

# Higher Education as a Stimulus Package

*A Report to the Missouri Senate*

**By Michael T. Nietzel  
President, Missouri State University  
January 22, 2009**




# Higher Education is a Major Economic Stimulus Package

- National in scope
- A world-wide reputation as best in class
- Less additional revenue required than other stimulus approaches
- A comprehensive system of oversight, accountability, and regulation
- A proven track record of long-term success

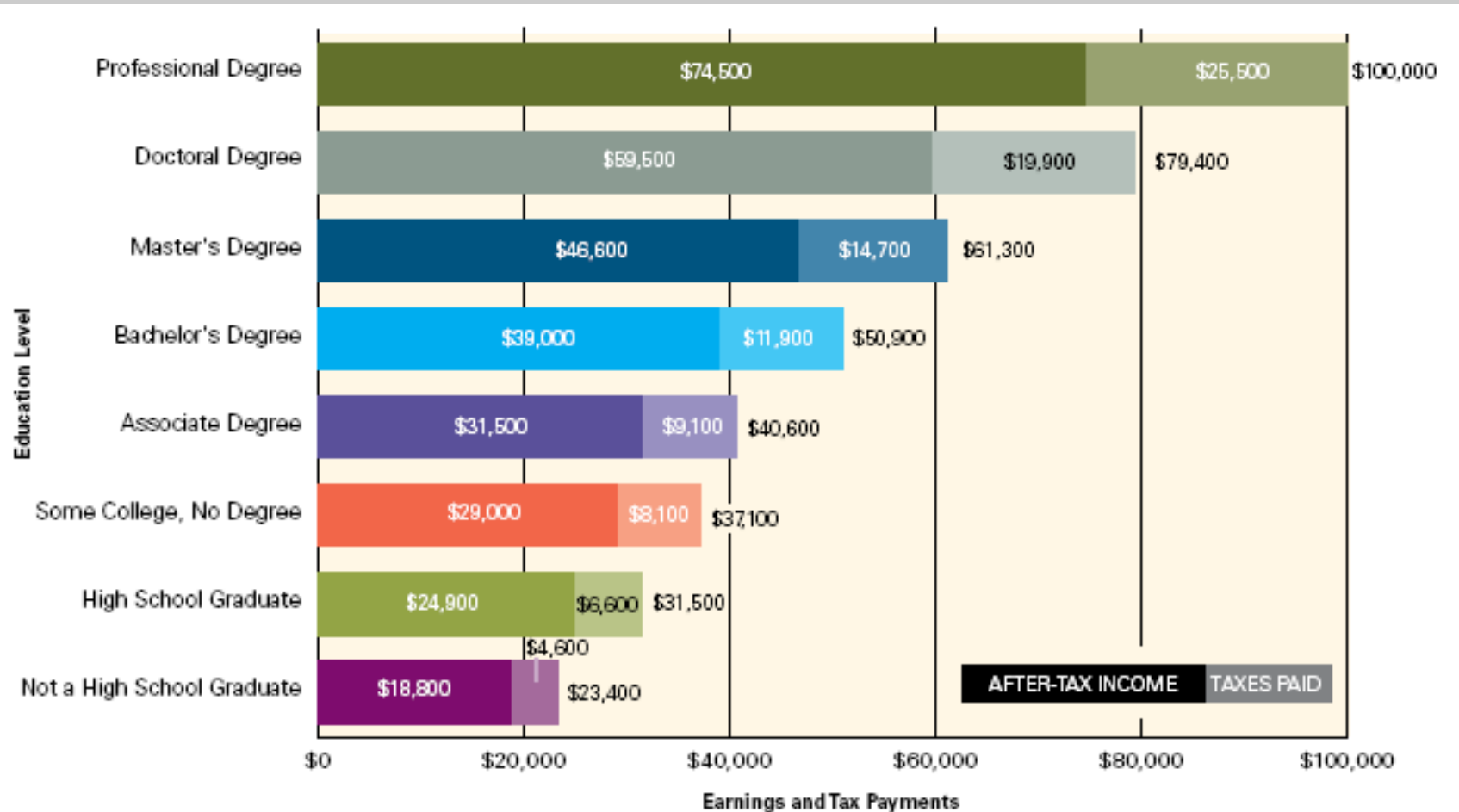
# **What Outcomes Stimulate the Economy?**

