The Knowledge Economy Has Arrived: Now what do we do?

SCUP Annual International Conference
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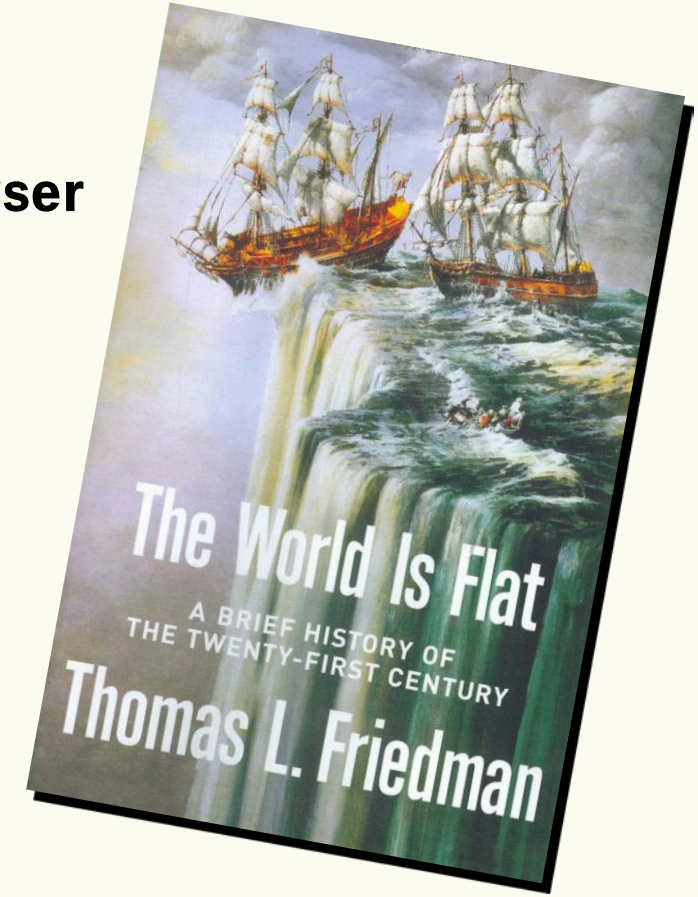
Paul E. Lingenfelter, President
State Higher Education Executive Officers

SHEEO

Forces flattening the global playing field

- Fall of Berlin Wall
- First Mainstream Web Browser
- Work Flow Software
- Open Sourcing
- Outsourcing
- Offshoring
- Supply-chaining
- Insourcing
- In-forming
- The “Steroids” Wireless Mobile Digital Communication



Drucker's "knowledge society"

- Borderless
- Upward mobility through formal education
- Potential for failure as well as success

Implications of a flat world for higher education

1. Geography and natural resources less important, talented communities more important economically
2. Cheaper labor advantageous – **Temporarily**
3. Well-established economies less dominant
4. Higher education less elite, more universal
5. Lifelong learning, for work and pleasure
6. Higher education markets and delivery systems more diverse
7. Greater emphasis on quality assurance, assessment of learning, clarity of credentials and qualifications
8. Greater need for K-12, postsecondary collaboration
9. U.S. higher education must become more productive
10. Eco-social-political systems greatly challenged

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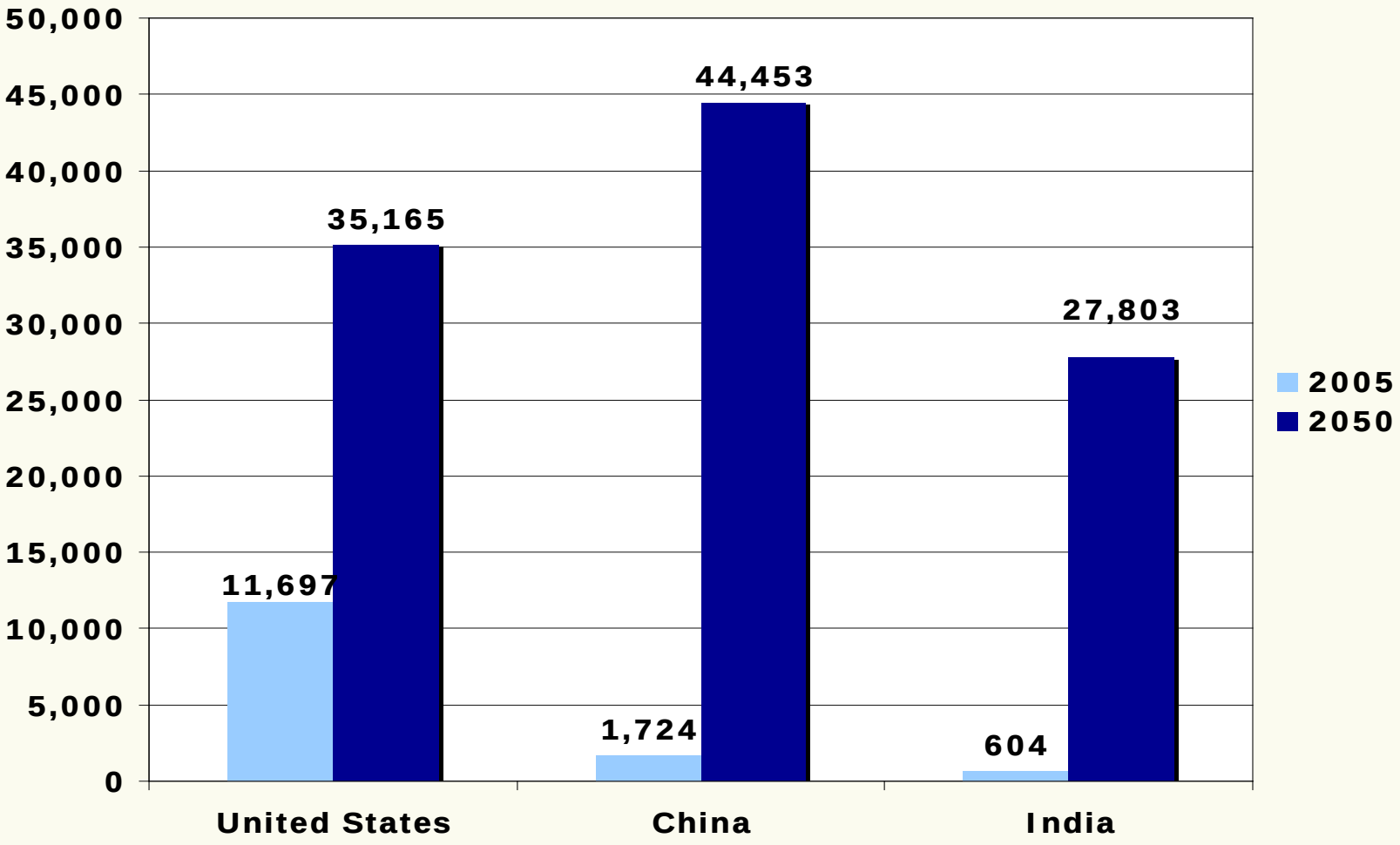
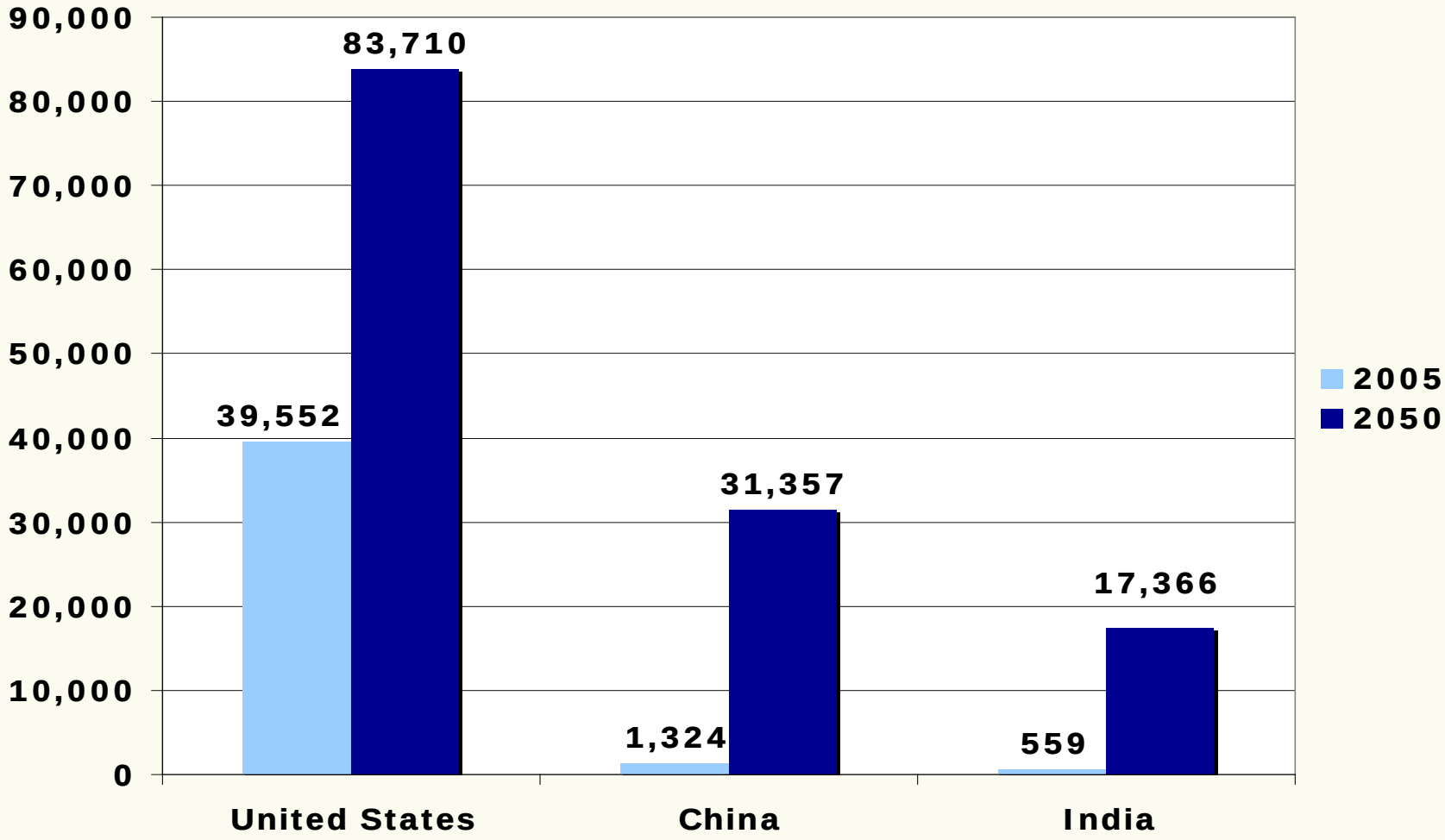
Projected US$GDP in billions: 2005, 2050



Source: Goldman Sachs, Global Economies Paper No:99, BRICs Model Projections.

Projected US$GDP per capita: 2005, 2050



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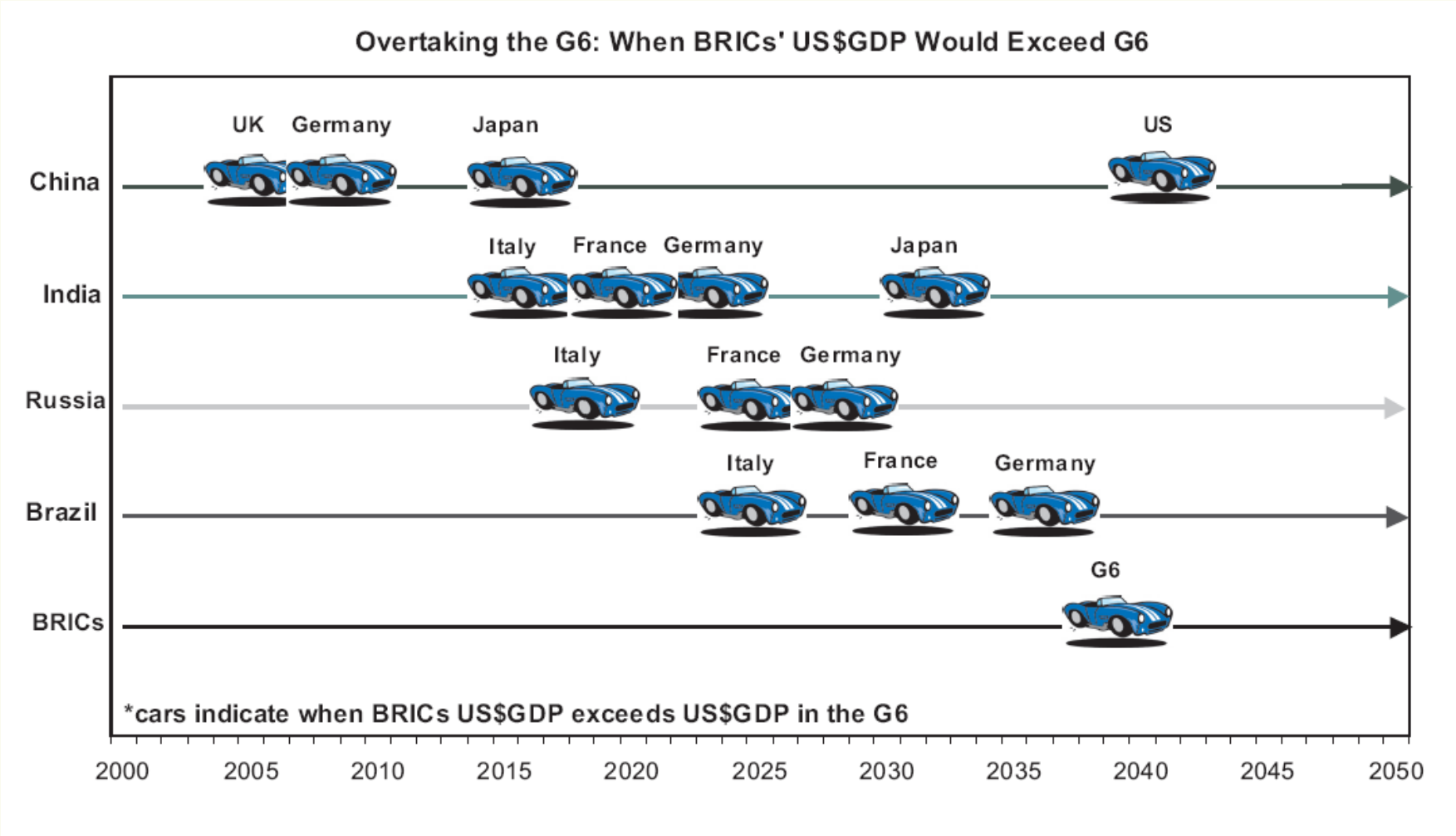
The global race...



