



UC SANTA CRUZ

People Making a World of Difference

UC
California's Public Research University
1998 to 2007

George Blumenthal, PhD
Chancellor, UC Santa Cruz
CCST Council Meeting, Sacramento
February 4, 2010

- California's population is increasing, but its percentage of the U.S. population (12%) has remained relatively constant.
 - 34 M (2000); 37 M (2008)
- **California leads the nation in diversity at the K-12 level** and lags behind most other states in key areas: **expenditures per student**, low income and limited English proficient students, percentile in Title 1 schools, high-school graduation rates, and student/teacher ratios.
 - 6.5 M students (13% of national total); 310K teachers (21/1 ratio)
 - 48% low-income students
 - 81% graduate from high school
- Since the mid-1960s, **UC's undergrad enrollment has grown three times faster than graduate and professional enrollment.** Undergraduate enrollment has been 75% of all UC enrollment since 2000.
- **The number of undergraduates at UC has grown about 23 percent between 2000 and 2008, from 140,938 to 172,774 students.**

- More than a third of UC undergraduates are Pell grant eligible ... by FAR the highest percent in the nation
- Graduate programs have not kept pace with growth of undergraduates
- Clear need for more training for CA in health fields like medicine

General Fund Spending by Major Program Area (in Millions)

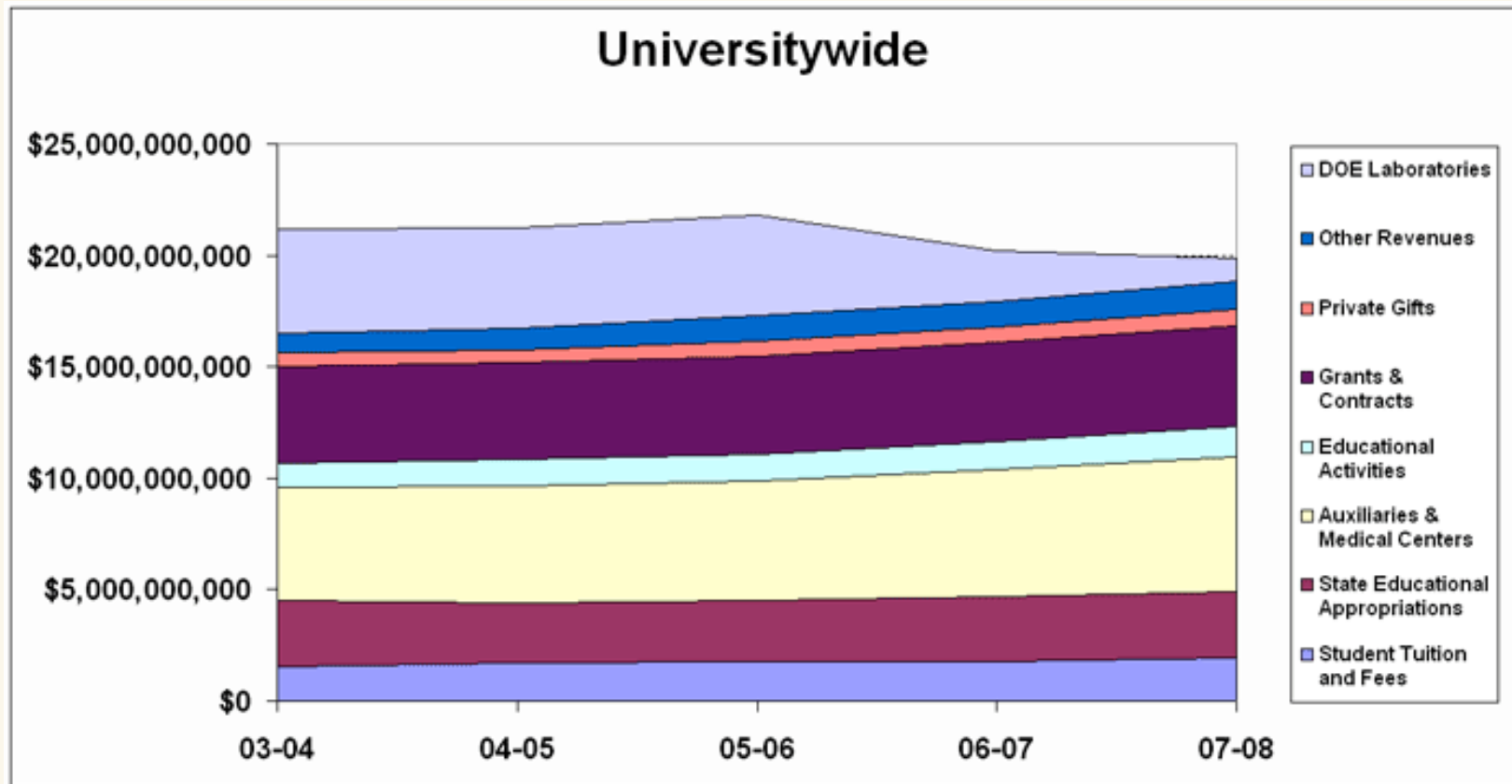
Programs	Actual 2007-08	Est. 2008-09	Enacted 2009-10
K-12 Education	\$39,825	\$32,356	\$33,745
Higher Education	11,823	10,138	10,495
Health	19,906	18,794	16,077
Social Services	9,432	10,009	8,876
Criminal Justice	13,059	12,778	9,032
All other	8,954	7,472	6,358
Totals	\$103,000	\$91,547	\$84,583