- 1. Increase in personal income and public revenue**
- 2. Decreased unemployment**
- 3. Reduced healthcare costs**
- 4. Lowered rates of social dependency**
- 5. Greater private investment and community involvement**
- 6. New businesses to create more jobs**



**Higher education is  
the one intervention with  
demonstrated achievements  
in all six areas.**

# Median Earnings and Tax Payments of Full-Time Year-Round Workers Ages 25 and Older, by Education Level, 2005



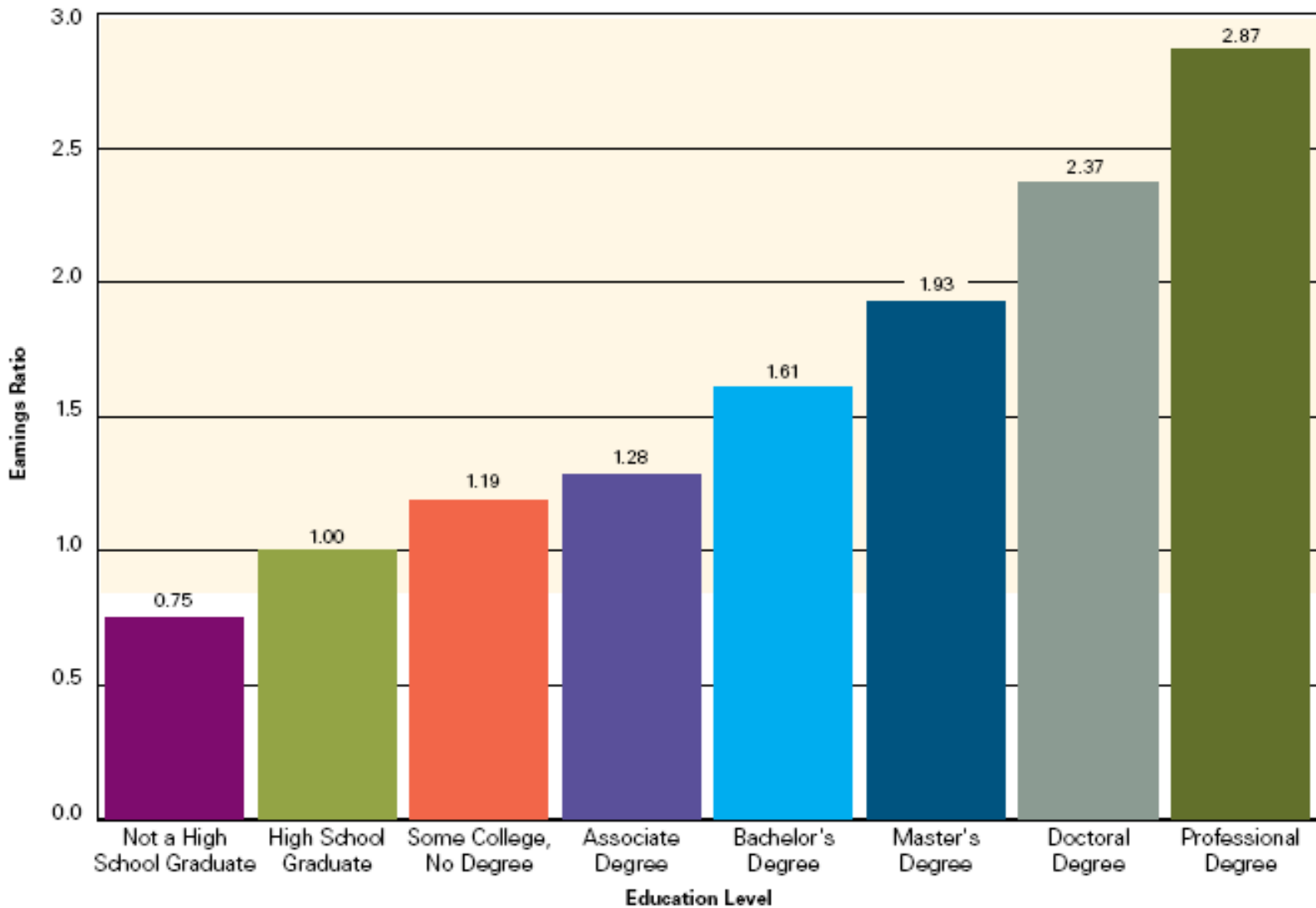
Note: Taxes paid include federal income, Social Security, and Medicare taxes, and state and local income, sales, and property taxes.