Source: Goldman Sachs, Global Economies Paper No:99, BRICs Model Projections.

The price of American workers

- American (and Western European) workers are the most expensive in the world.
- What will it take for them to be worth what they cost?
- They must be the best educated in the world.

Source: Geoffrey Colvin, Fortune Magazine, July 20, 2005.

Recipe for social and economic prosperity…

COMBINE

a well-educated workforce with investment in R&D.

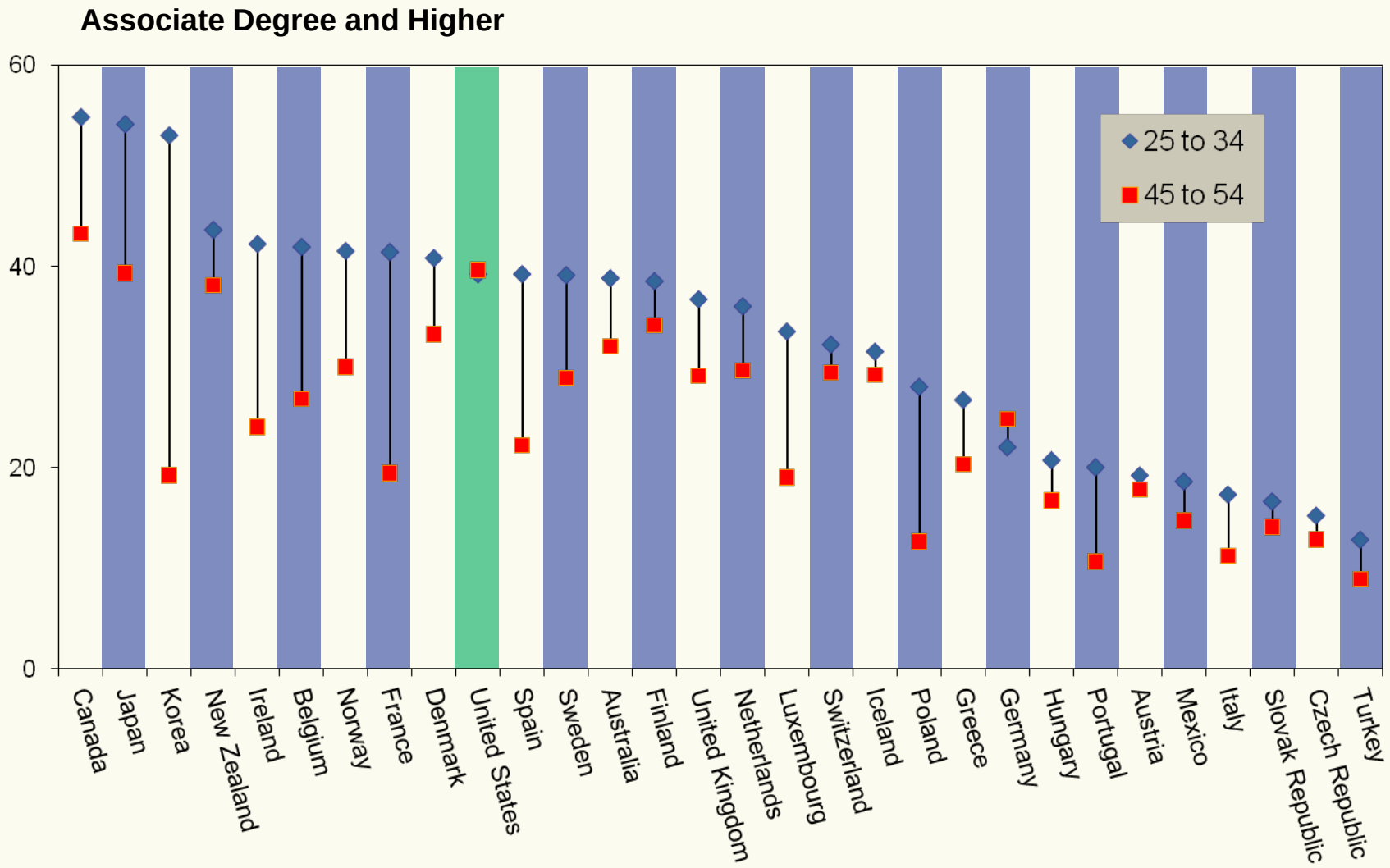
MARINATE

in a competitive, market economy, governed by fair laws.

STIR

gently, but continuously.

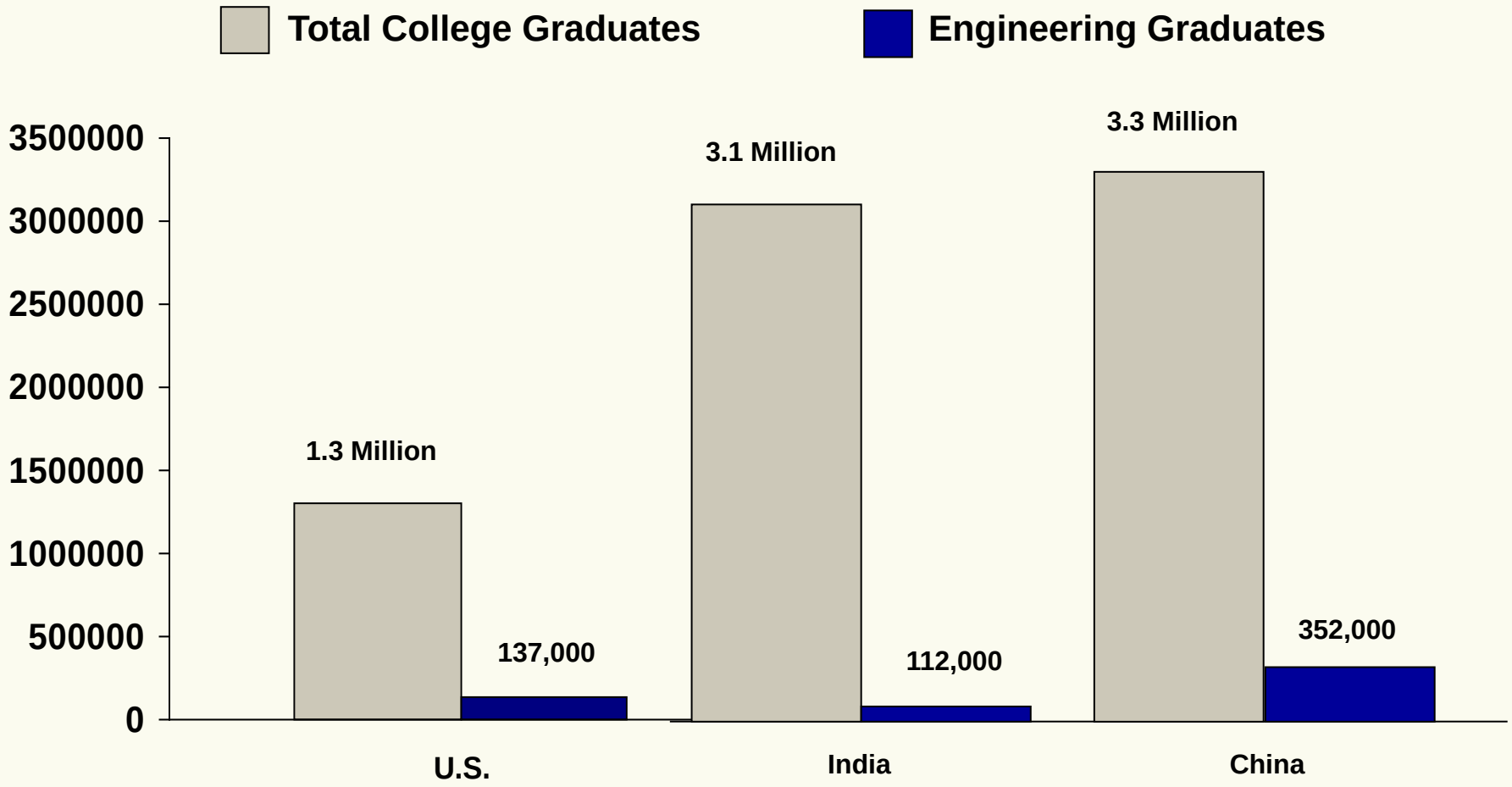
Differences in College Attainment Between Younger & Older Adults—U.S. & OECD Countries, 2006



Source: NCHEMS using Organisation for Economic Co-operation and Development (OECD), *Education at a Glance 2008.*

College Graduates: U.S., India, and China

REVISED DATA : 4 year degrees



Source: Duke Engineering Management Program.

China's Education System – 2004

	No. of schools	No. of teaching staff	No. of students	Gross rate of enrollment
Higher ed.	3,423	970,506	18,352,821	19%
High school ed.	31,493	1,920,894	36,076,284	47.6%
Middle school ed.	63,757	3,500,464	65,762,936	94.1%
Primary ed.	394,183	5,628,860	112,462,256	106.6%
Pre-schooling ed.	117,899	656,083	20,894,002	40.8%

Source: Yang Jin, Ministry of Education for the People's Republic of China.

China’s educational targets by 2020

Universalizing 15 years of education is one of the major targets in 2020:

- **3-year preschool education;**
- **9-year compulsory education; and**
- **3-year high school level of education.**

Source: Yang Jin, Ministry of Education for the People’s Republic of China.

Aspirations of high school sophomores

72% - At least a baccalaureate degree

36% - A graduate or professional degree

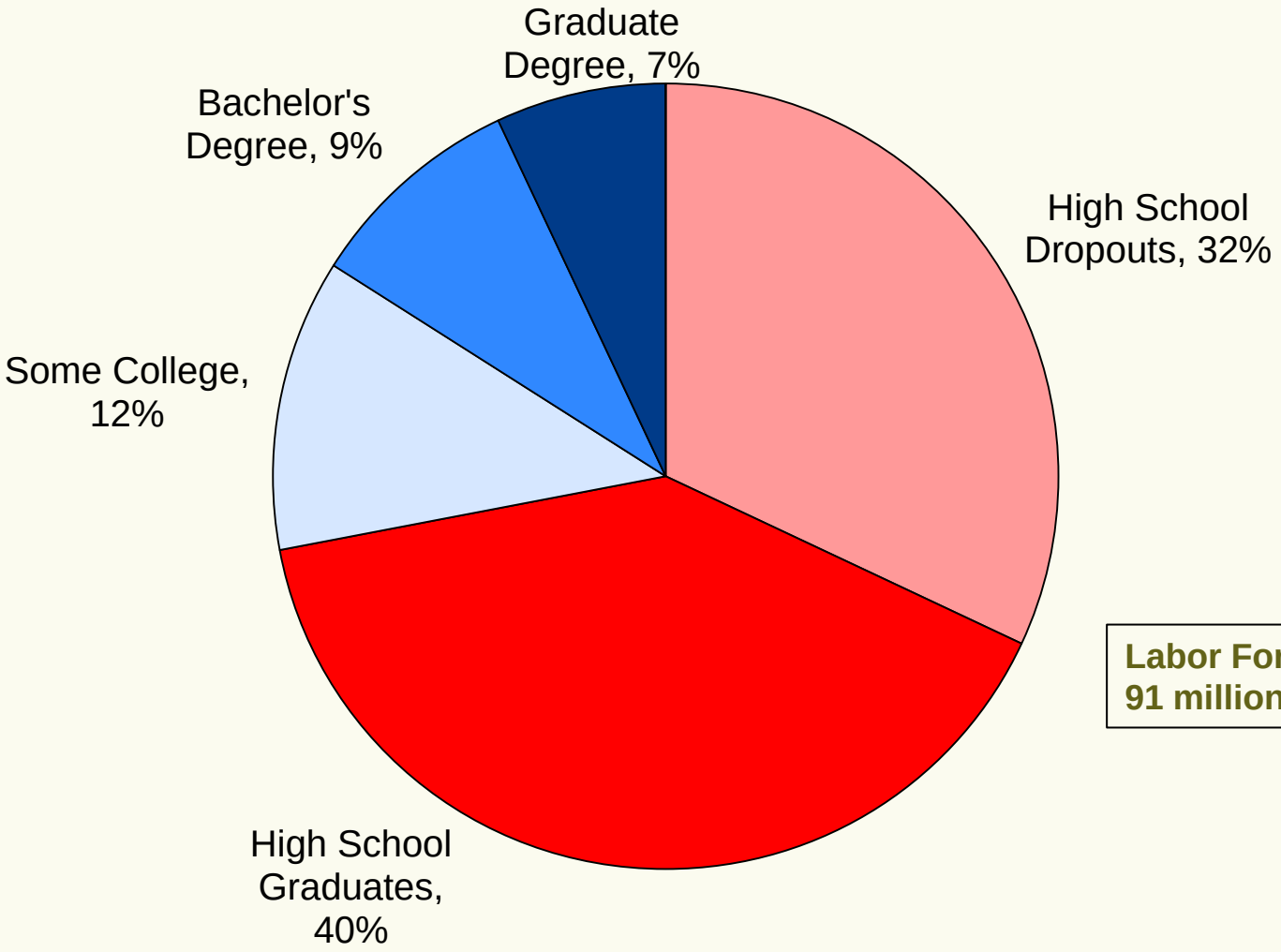
10% - Some postsecondary education

8% - No postsecondary education

10% - Don’t know

Source: Ingels, S.J., Burns, L.J., Chen, X., Cataldi, E.F., and Charleston, S. (2005). A Profile of the American High School Sophomore in 2002: Initial Results from the Base Year of the Education Longitudinal Study of 2002 (NCES 2005–338). U.S. Department of Education, Washington, DC: National Center for Education Statistics.