Source: http://www.dof.ca.gov/budgeting/budget_faqs/information/documents/CHART-B.pdf

- Our fundamental fiscal problem is the **disinvestment in the University of California** by the state of California.
- Since 1990, the State's expenditure for the cost of reducing each UC Student has fallen by more than **50%**, adjusted for inflations...and we lost 20% of our total State-funded operating budget in 2009-10 alone.
 - Effect on FTE ratios
 - Faculty salaries (potential attrition)
 - Infrastructure decay
 - Retirement system challenges
- The Governor's 2010-11 spending plan proposes restoring \$370 million for UC. This proposal is an important step, given that UC now enrolls more than 15,000 students unsupported by State funds.
- New direction of conversation: prisons vs higher ed



UC Revenue by source, 2003-04 to 2007-08



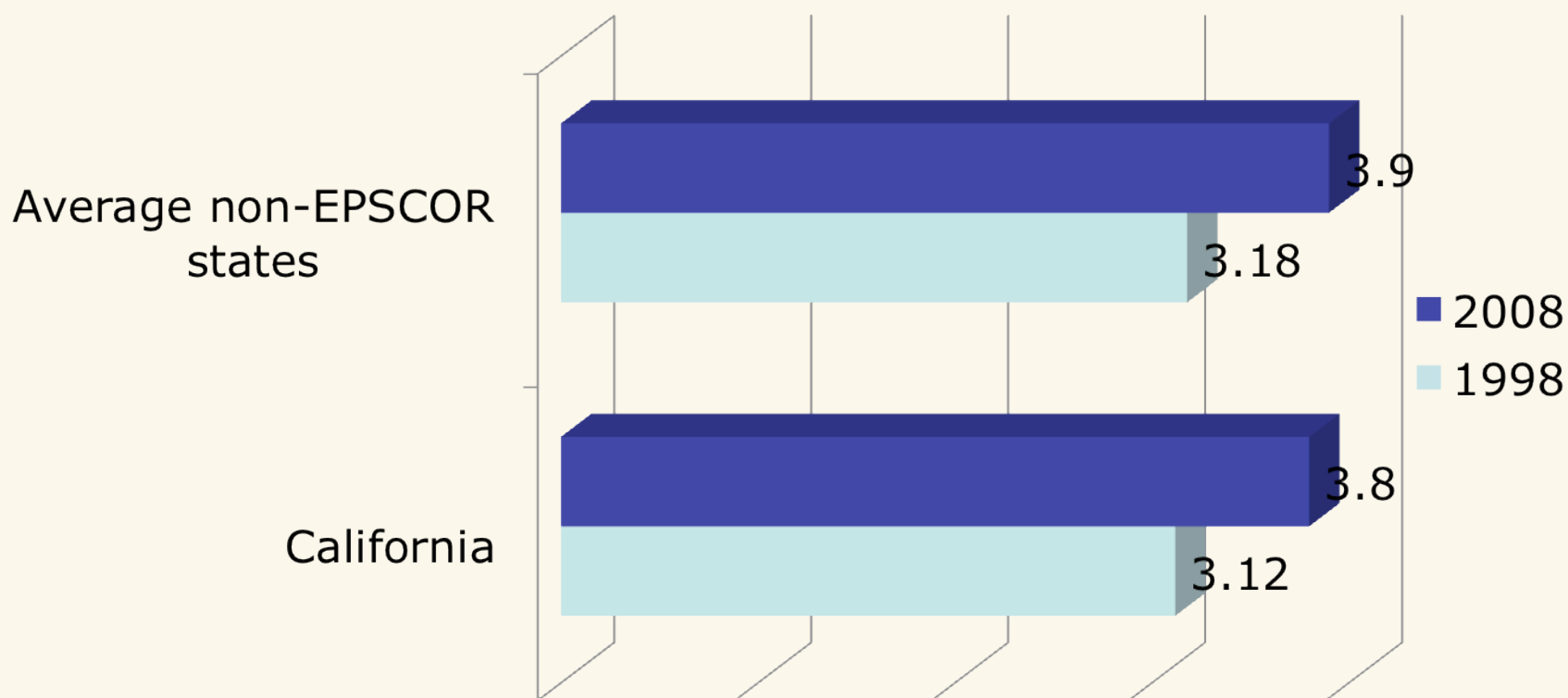
Source: UC Accountability Report, May 2009 Indicator 12.1

- Furloughs (4-10%) in 09-10 year
- Fee increases. Regents recently increased fees by 32% to more than \$10k per year.
- Program cuts
- Downsized Office of the President
- Unfilled faculty positions
- Reduced CA enrollment
- Increase paying nonresidents
- UC bonds for buildings
- Commission on the Future

- Worldwide R&D expenditures totaled an estimated \$1.107 trillion in 2007.
- **Top 10 countries (inc. South Korea, UK, the Russian Federation, Canada, and Italy) account for almost 80% of global R&D performance.**
 - Percentage of total
 - US – 33%
 - Japan – 13%
 - China – 9%
 - Germany – 6%
 - France – 4%
- Recent growth in R&D expenditures has been most dramatic in China, averaging just above 19% annually in inflation-adjusted dollars over the past decade.
- R&D/GDP ratios increased substantially in Japan, South Korea, and China over the past 10 years.
 - Japanese – 3.4 %
 - South Korea – 3.5 %
 - China – 1.5 % (increase from 0.6% in 1996)

- Overall spending on R&D conducted in the US was \$398 billion (current dollars) in 2008, up from \$373 billion in 2007. This increase represents growth in 2008 of 6.7% over the 2007 level, or 4.5% in inflation-adjusted 2000 dollars. However, this 2008 figure may not fully reflect the effects of the downturn in U.S. and global economic conditions that intensified in late 2008.
- **In 2007, the 10 states accounted for 64% of all U.S. R&D expenditures. California alone represented 22% of U.S. R&D—triple** that of Massachusetts, the next highest state. New Mexico, Massachusetts, and Maryland had the highest R&D to-GDP ratios in 2006. California ranked seventh in R&D/GDP intensity.

