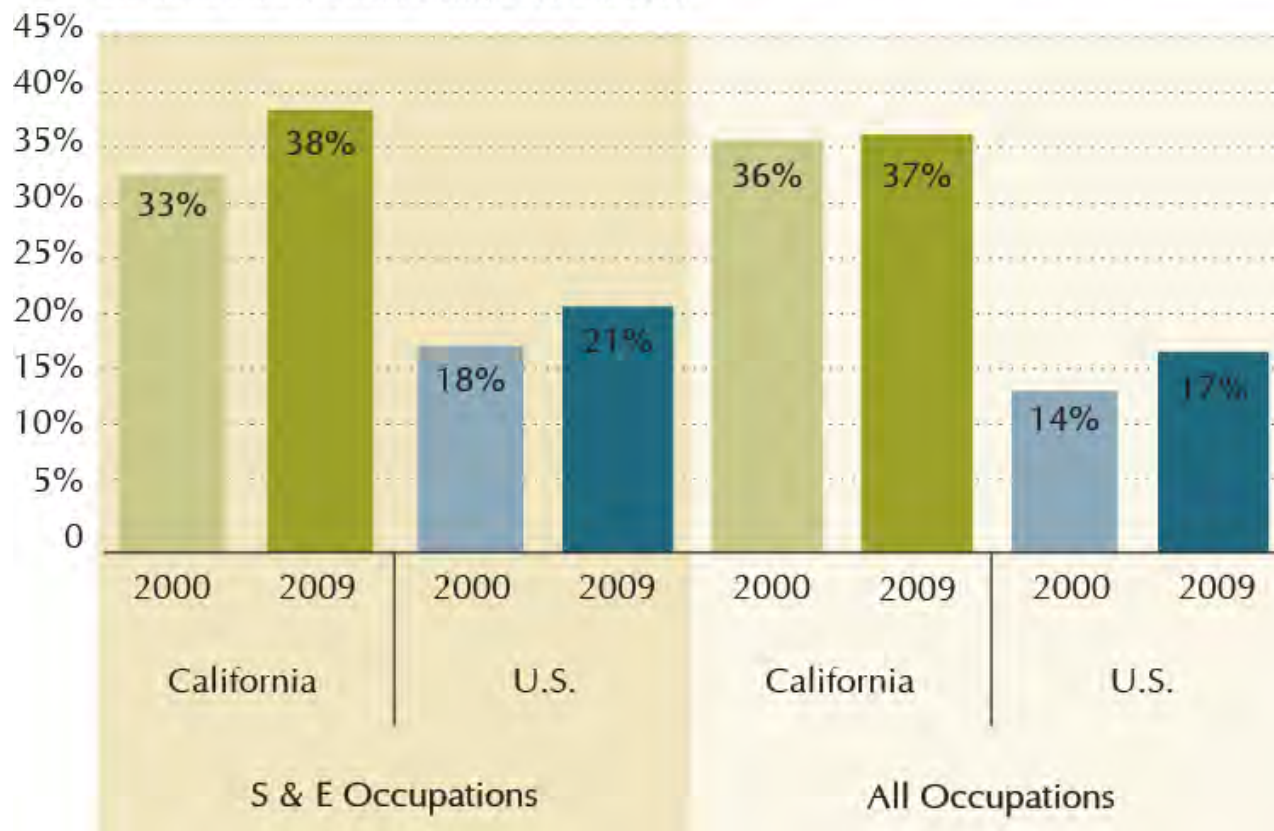
NUMBER OF PATENTS IN CALIFORNIA AND AS A PERCENTAGE OF TOTAL U.S. PATENTS



Data Source: U.S. Patent & Trade Office
Analysis: Collaborative Economics

CA'S COMPANIES DEMAND TOP TALENT AND RELY INCREASINGLY ON FOREIGN S&E TALENT

PERCENTAGE OF EMPLOYED TALENT WHO ARE FOREIGN BORN
California and the United States, 2000 and 2009



Note: Foreign born includes people born in U.S. territories/island areas

Data Source: U.S. Census Bureau, 2000 Decennial PUMS, 2009 American Community Survey PUMS

Analysis: Collaborative Economics

WHILE ACCESS TO FOREIGN TALENT IS NEEDED, DEVELOPING OUR OWN TALENT BASE IS VITAL

EIGHTH GRADE MATH AND SCIENCE PROFICIENCY

	MATH 2009		SCIENCE 2005	
TOP FOUR STATES	Massachusetts	1	North Dakota	1
	Minnesota	2	Montana	
	New Jersey		New Hampshire	2
	North Dakota		Vermont	
	Vermont	3	South Dakota	3
			Massachusetts	
CALIFORNIA RANKING	THIRD WORST OF 52 Equal to West Virginia & New Mexico Above Alabama & District of Columbia		SECOND WORST OF 45 Equal to Hawaii Above Mississippi	

Note: Data includes District of Columbia. 2005 Science proficiency data does not include six states.

Source: National Assessment of Math & Science Proficiency by Grade

PHASE II RECOMMENDATIONS

INNOVATION ACTION TEAM: Composed of leaders from universities, industry, and government to develop the following:

- **INNOVATION ROADMAP**

- Launch **CALIFORNIA INNOVATION INITIATIVE** to build support for specific actions to speed the translation of research into use
- Support development of **COMMUNITIES OF INNOVATION** by co-locating science and technology assets

- **IMPROVE CRITICAL INNOVATION INFRASTRUCTURE**

- Establish a **California Education Innovation Consortium** to develop and share best practices for digitally enhanced education
- Promote a **Science and Technology-Based Water Road Map** based on existing best practices and new approaches using information systems, biotechnology, and advanced water technologies

MEETING CALIFORNIA CHALLENGES USING OUR INNOVATION ASSETS: A Public-Private Agenda for Action

NEXT STEPS:

CCST would like to work closely with the **legislature, new administration, private sector, and academia** to develop these ideas into a **Phase II report in May 2011**.