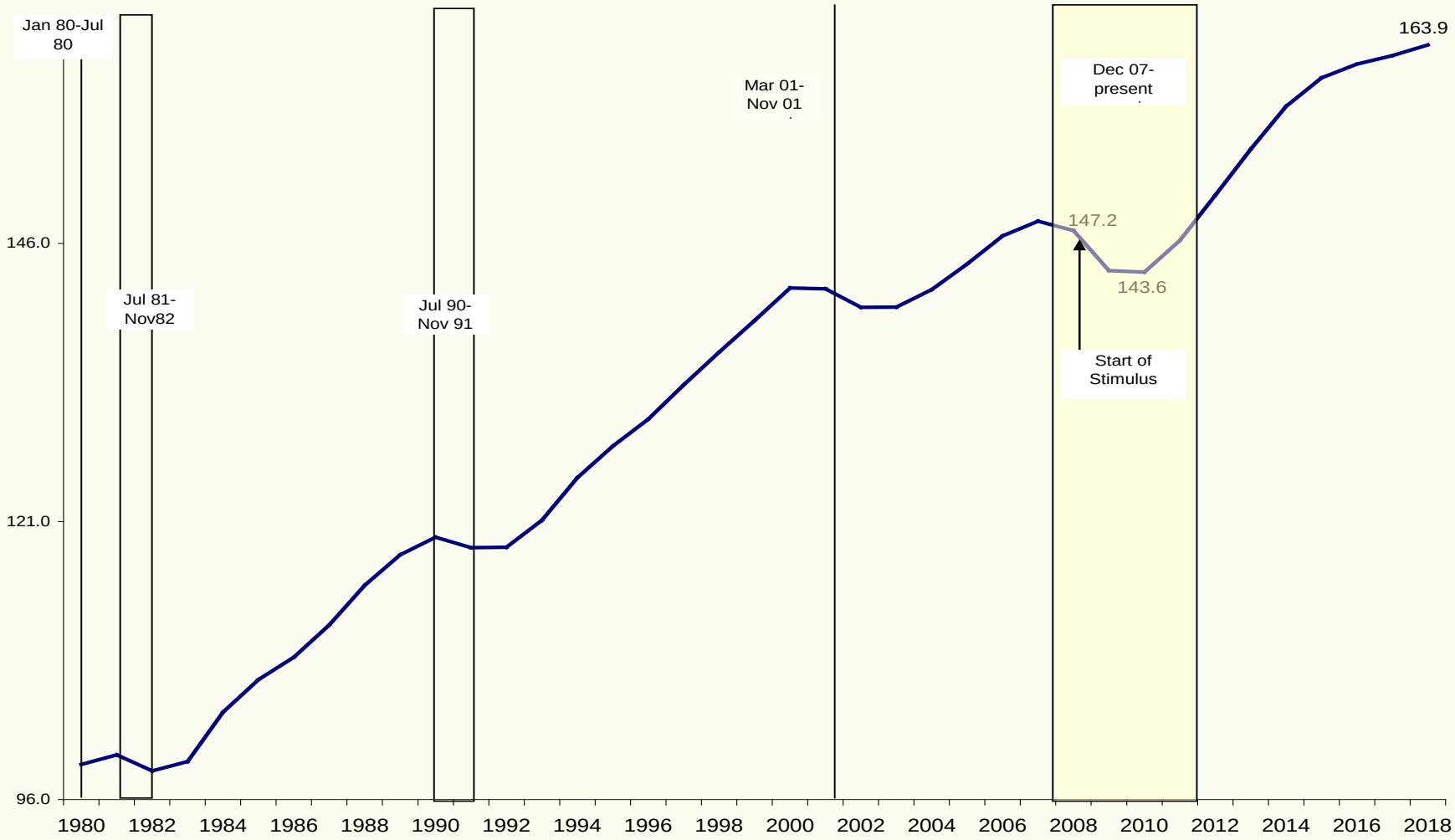
Education of the U.S. labor force, 1973



Labor Force in 1973: 91 million

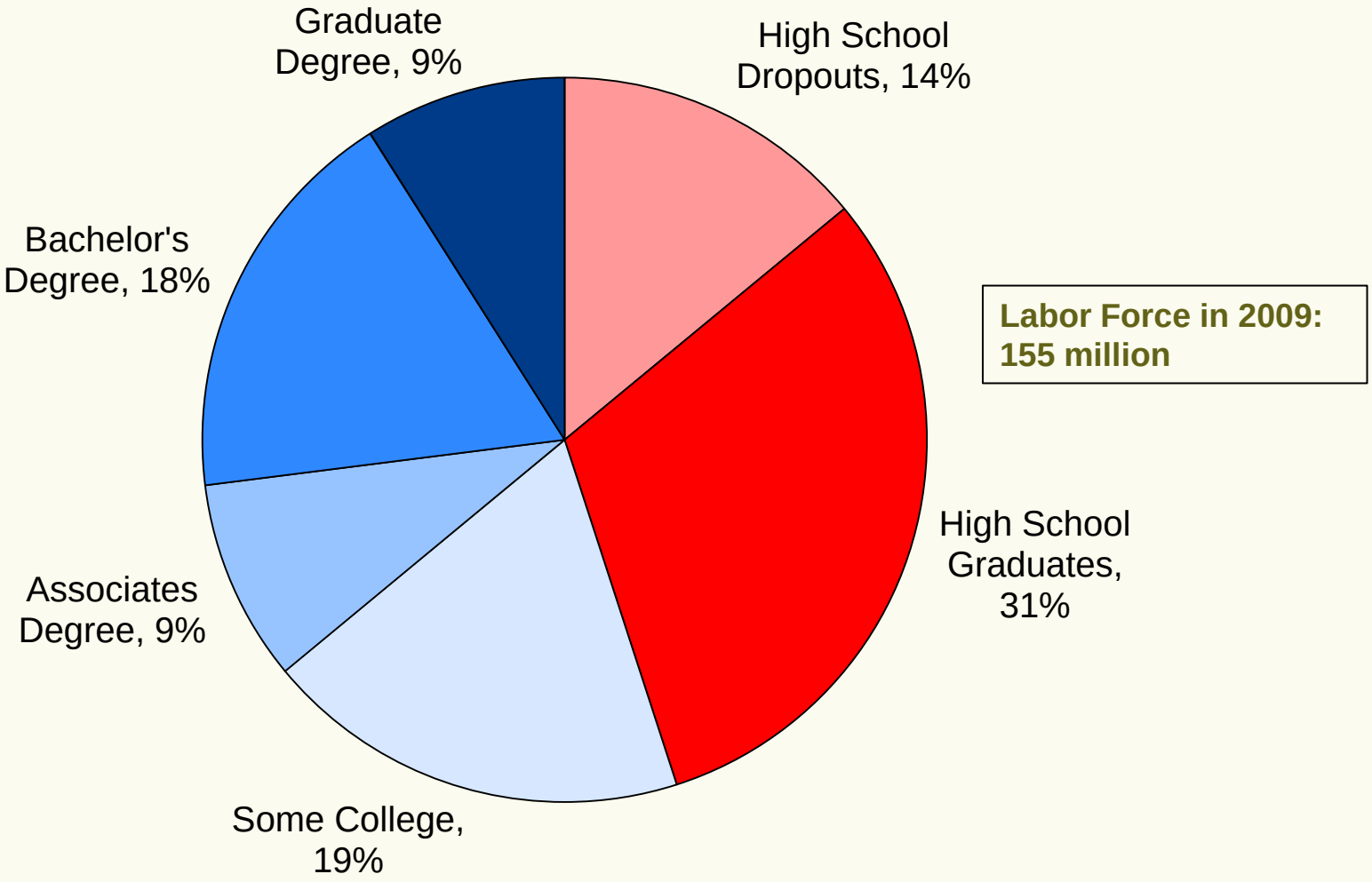
Source: U.S. Census Bureau, CPS, 1973.

Growth of U.S. labor force, 1973 and beyond



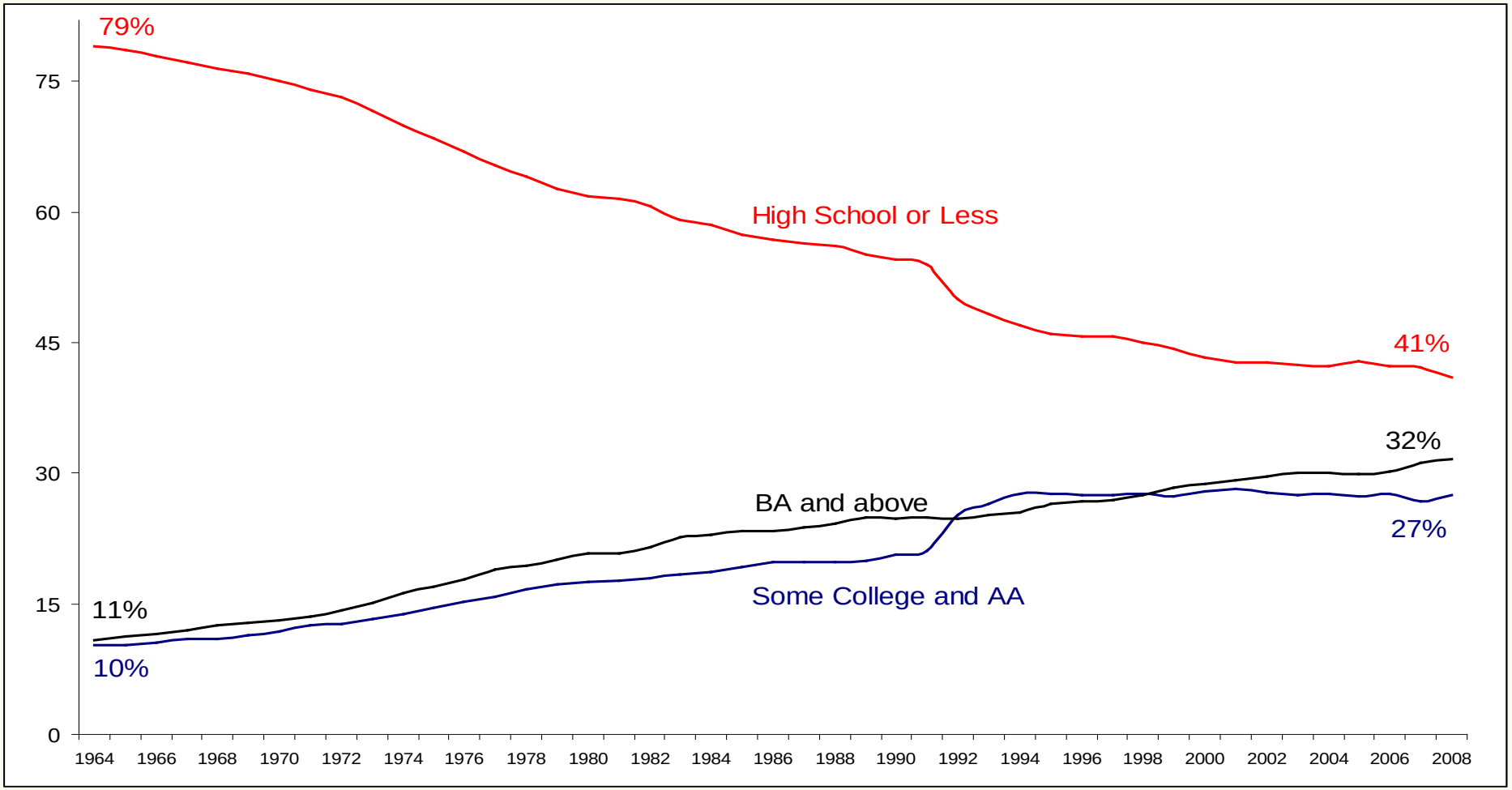
Source: Georgetown University Center on Education and the Workforce's Analysis of Macroeconomic Advisers (MA) Long-term Economic Outlook, March 2009.