Academic R&D per \$1000 GDP



Source: NSB S&E Indicators 2010, 8-89 (not UC specific)

EPSCOR: States getting very little R&D Funding per NSF's defined criteria.
CA is not EPSCOR state so more relevant comparison is Non-EPSCOR states.

Total R&D Expenditures, 1996-97 to 2007-08

Academic Year	Universitywide Total (Thousands)	All Academic Institutions (Thousands)	UC total as a % of All Institutions
1996-97	2,698,662	31,327,897	8.60%
1997-98	2,940,680	32,800,157	9.00%
1998-99	3,120,720	34,495,255	9.00%
1999-00	3,436,174	37,010,346	9.30%
2000-01	3,739,877	39,470,238	9.50%
2001-02	4,033,325	42,855,971	9.40%
2002-03	4,314,090	46,347,619	9.30%
2003-04	4,459,840	48,818,398	9.10%
2004-05	4,525,526	50,083,847	9.00%
2005-06	4,588,204	50,592,701	9.10%
2006-07	4,634,028	50,889,237	9.10%
2007-08	4,742,949	--	--

Source: UCOP Accountability Report Indicator 9.1 (May 2009)

- California Institute for Regenerative Medicine
 - \$554 M disbursed (June 2008) (a)

- California Institutes for Science and Innovation
 - \$1.2 B (estimated public and private) (b)

- Energy Biosciences Institute (UC Berkeley, Lawrence Berkeley Lab, University of Illinois, BP) (c)
 - \$500 M

a) Analysis Group, CIRI-Interim Economic Impact Review, 9/2008

b) UCOP website, <http://www.ucop.edu/california-institutes/background/questions.htm>

c) <http://www.energybiosciencesinstitute.org/>

- Increase State Funding
- Increase tuition
- Increase federal support

- All of this is a way of sustaining the success that PUBLIC research universities have had relative to their private counterparts

- Continued success in the research enterprise, particularly with the recent addition of stimulus funds
- Significant undergraduate growth in the past decade, which has now halted for lack of funds
- Budget crisis with large permanent cuts, leading to much higher fees, layoffs and cuts in academic programs
- Need to face up to the issue of privatization if public funds are not forthcoming
- Need to adapt to changing models as a way of **preserving excellence** while meeting the needs of California.