Sources: U.S. Census Bureau, 2006, PINC-03; Internal Revenue Service, 2006; McIntyre et al., 2003; calculations by the authors.

The bars in this graph show median earnings at each education level. The lighter segments represent the average federal, state, and local taxes paid at these income levels. The darker segments show after-tax income.

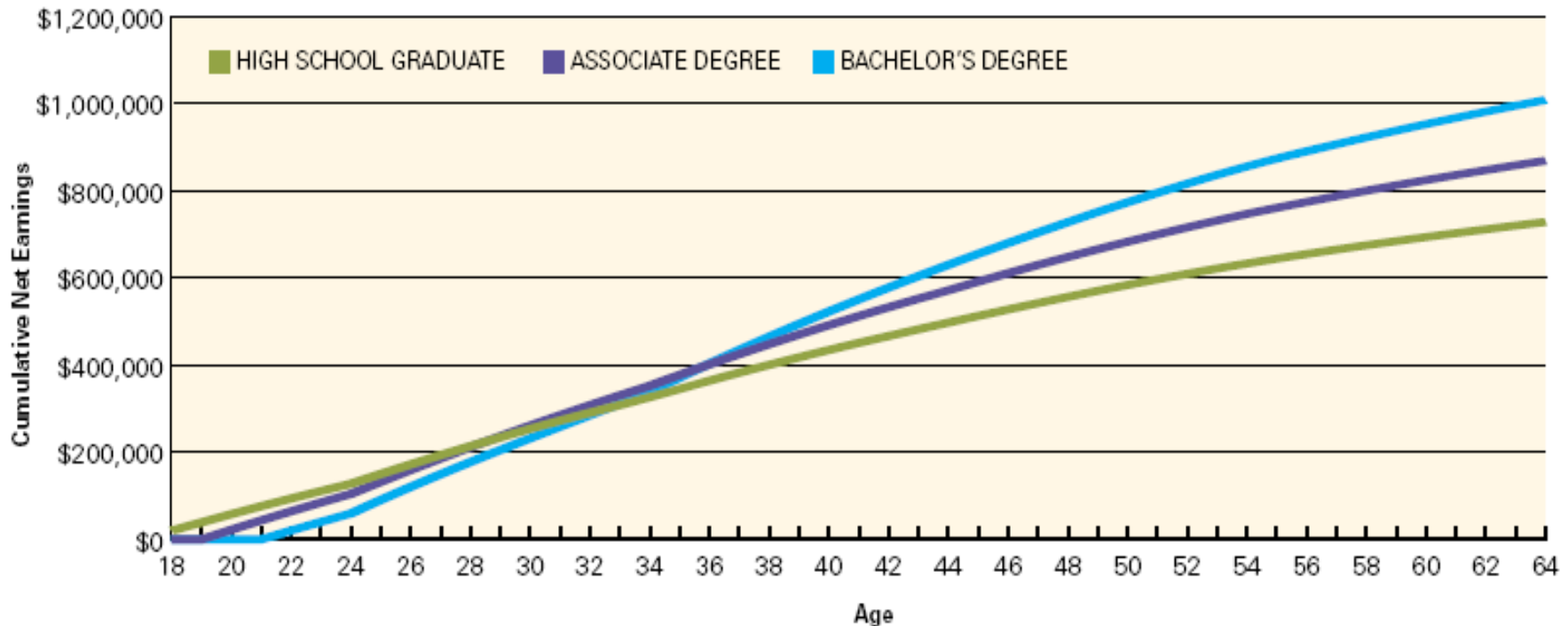
SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# Expected Lifetime Earnings Relative to High School Graduates, by Education Level



SOURCE: *Education Pays: The Benefits of Higher Education for Individuals and Society*; 2007