Education of the U.S. labor force, 2009



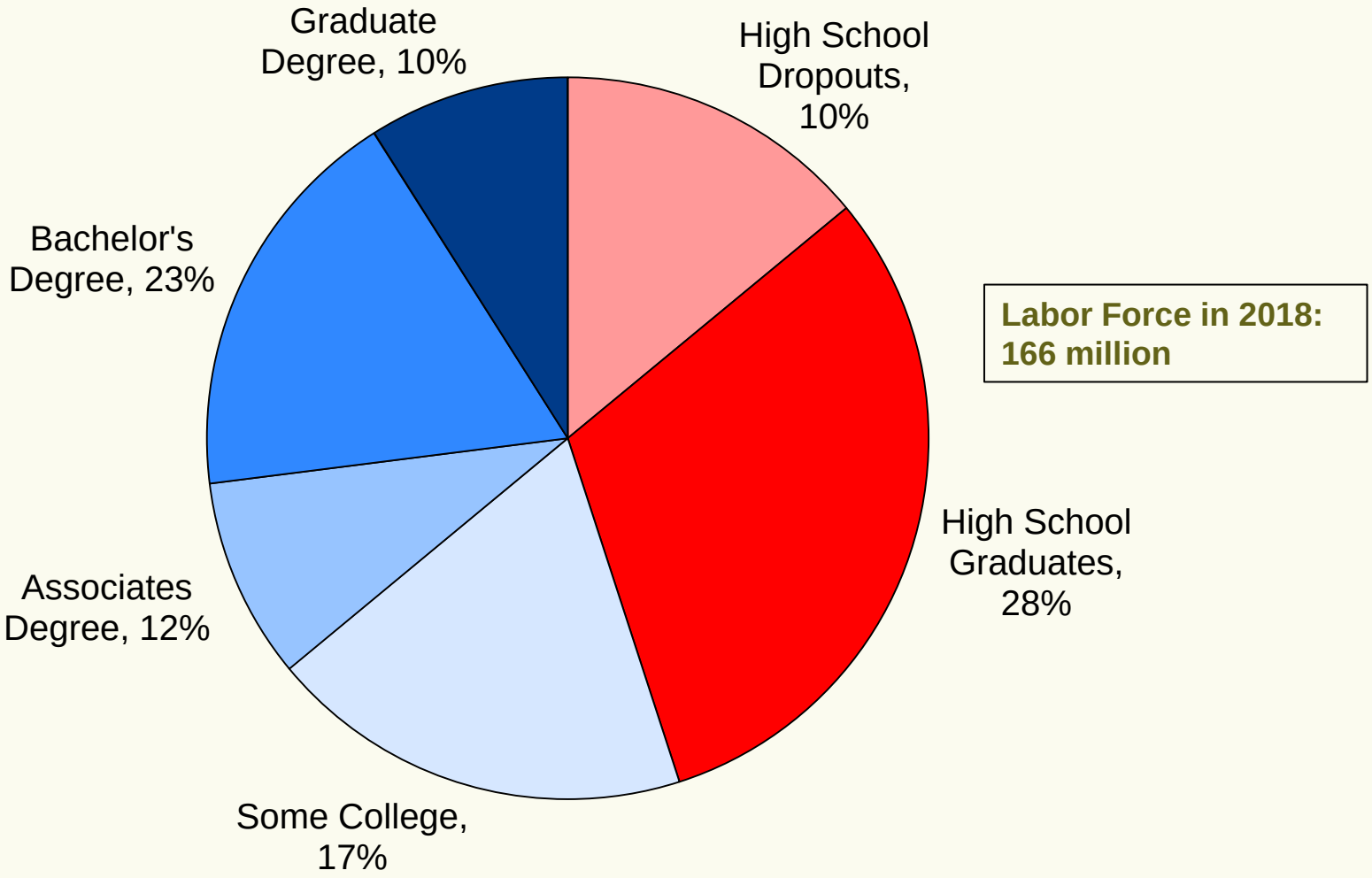
Source: U.S. Census Bureau, CPS, 2009.

Jobs in the last 4 decades increasingly have required postsecondary education



Source: Current Population Survey, Various years.

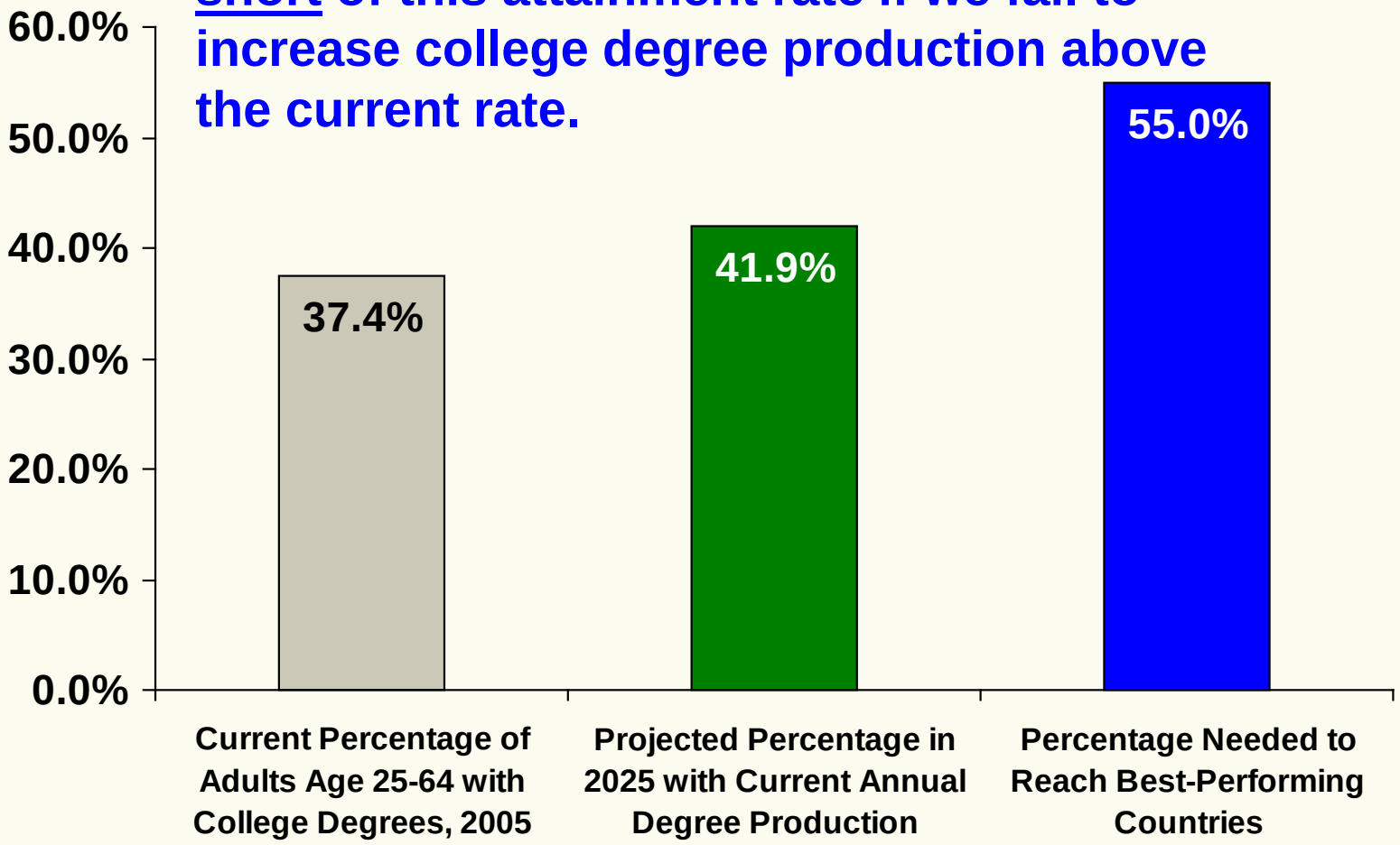
Education Demand of the U.S. labor force, 2018



Source: Anthony Carnevale, *Help Wanted: Projections of jobs and Education Requirements Through 2018*, June 2010, p. 14.

To match leading nations 55% of U.S. adults must attain some college degree by 2025, but…

By 2025, the U.S. will fall <u>16 million degrees short</u> of this attainment rate if we fail to increase college degree production above the current rate.



Source: National Center for Higher Education Management Systems (2007). Adding It Up. Boulder: NCHEMS.

So, how can the U.S. reach and sustain international competitiveness?

The United States must:

Continue to attract talent from abroad → **7 million more degrees by 2025**

Increase degree production → **16 million more degrees by 2025**

How can the U.S. generate 16 million additional degrees by 2025?

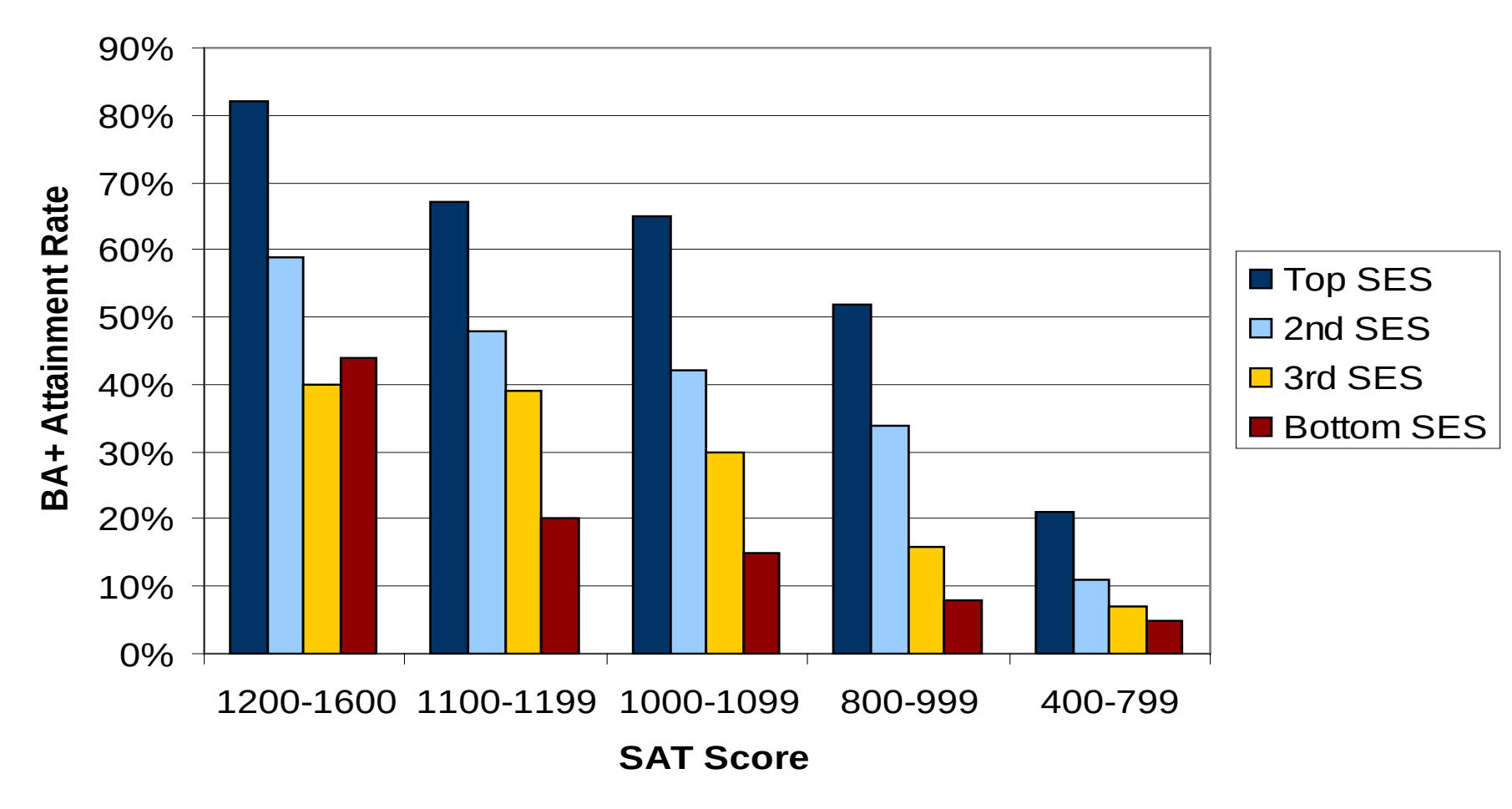
1.3 million degrees	Added through projected **population growth**
4.3 million degrees	Resulting from increasing **high school graduation rates**, **college-going rates** of recent high school graduates, and **postsecondary graduation rates**
4.2 million degrees	Added by having half of the 8.4 million **young U.S. adults (aged 25-34) with some college** complete a degree
2.6 million degrees	Added by having a third of the 8.8 million **slightly older U.S. adults (aged 35-44) with some college** complete a degree
3.4 million degrees	Added by having fifteen percent of the 22.7 million **adults (aged 25-44) who have completed high school, but not attended college**, complete a degree

College participation by socioeconomic status

College Participation By Achievement Test and Socioeconomic Status Quartile		SES Quartile	
		Lowest	Highest
Achievement Quartile	Highest	78%	97%
	Lowest	36%	77%

Source: *Access Denied*, Department of Education, February 2001.

Degree attainment by SAT scores and socioeconomic status



Source: Anthony Carnevale, *Liberal Education*, Fall 2008, p. 58.

Education Distribution Across Household Income Deciles (1970-2007)

1970

	Lower-Income Class (lower 3 deciles)	Middle-Income Class (middle 4 deciles)	Upper-Income Class (upper 3 deciles)
High School Dropouts	39%	46%	15%
High School Graduates	22%	60%	18%
Some college/Associate's Degree	19%	53%	28%
Bachelor's Degree	16%	47%	37%
Graduate Degree	13%	46%	41%

2007

	Lower-Income Class (lower 3 deciles)	Middle-Income Class (middle 4 deciles)	Upper-Income Class (upper 3 deciles)
High School Dropouts	59%	33%	7%
High School Graduates	35%	45%	19%
Some college/Associate's Degree	29%	45%	26%
Bachelor's Degree	14%	38%	48%
Graduate Degree	9%	30%	61%

Source: Anthony Carnevale, *Help Wanted: Projections of jobs and Education Requirements Through 2018*, June 2010, p. 3.