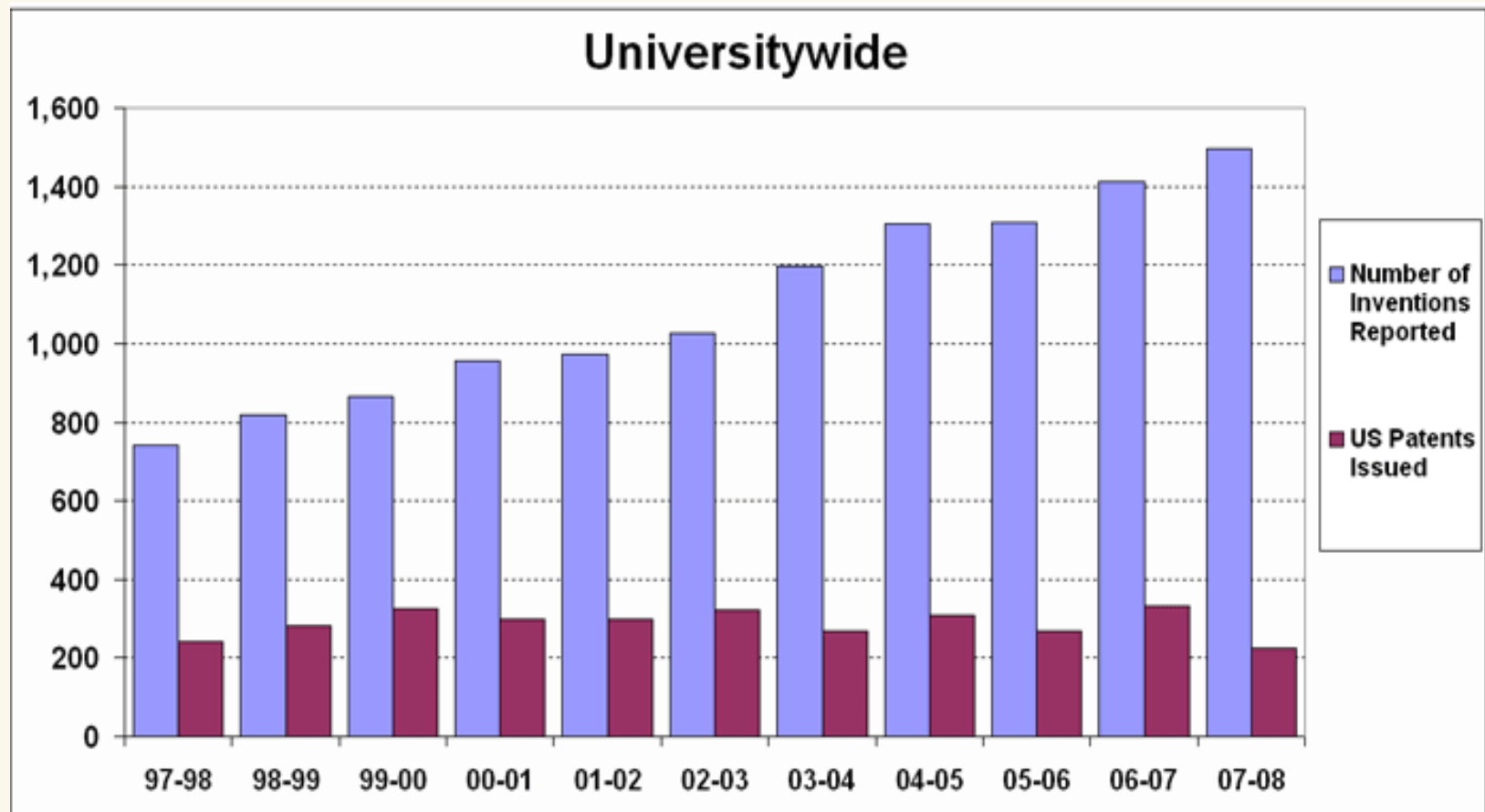


Trends in research outputs at UC, 1997-2008

- UC has been reporting more patent inventions
- Fewer patents are being awarded
- Number of active licenses has been increasing steadily.
- Licensing income has increased slightly (<\$10M). Income from the 25 top-earning inventions accounted for approximately 75 percent of total royalty and fee income



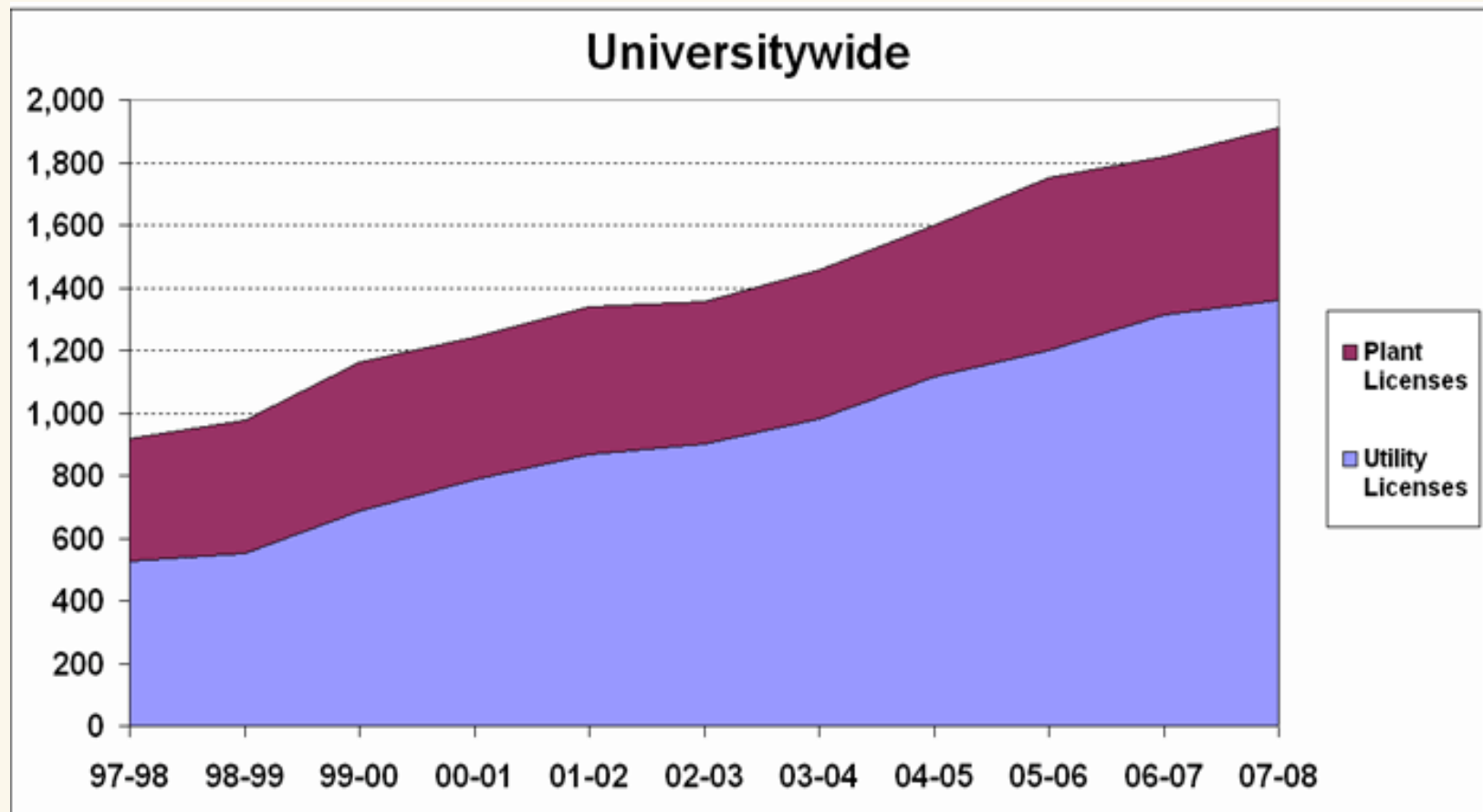
Number of Patents and Inventions, 1997-98 to 2007-08