# Estimated Cumulative Earnings Net of Loan Repayment for Tuition and Fees, by Education Level



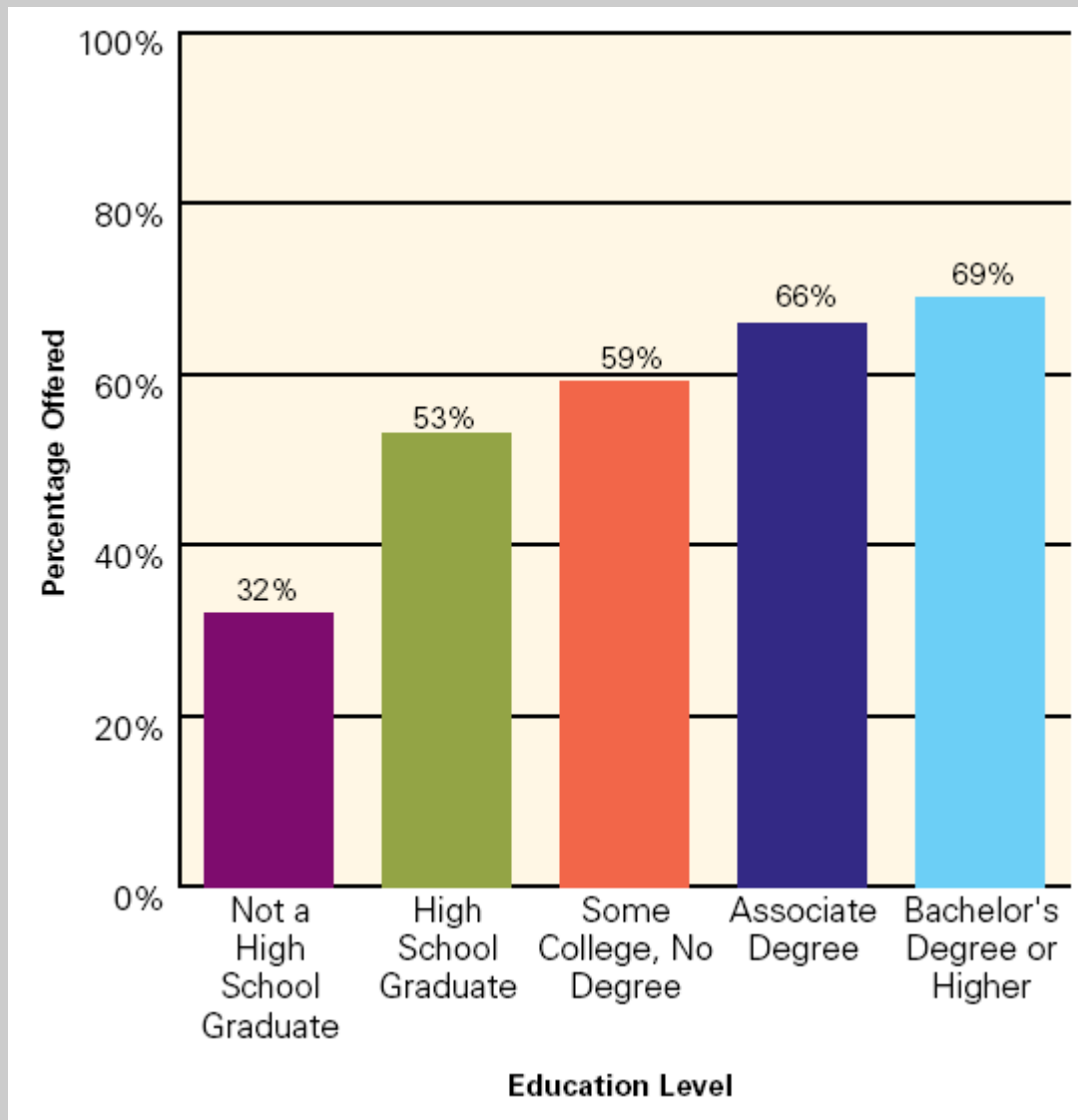
Sources: U.S. Census Bureau, 2006, PINC-03, PINC-04; The College Board, 2005; calculations by the authors.