More degrees – *authentic degrees*

Quality assurance, assessing learning, institutional integrity

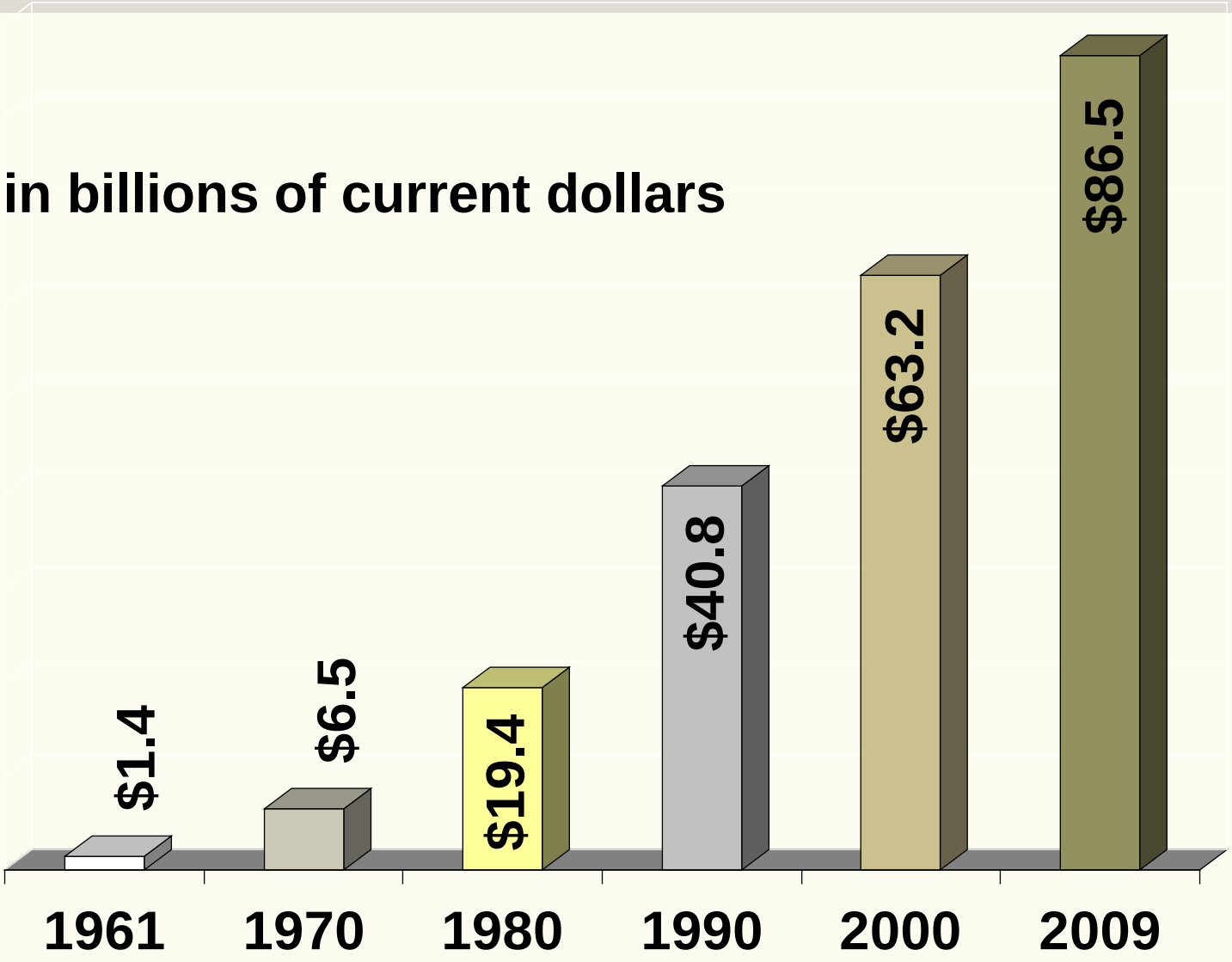
- **Qualifications frameworks, Bologna, tuning**
- **LEAP and VSA –accountability for learning**
- **Accreditors and states pressed to examine outcomes not simply inputs for Title IV eligibility**

The K-12 – Postsecondary Connection

Growing interdependence

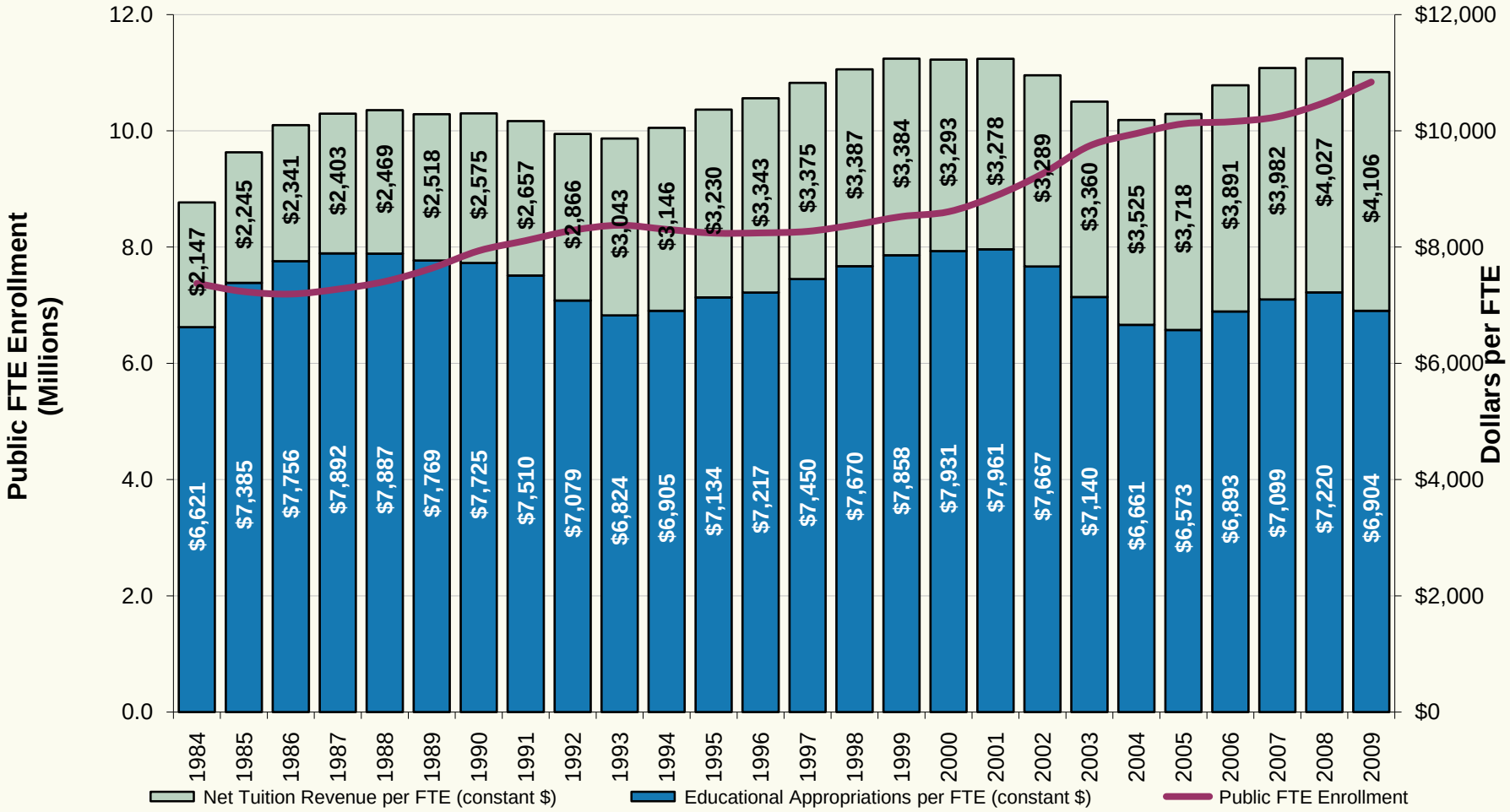
- **Common Core State Standards – Math and English**
- **Common Data Standards**
- **Increasing the Capacity of Teachers and School Leaders**

State and local support for higher education



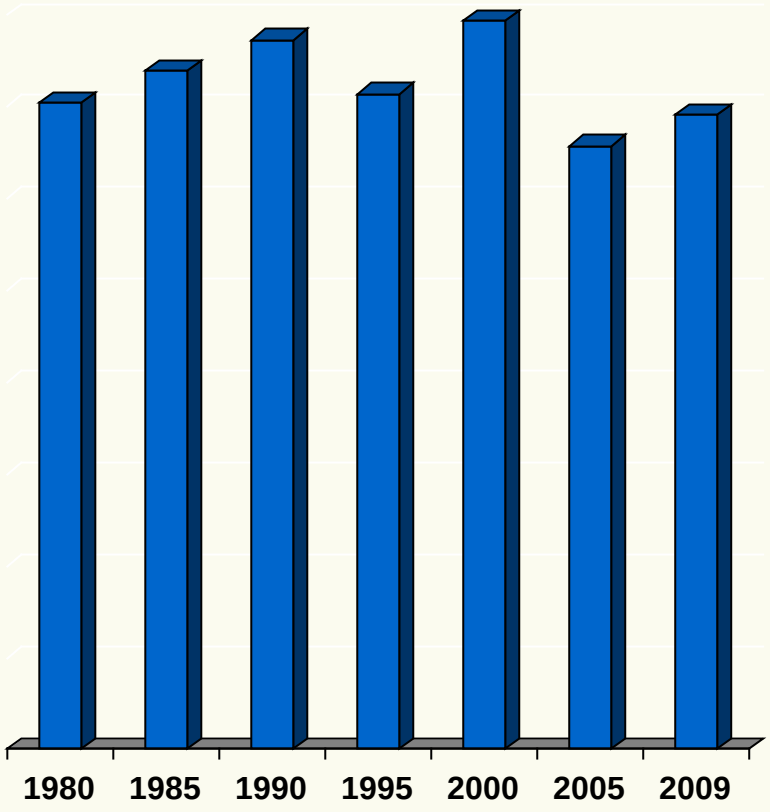
Source: SHEEO, SHEF FY2009. FY2009 includes ARRA funds.

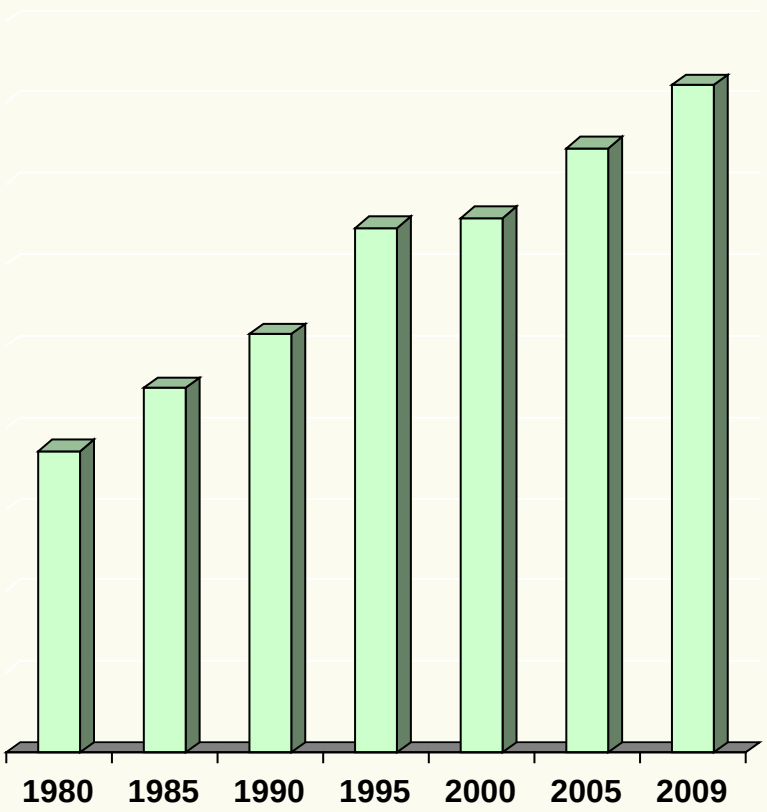
Total FTE enrollment and total educational revenue per FTE – Public Sector



Note: Constant 2009 dollars adjusted by SHEEO Higher Education Cost Adjustment. 2009 Educational Appropriations include ARRA funds. (HECA) **Source:** SSDB

Change over time – state and local support compared to tuition and fees (per FTE)





Source: SHEEO, SHEF FY2009 [State and local support for public institution includes ARRA funds (for 2009) and excludes appropriations for research, agriculture, and medical.]

Recessions have both immediate and lasting impacts on higher education

Reduced revenue and enrollment gains

↓

State and local funding does not keep up or catch up with enrollment demand

↓

Tuition and fees increase rapidly to fill the gaps and because demand is high

↓

Costs shift to students, public engagement and commitment declines, sense of “privatization” grows

Current Outlook – imminent cutbacks, uncertain recovery

- Most states face serious budget shortfalls (Center on Budget and Policy Priorities at www.cbpp.org)
- Most states cutting current spending and draining all reserves
- Continued downturn and tighter budgets expected for next 2-5 years
- Higher education typically cut more than other areas of state budgets

American Recovery and Reinvestment Act

$787 billion
($100+ billion for education/training/R&D)

Select items impacting higher education…

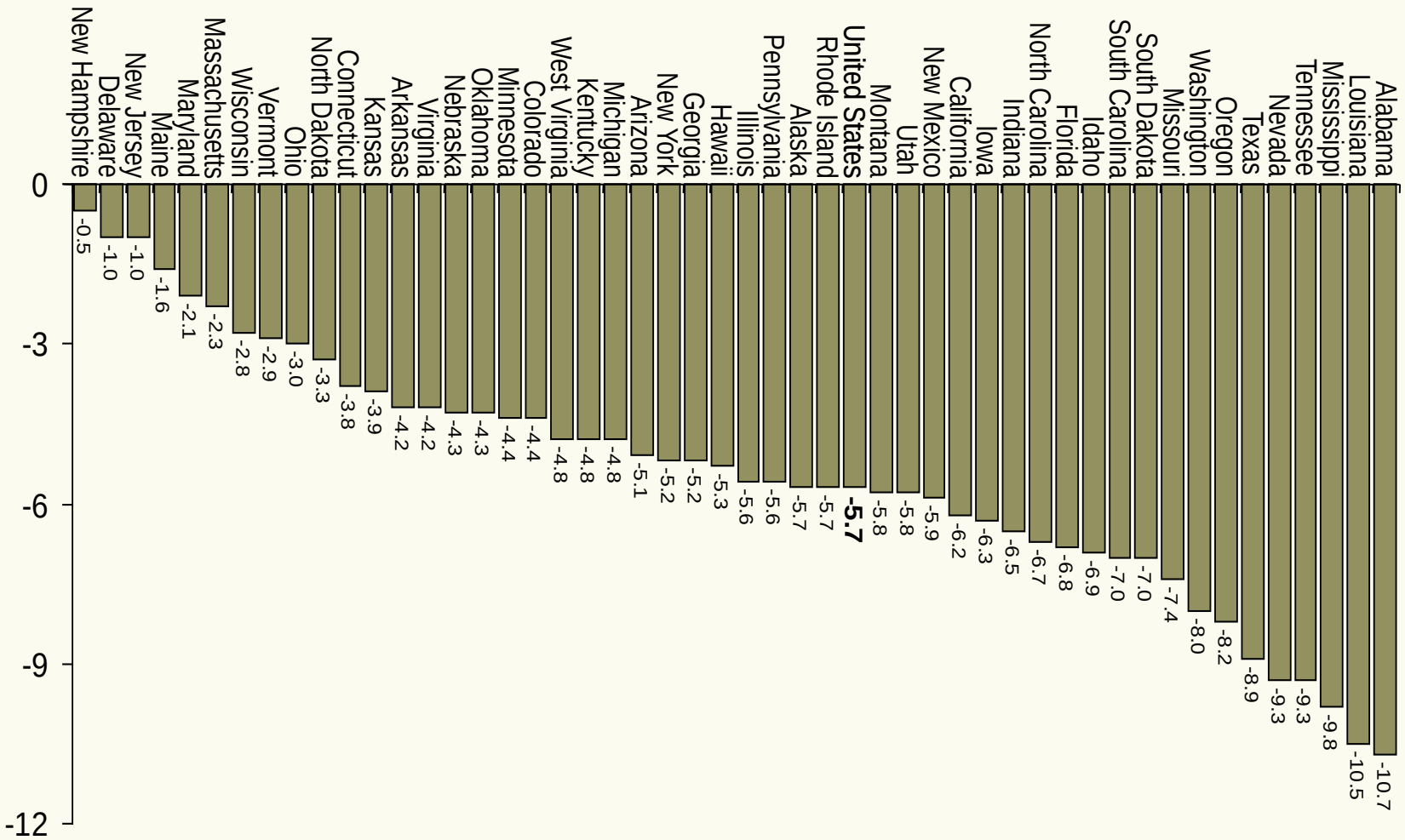
- State Fiscal Stabilization Fund
- Student financial assistance
- WIA programs
- State longitudinal data systems
- Research and development