Source: UCOP Accountability Report Indicator 9.7 (May 2009)



Number of Active Licenses, 1997-98 to 2007-08



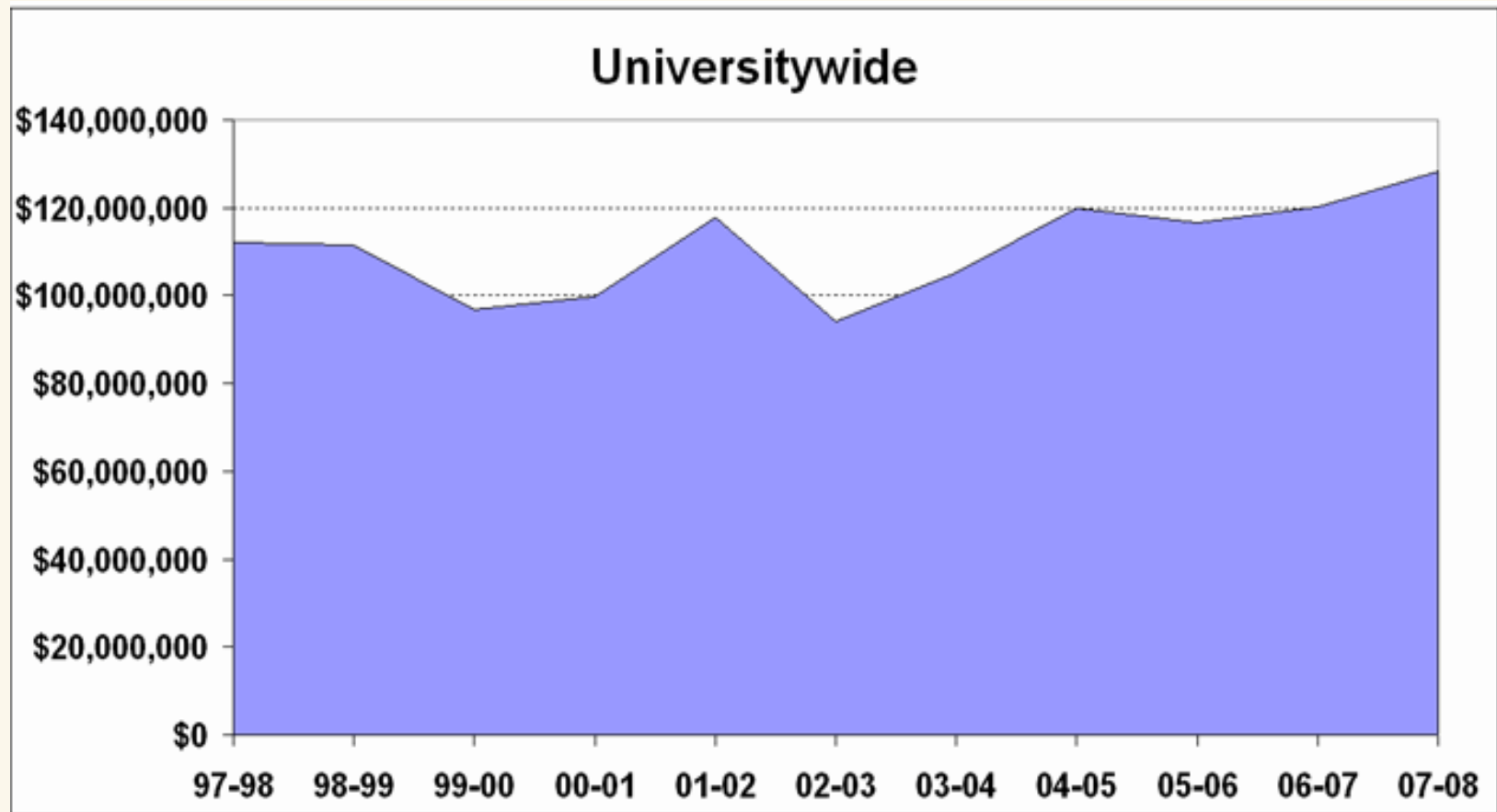
Source: UCOP Accountability Report Indicator 9.8 (May 2009)

Plant licenses cover sexually and asexually reproduced plant varieties.

Utility licenses cover processes, machines, manufactured items and compositions of matter.



Licensing Income, 1997-98 to 2007-08



Source: UCOP Accountability Report Indicator 9.9 (May 2009)