*The green line shows the cumulative earnings at each age for the typical high school graduate who enters the workforce full-time at age 18.*

*The blue line shows the cumulative earnings at each age for the typical college graduate who enters the workforce at age 22, after spending four years out of the labor force and having borrowed to pay the full tuition and fees at the average public four-year college or university. Loan payments on this debt are subtracted from earnings for the first 10 years after graduation, covering both the principal and 6.8 percent interest charges incurred both during and after college.*

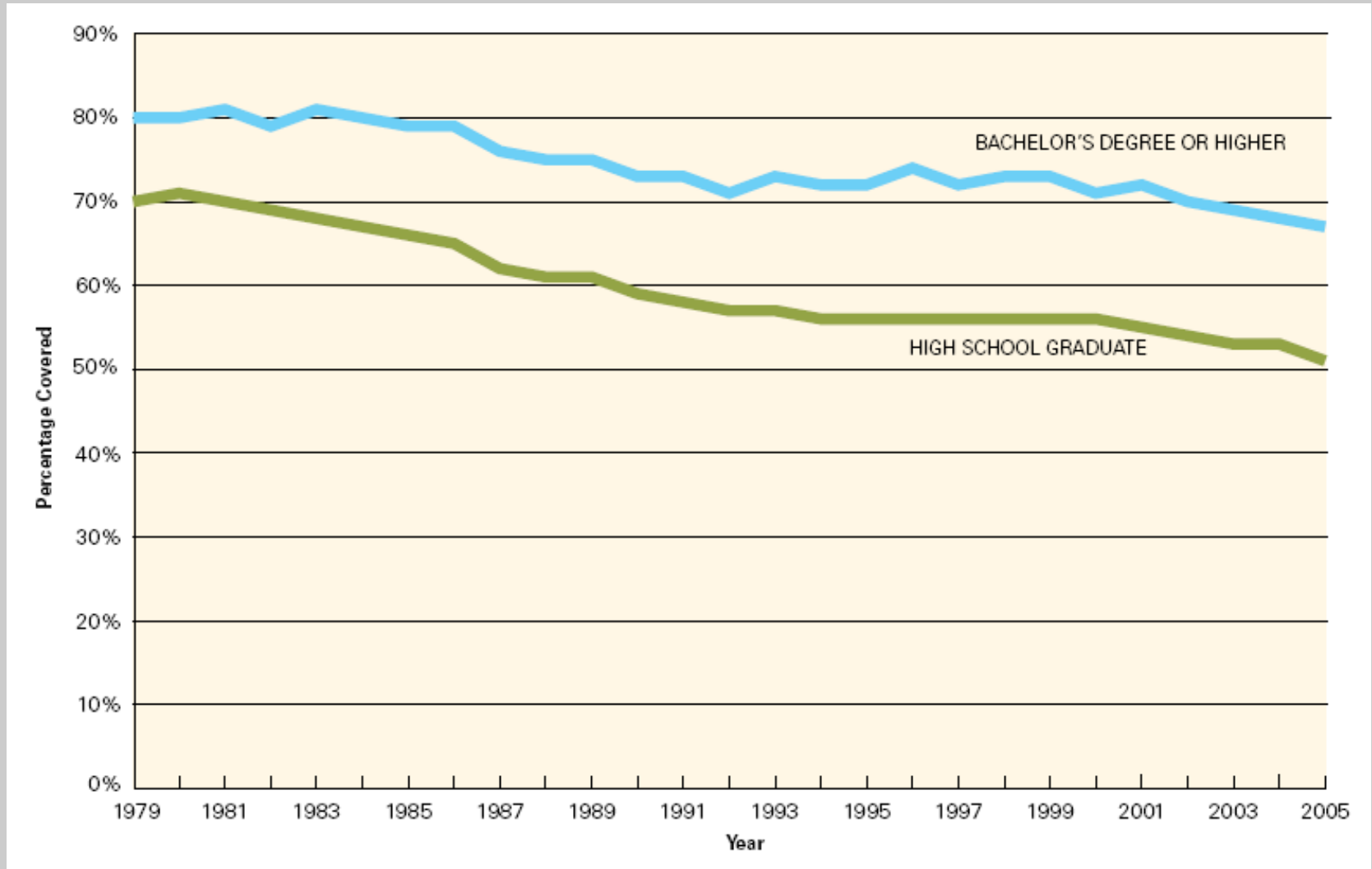
*The purple line shows the same calculation for a student who borrows to cover average tuition and fees at a public two-year college and enters the workforce at age 20.*