Tourniquet, not a transfusion

State stabilization funds have helped us:

- Buy time
- Manage a short-term crisis
- Build a foundation for dealing with some fundamental problems

Projected state and local budget deficits as a percent of revenues, 2013

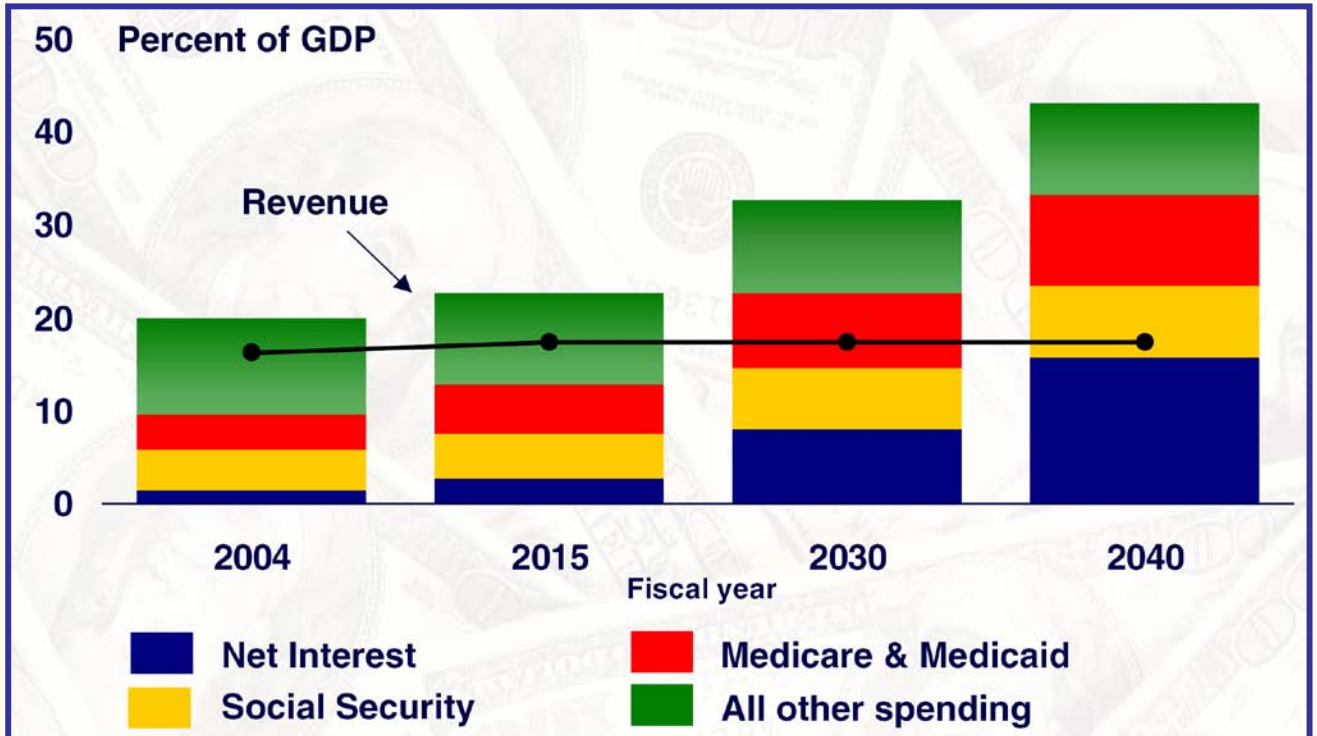


Source: NCHEMS; Don Boyd (Rockefeller Institute of Government), 2005.

Federal Budget – Comptroller General

Composition of Spending as a Share of GDP

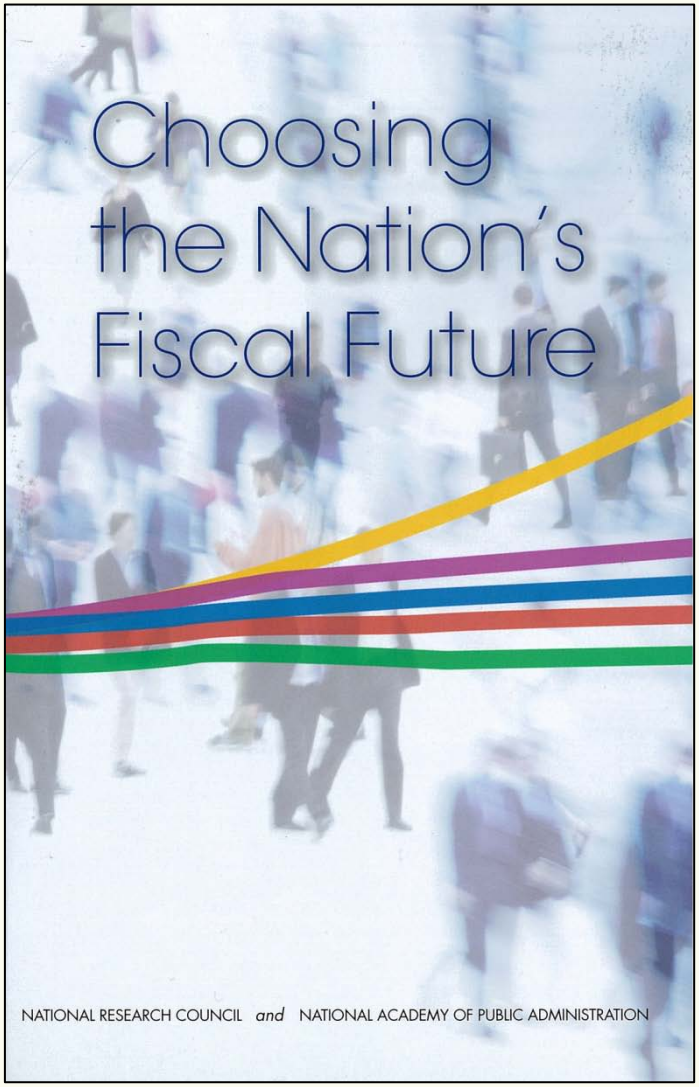
Assuming Discretionary Spending Grows with GDP after 2005 and All Expiring Tax Provisions are Extended



Notes: Although expiring tax provisions are extended, revenue as a share of GDP increases through 2015 due to (1) real bracket creep, (2) more taxpayers becoming subject to the AMT, and (3) increased revenue from tax-deferred retirement accounts. After 2015, revenue as a share of GDP is held constant.

Source: GAO's August 2005 analysis.

National Academy of Public Administration



College Costs

Data and public perception:

- U.S. spending on Higher Education is over $22,000 / FTE – twice the OECD average (Wellman study for Spellings Commission)
- Public 4-year tuition and fees rose 51% faster than inflation (CPI) from 1995 to 2005 (Spellings Commission citing College Board Study)

Three wrong ideas…

- There is a “right amount;” we can create the perfect formula.
- The only way to get improved performance is to spend more money.
- We can get the results we need without spending more money.

Three “right” questions…

- What does the public need from higher education?
- What can higher education do better with the money we have now?
- Where can strategic investments help us get the results we need?

College Costs

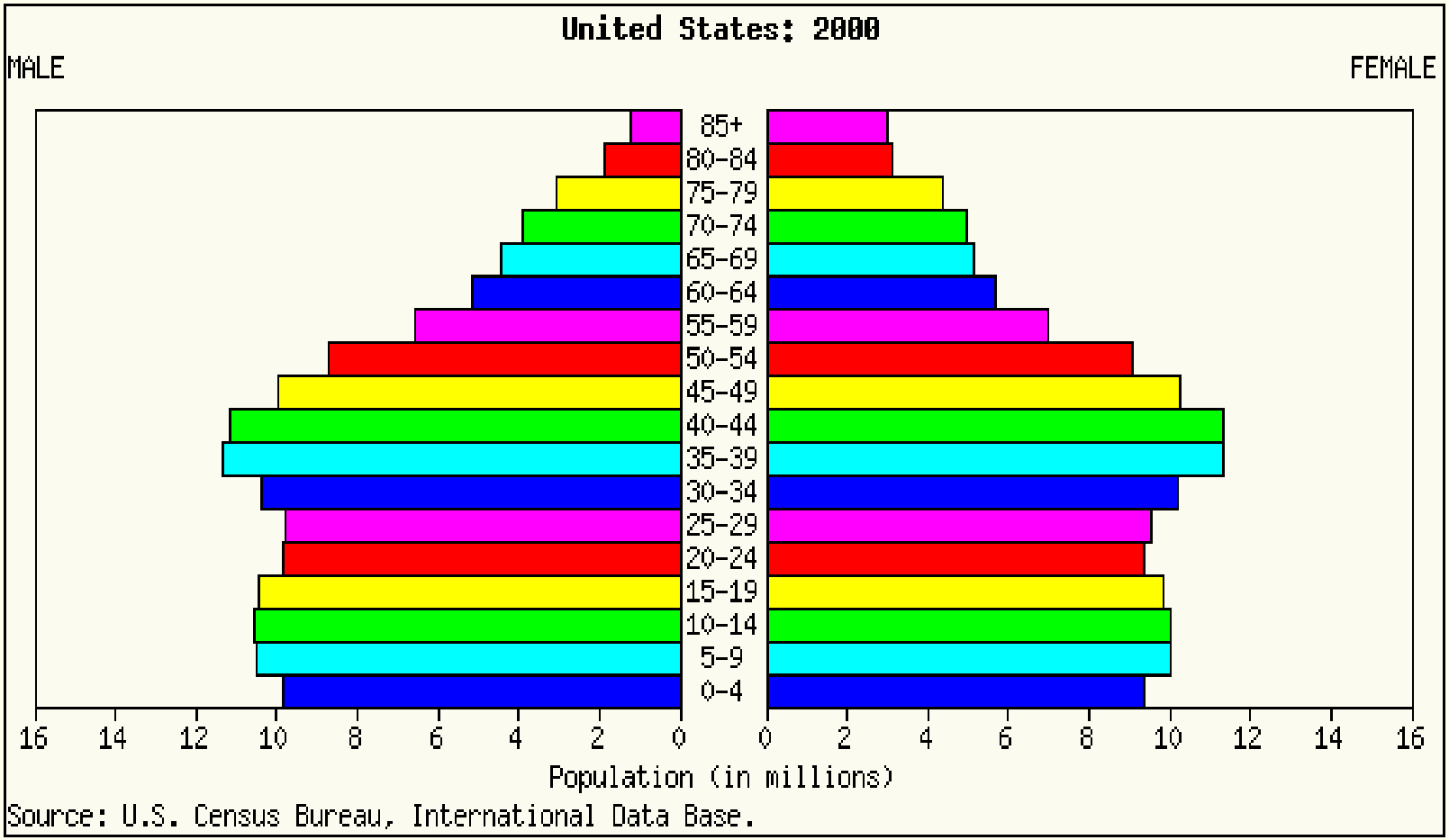
What should we do?