California Spending

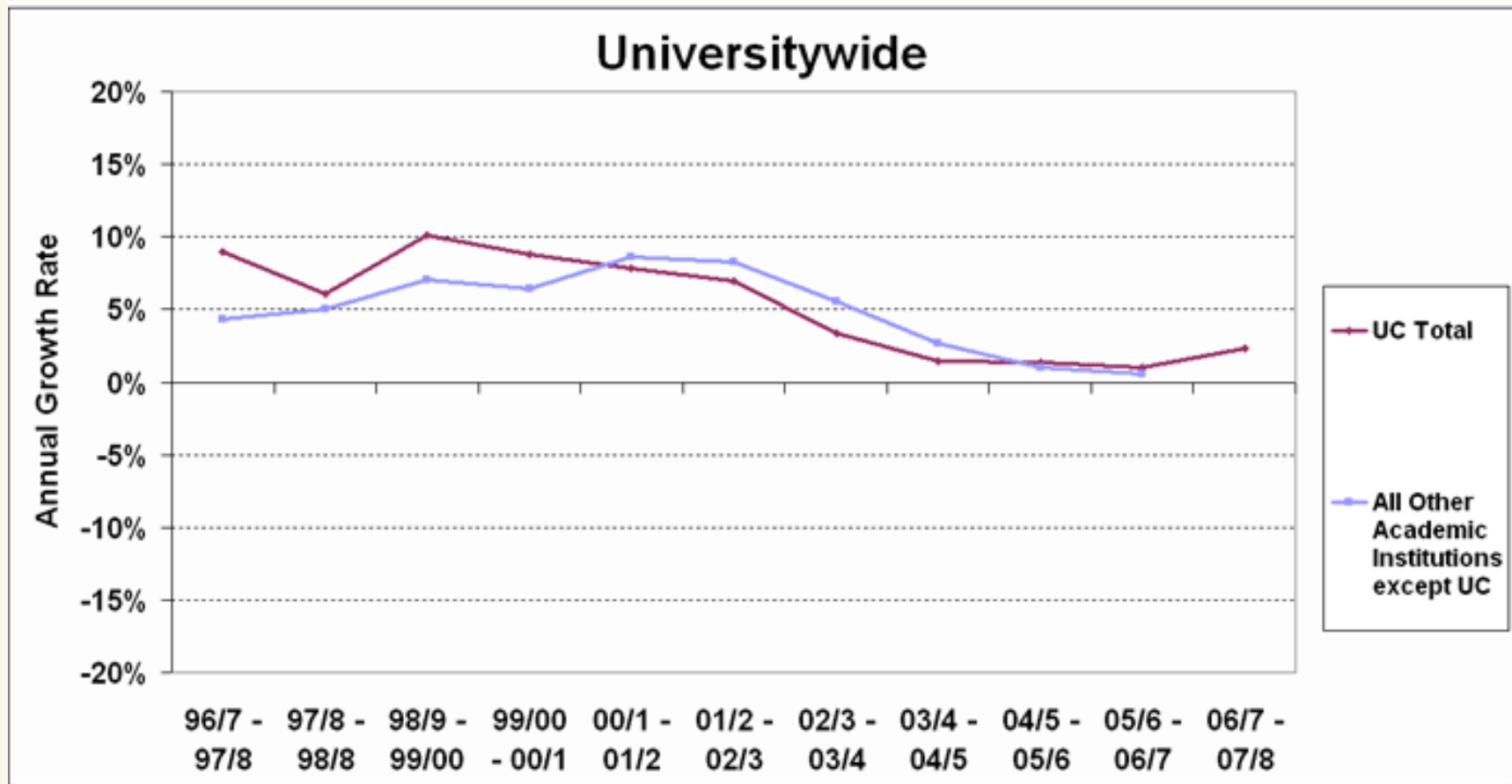
	FY 1997-98	FY 2003-04	FY 2007-08
CA State spending	\$68.5 billion	\$104.2 billion	\$138.1 billion
Federal Spending in CA	\$31.6 billion	\$52.5 billion	\$56.2 billion

Source: http://www.dof.ca.gov/budgeting/budget_faqs/information/documents/CHART-B.pdf

- Academic R&D has increased slightly between 1997 and 2008
- CA lags slightly behind the non-EPSCOR state average R&D
- The growth rate of UC's R&D mirrors national averages; the growth rate of UC's R&D, while still positive, is decreasing
- **Since 1997, UC total R&D Expenditures have exceeded 9% of all expenditures at US Institutions.**
- Federal government is far and away the largest source of R&D Funds; HHS is the largest source of funds.
- CA has developed new sources of funding that benefit UC
 - **CIRM, Cal ISIs, Energy Biosciences Institute**