## Percentage of Full-Time Year-Round Workers Ages 25 and Older Who Were Offered Employer-Provided Pension Plans, by Education Level, 2005



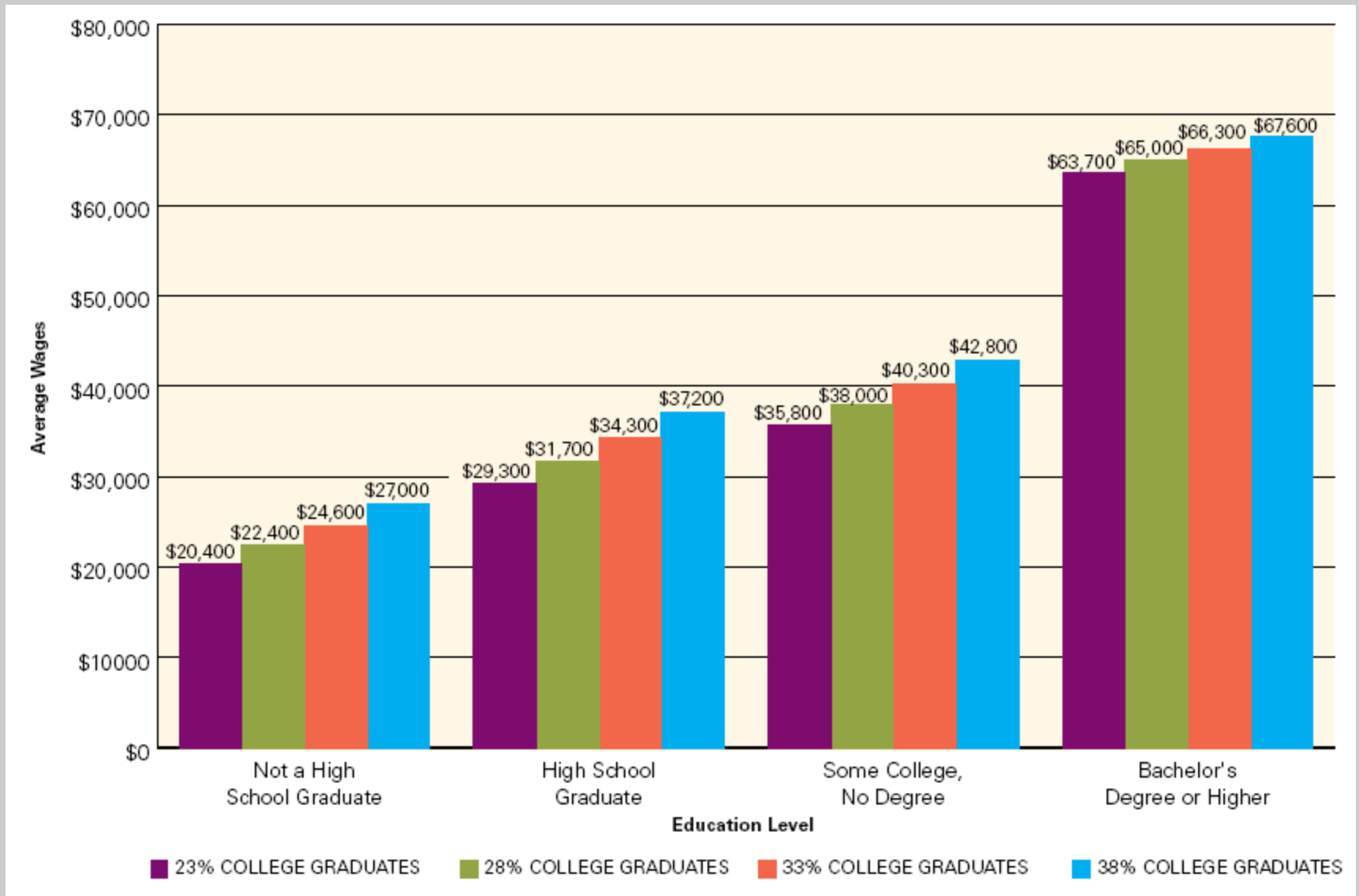
SOURCE: *Education Pays: The Benefits of Higher Education for Individuals and Society*; 2007