- Accept responsibility for productivity gains
- Show commitment and capacity for increasing attainment
  - Increase degree completion
  - Help strengthen K-12
- Show where more money adds value

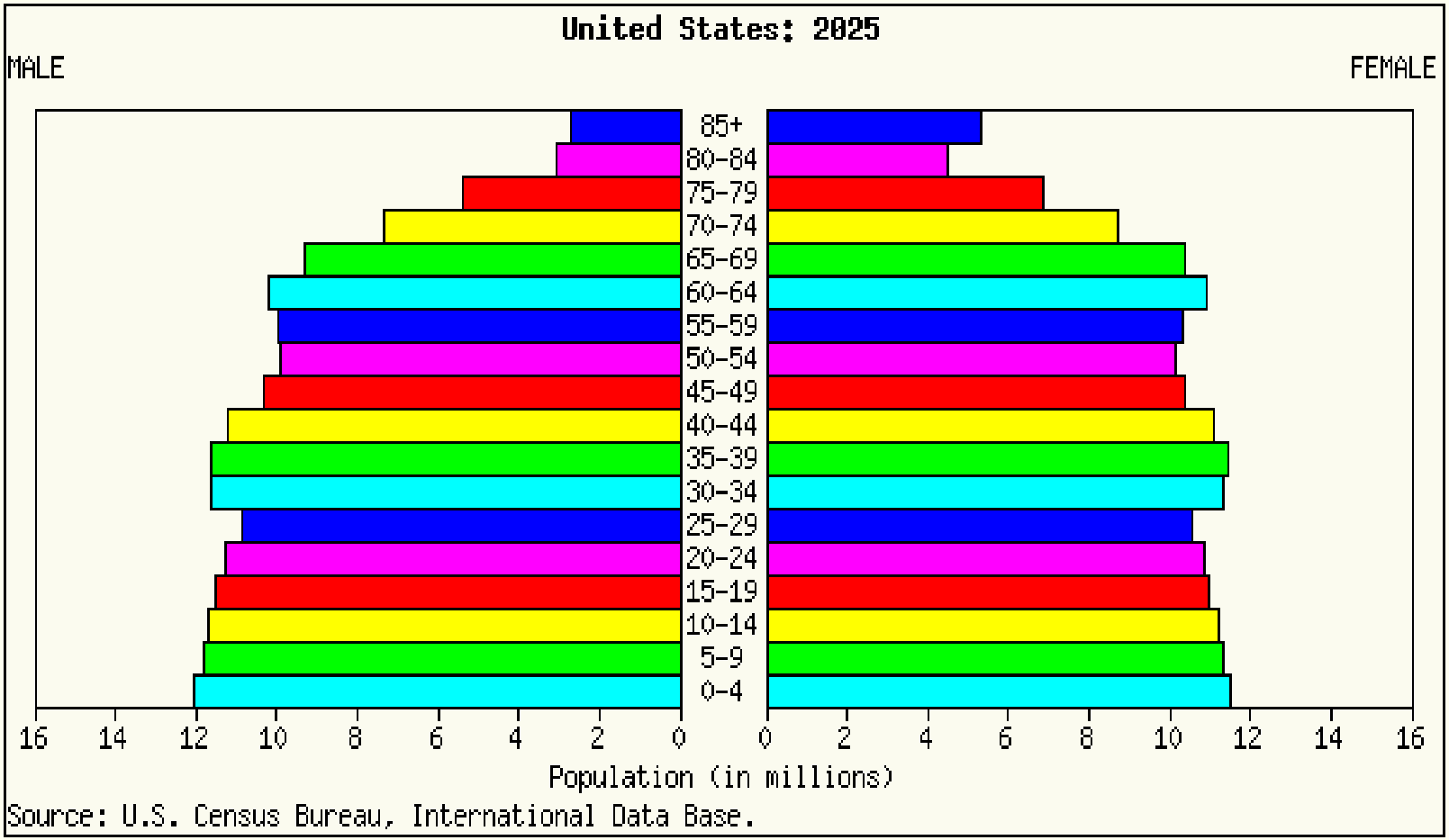
World population increase over time

2050
9 billion people

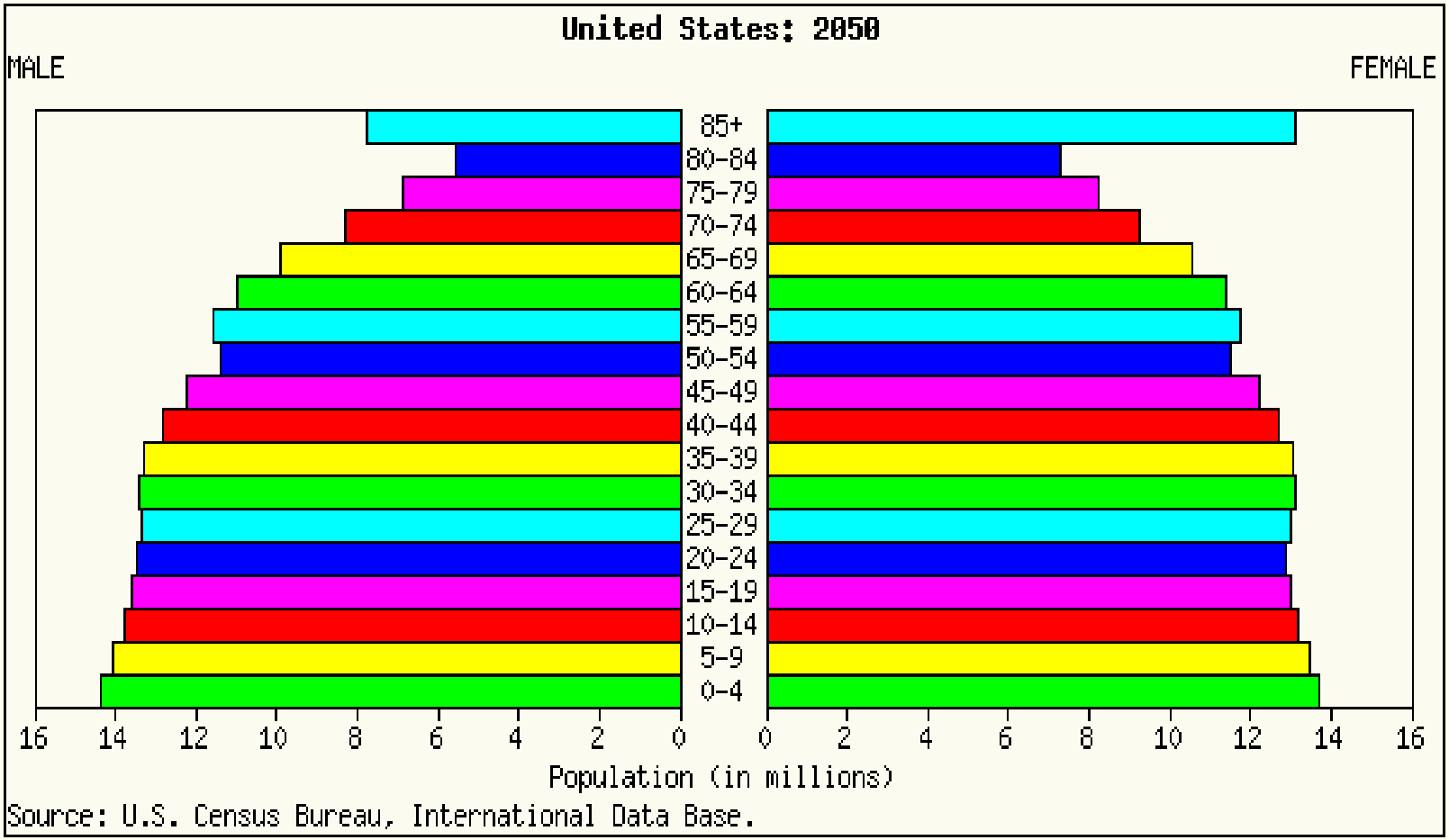
U.S. population 2000 – 282 million



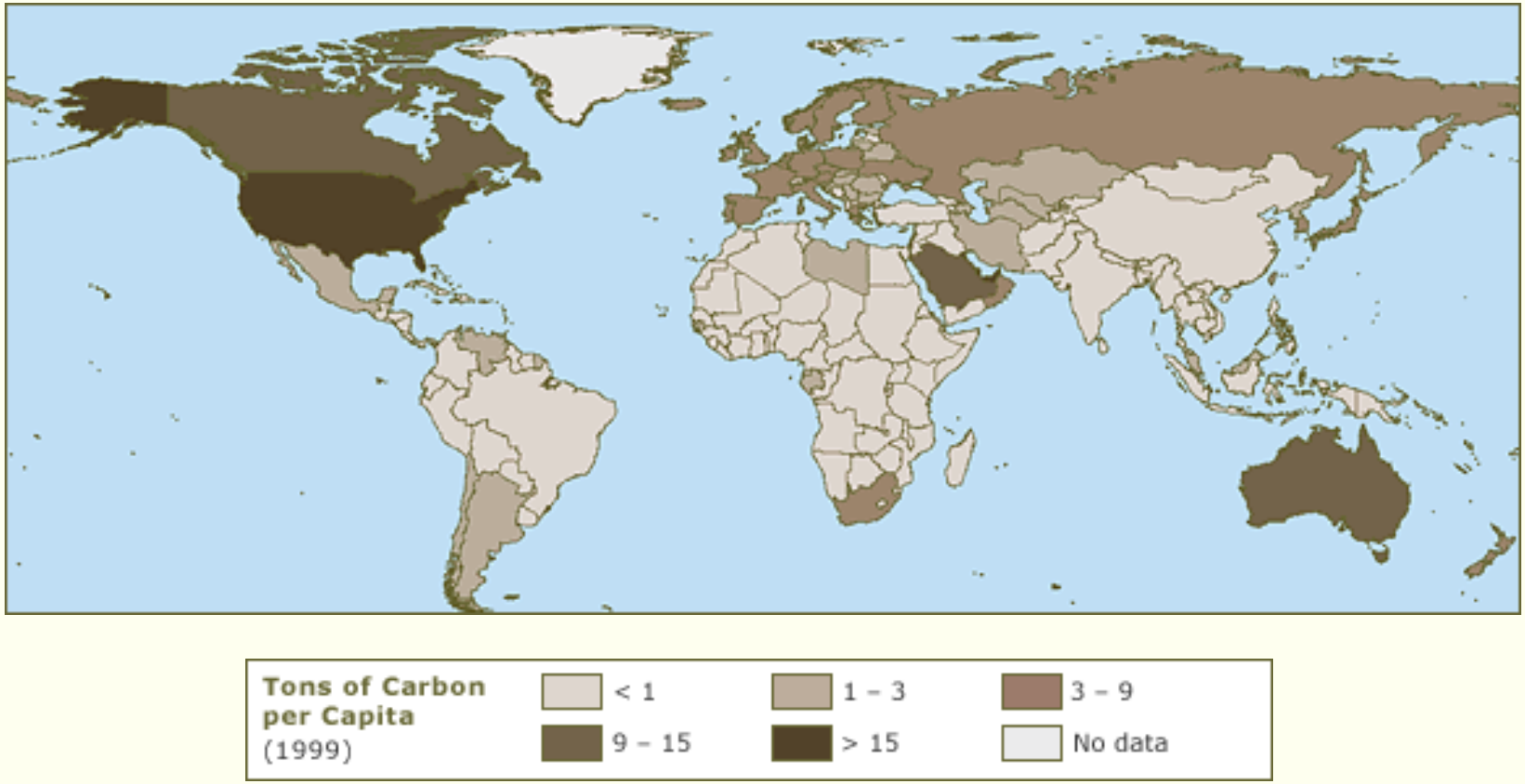
U.S. population 2025 – 350 million



U.S. population 2050 – 420 million



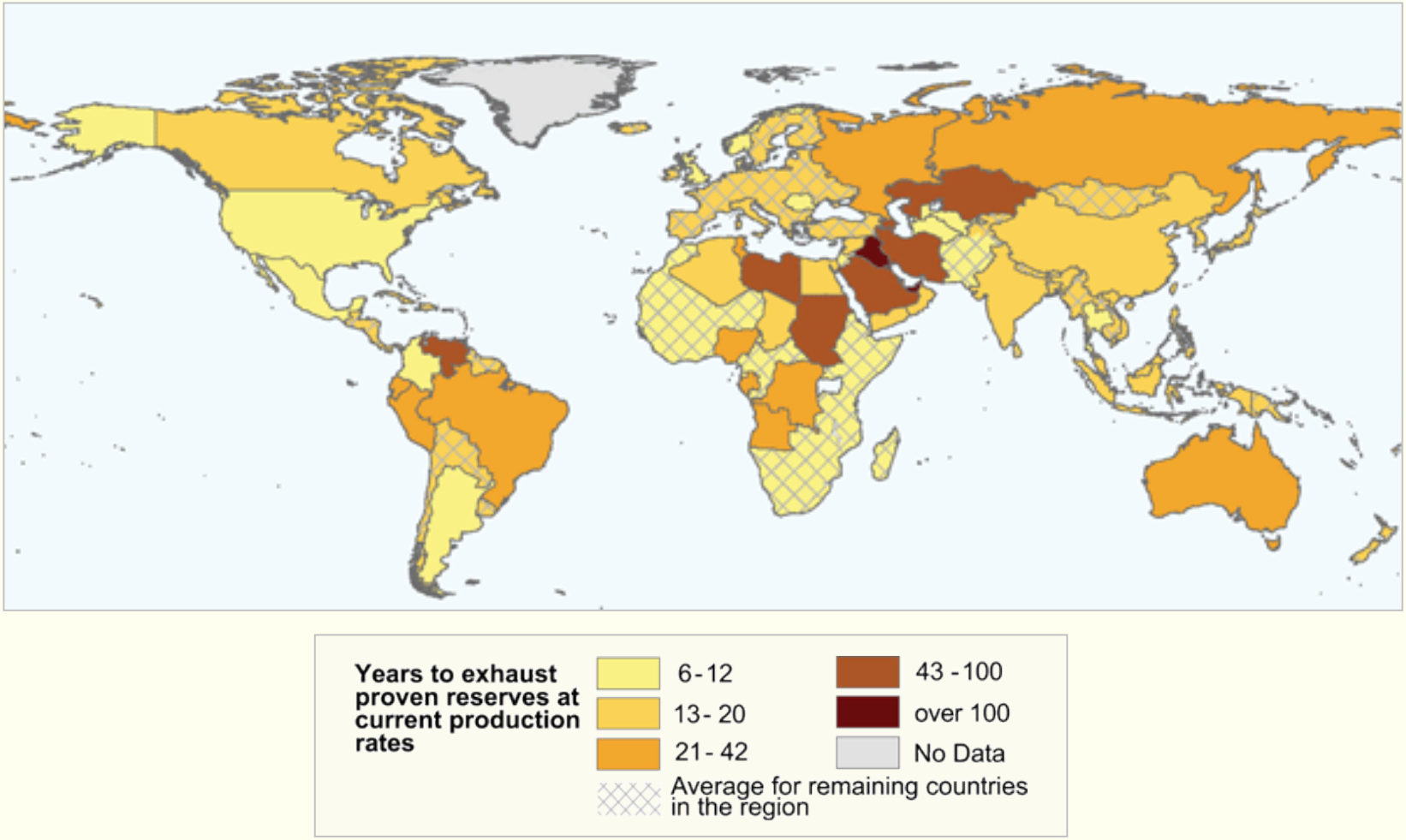
Carbon emissions per capita



Sources:

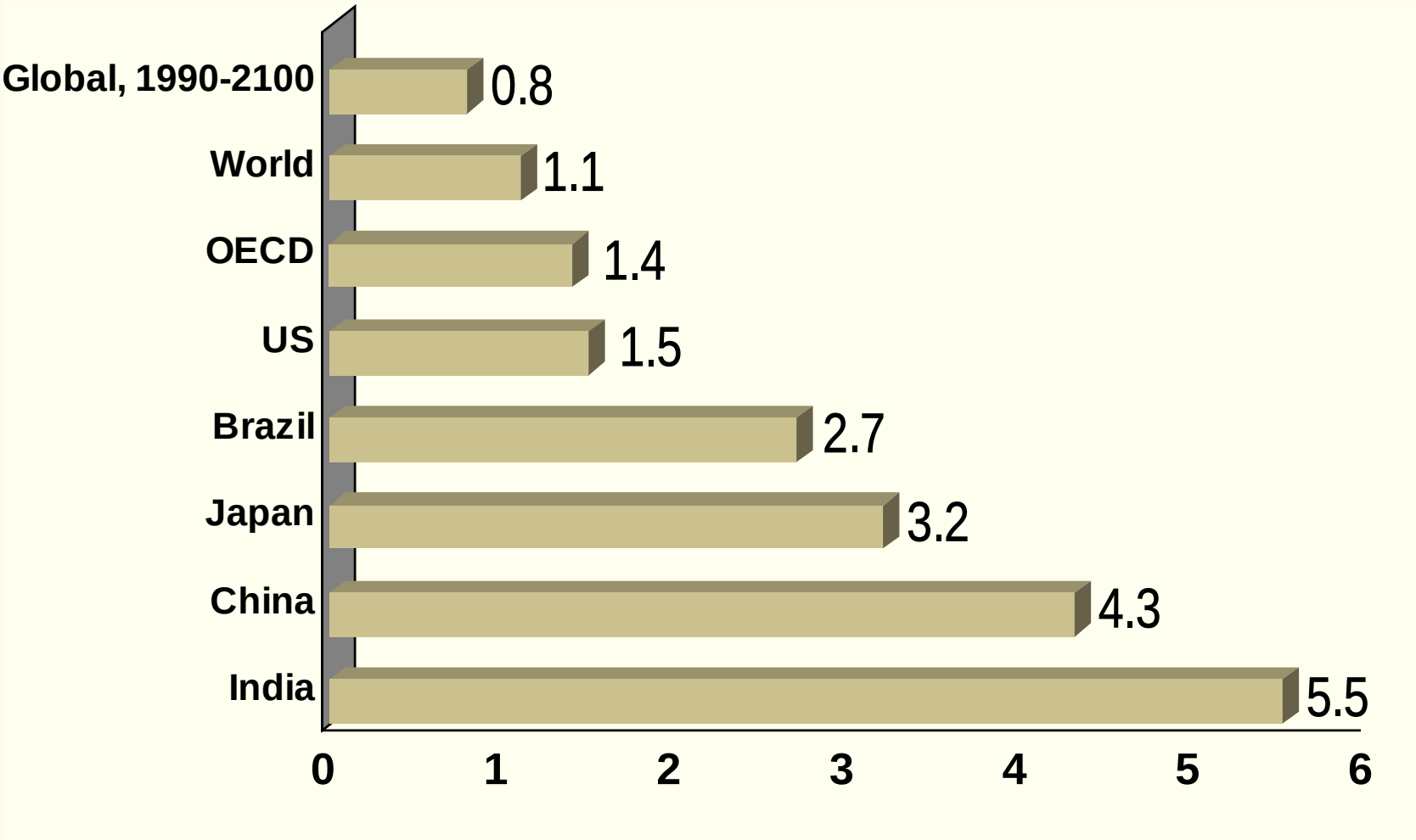
- Environmental Systems Research Institute. 1996, World Countries 1995. Redlands, CA:ESRI.Country names and disputed territories updated by WRI, 1999.
- DOE (U.S. Department of Energy). 2001, International Energy Annual 1999. Washington, DC:DOE, Energy Information Administration.

Oil supply/consumption



Sources: BP p.l.c.. 2005, Statistical Review of World Energy. London:BP p.l.c.

Recent Annual Energy Growth Rates (1987-1996)



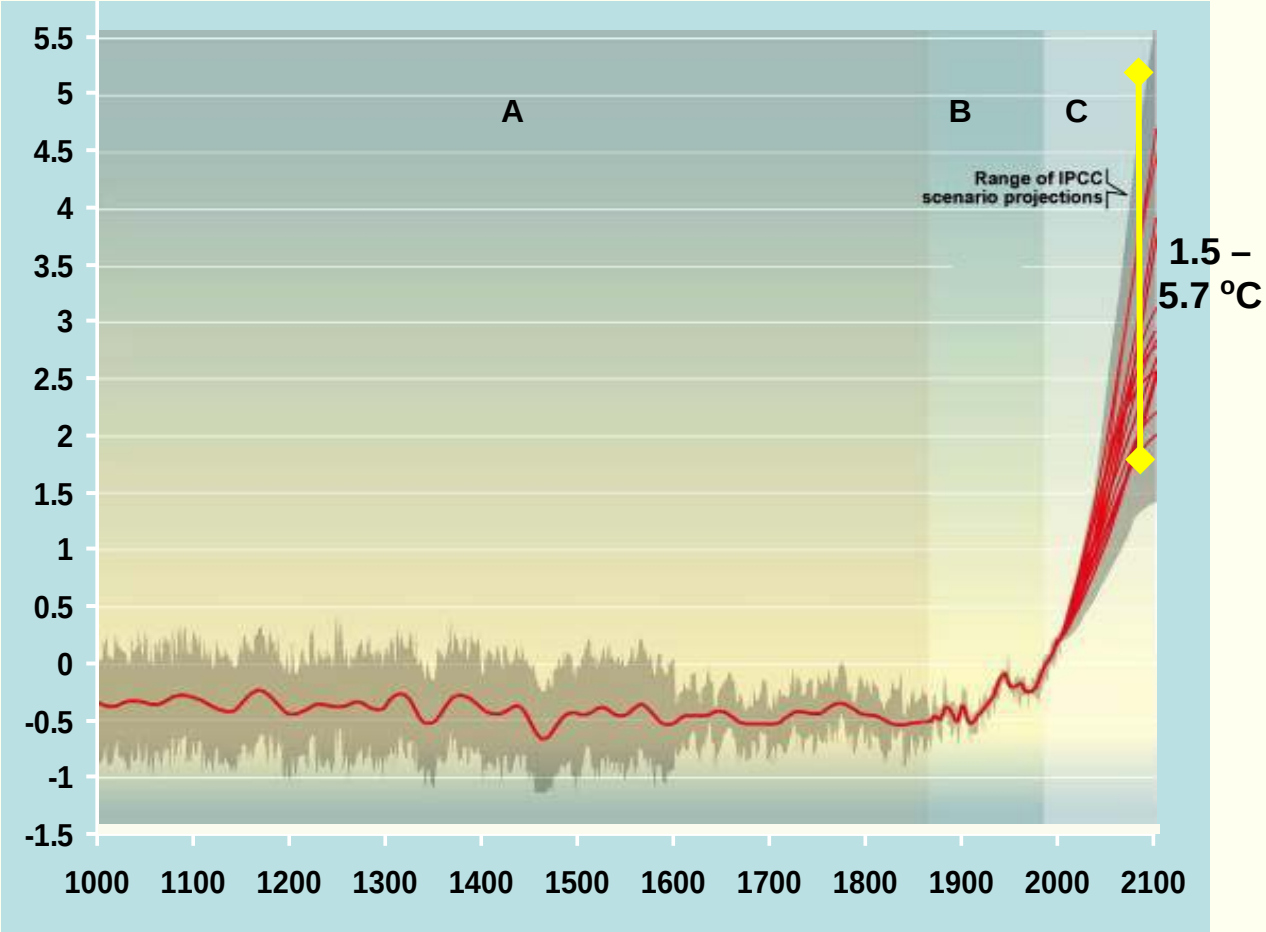
Earth's temperature rapidly rising

Temperature Change (°C) from 1990

A: Observations, Northern Hemisphere, Proxy data

B: Global Instrumental Observations

C: IPCC 2001 Scenario Projections (SRES)



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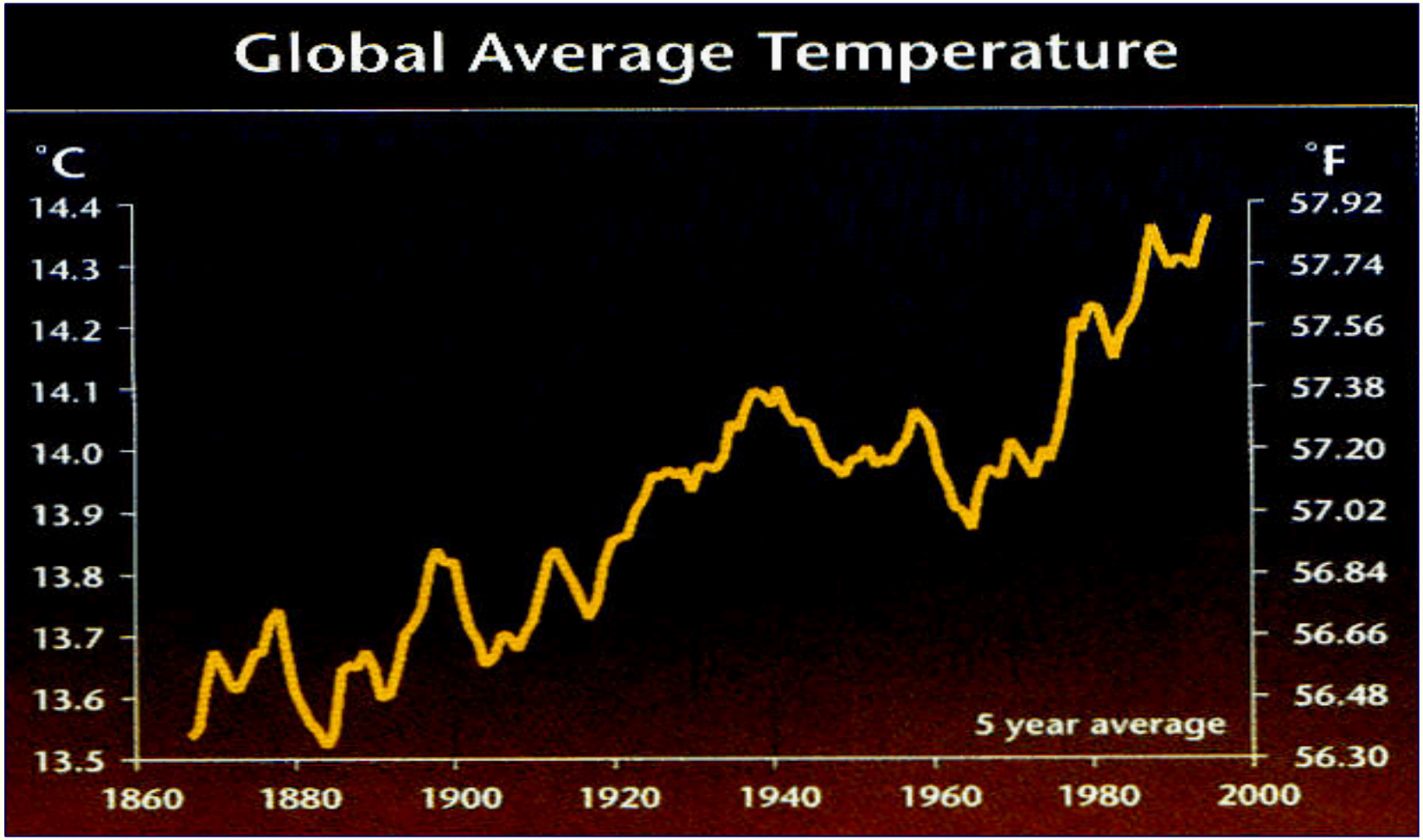


Responsibilities of higher education

- **Lead on R & D to promote and enable**
  - Greater energy efficiency and resource conservation
  - Expanded use of renewable energy resources
  - Responsible social policies

- **Model responsible design and energy management**

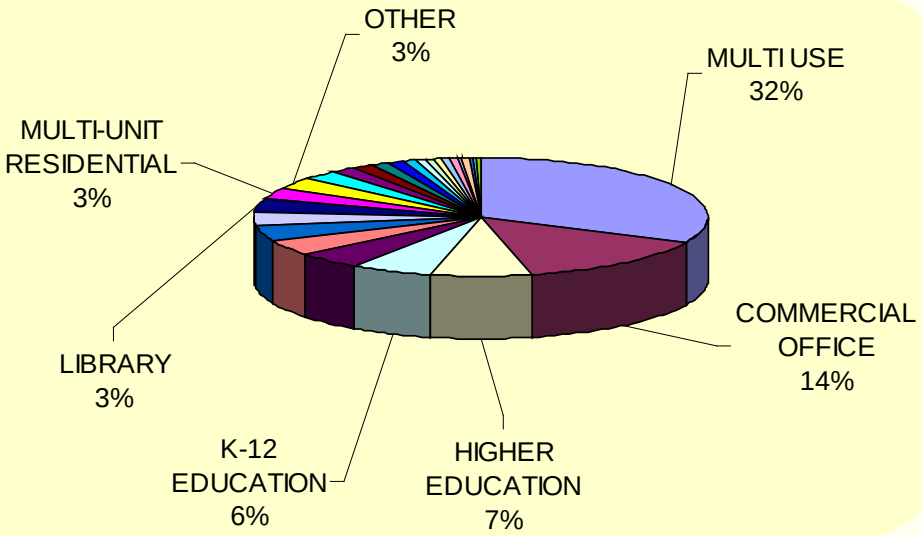
U.S. Green Building Council Standards

Leadership in Energy and Environmental Design (LEED)

Purpose: to transform the building market by promoting sustainable pro-environmental design and standardized building practices that will in turn raise consumer awareness on the benefits of "green" buildings.

New construction market transformation:

Registered buildings by type as of 10/2005



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SHEEO, the national association of state-wide higher education executives, focuses on public policy for higher education in the U.S. It was founded in 1954.