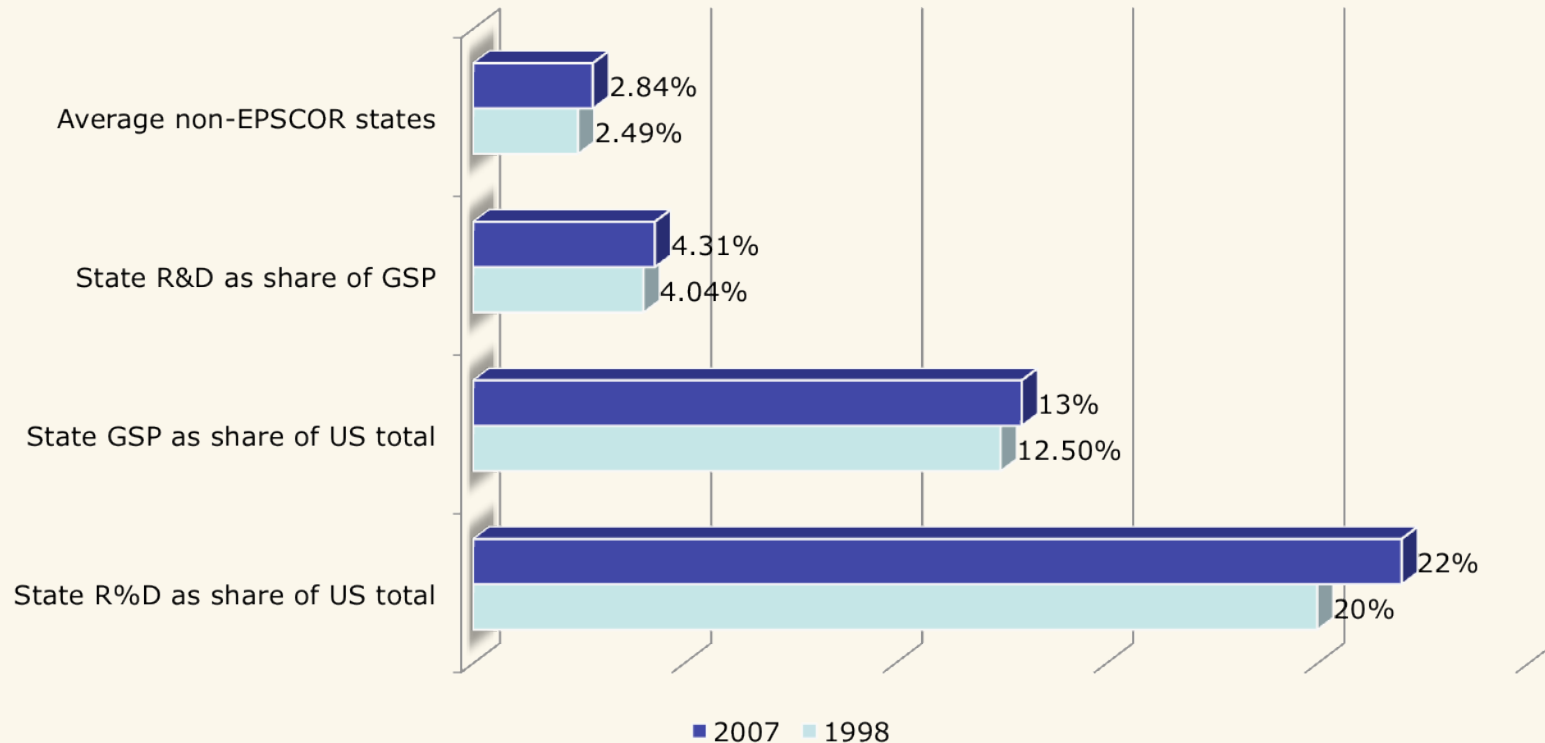


Annual Growth Rate Total R&D Expenditures, '96-97 to '07-08



Source: UCOP Accountability Report Indicator 9.2 (May 2009)

CA's R&D Funding has remained stable, with a slight increase

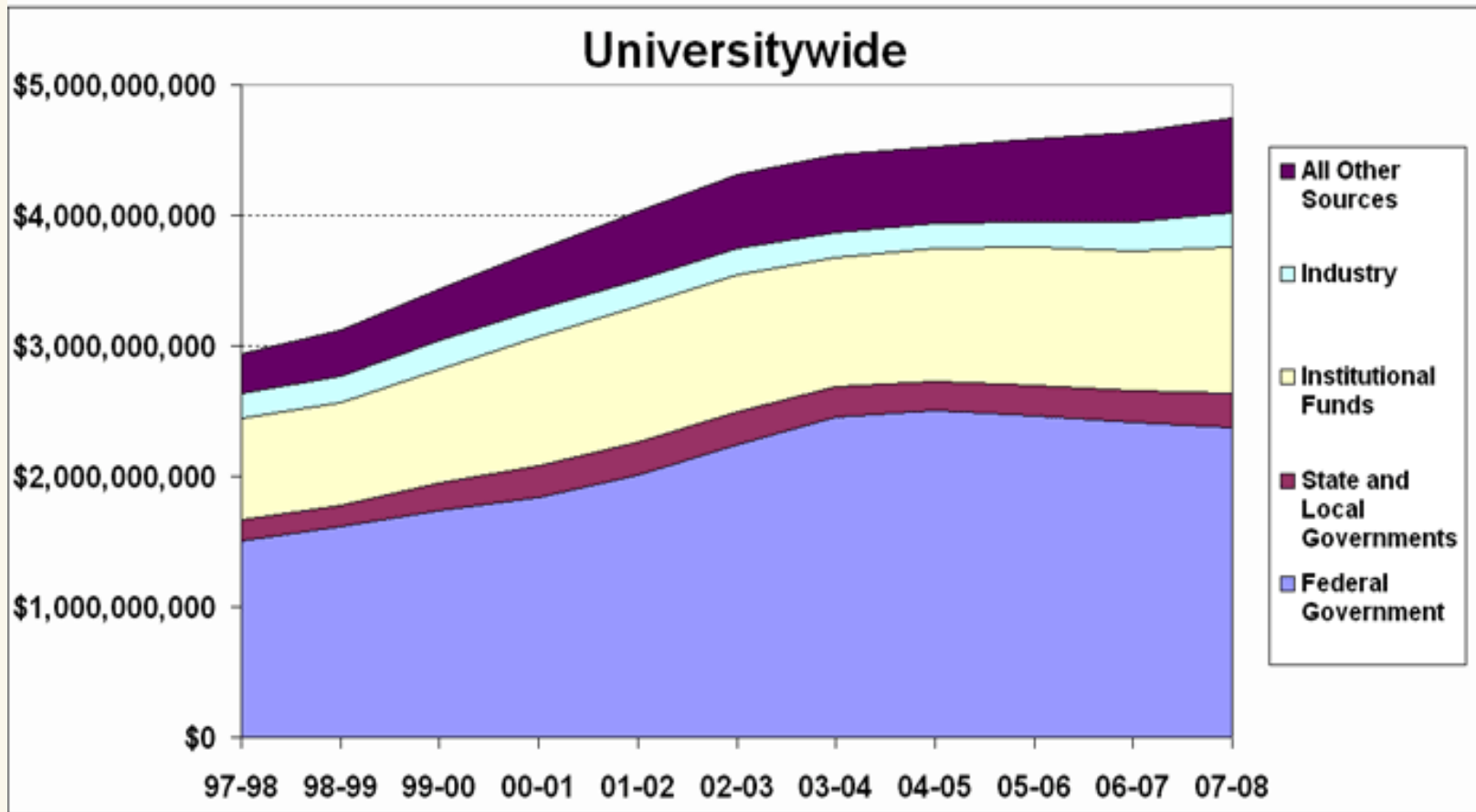


Source: NSB S&E Indicators 2010, 8-75

EPSCOR: States getting very little R&D Funding per NSF's defined criteria.
CA is not EPSCOR state so more relevant comparison is Non-EPSCOR states.



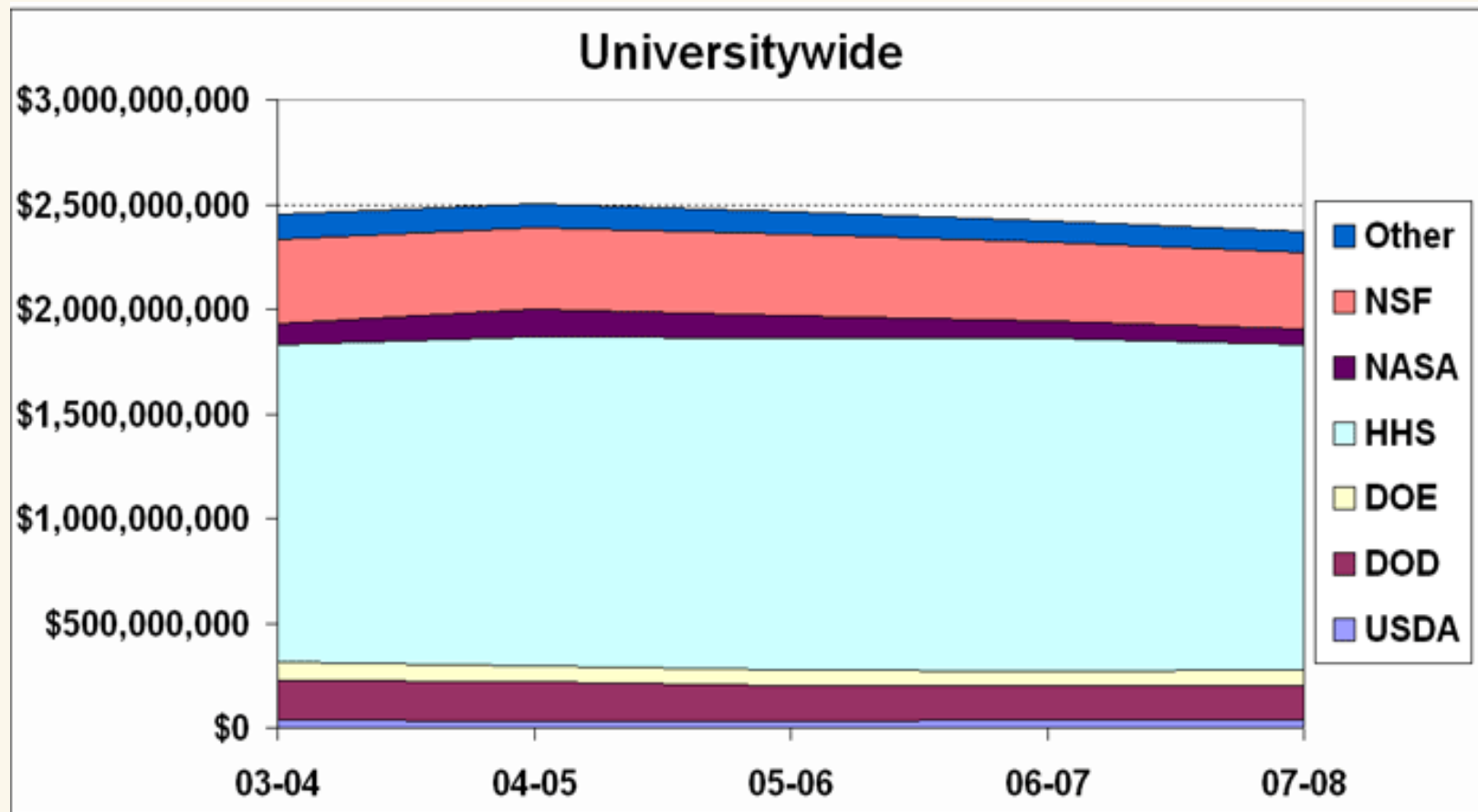
UC Total R&D Expenditures by source, '97-98 to '07-08



Source: UCOP Accountability Report Indicator 9.5 (May 2009)



Federally Funded R&D Expenditures by Agency: '03-04 to '07-08



Source: UCOP Accountability Report Indicator 9.6 (May 2009)

- **Demographics**
- **Budget**
- **International/National Context**
- **Research and Development Trends**