# Percentage of Private-Sector Workers Ages 18-64 Working at Least Half-Time Covered by Employer-Provided Health Insurance, by Education Level, 1979-2005



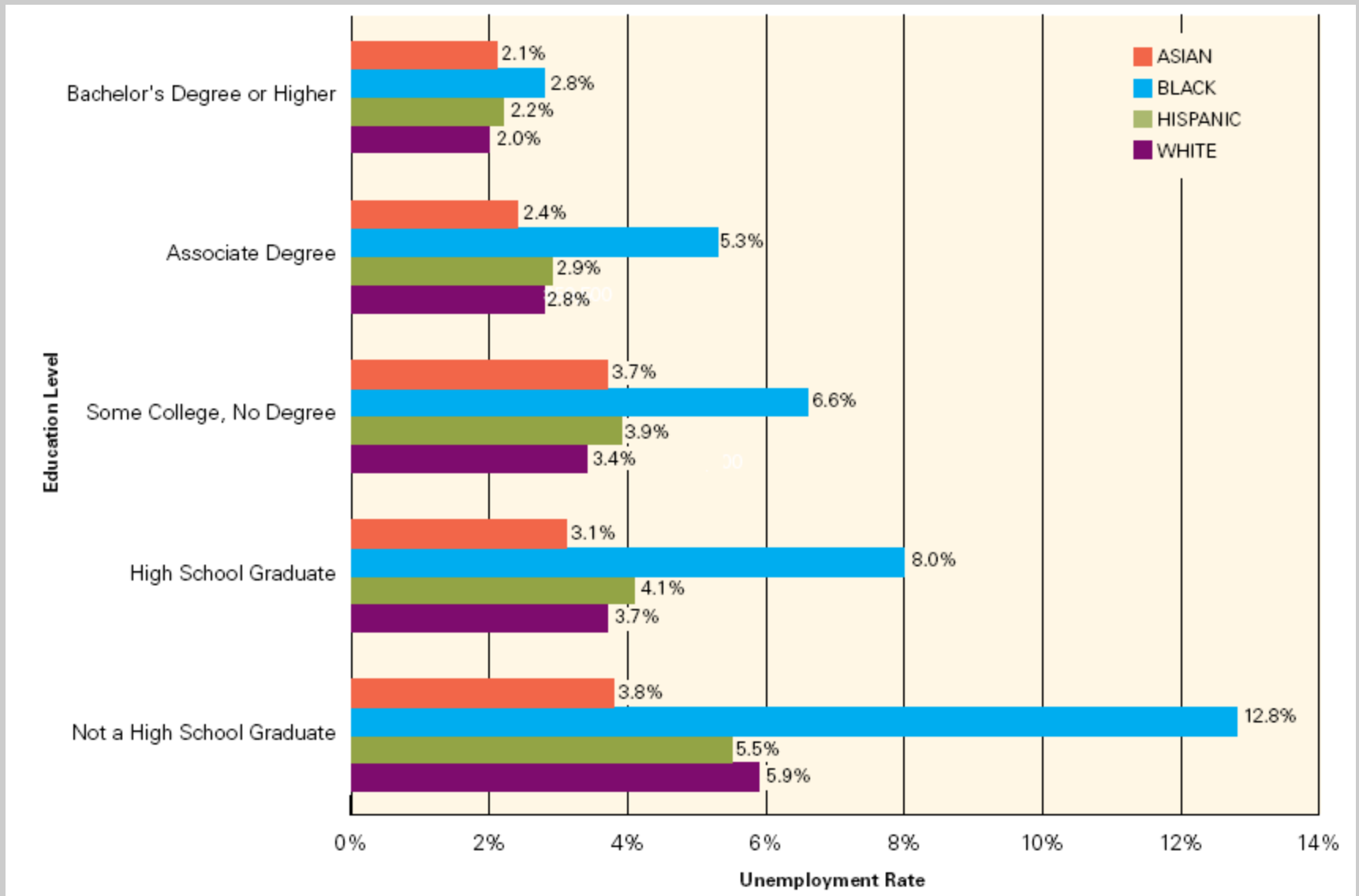
SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# The Impact of Increases in the Proportion of College Graduates in the Workforce on Wages of All Workers, by Education Level



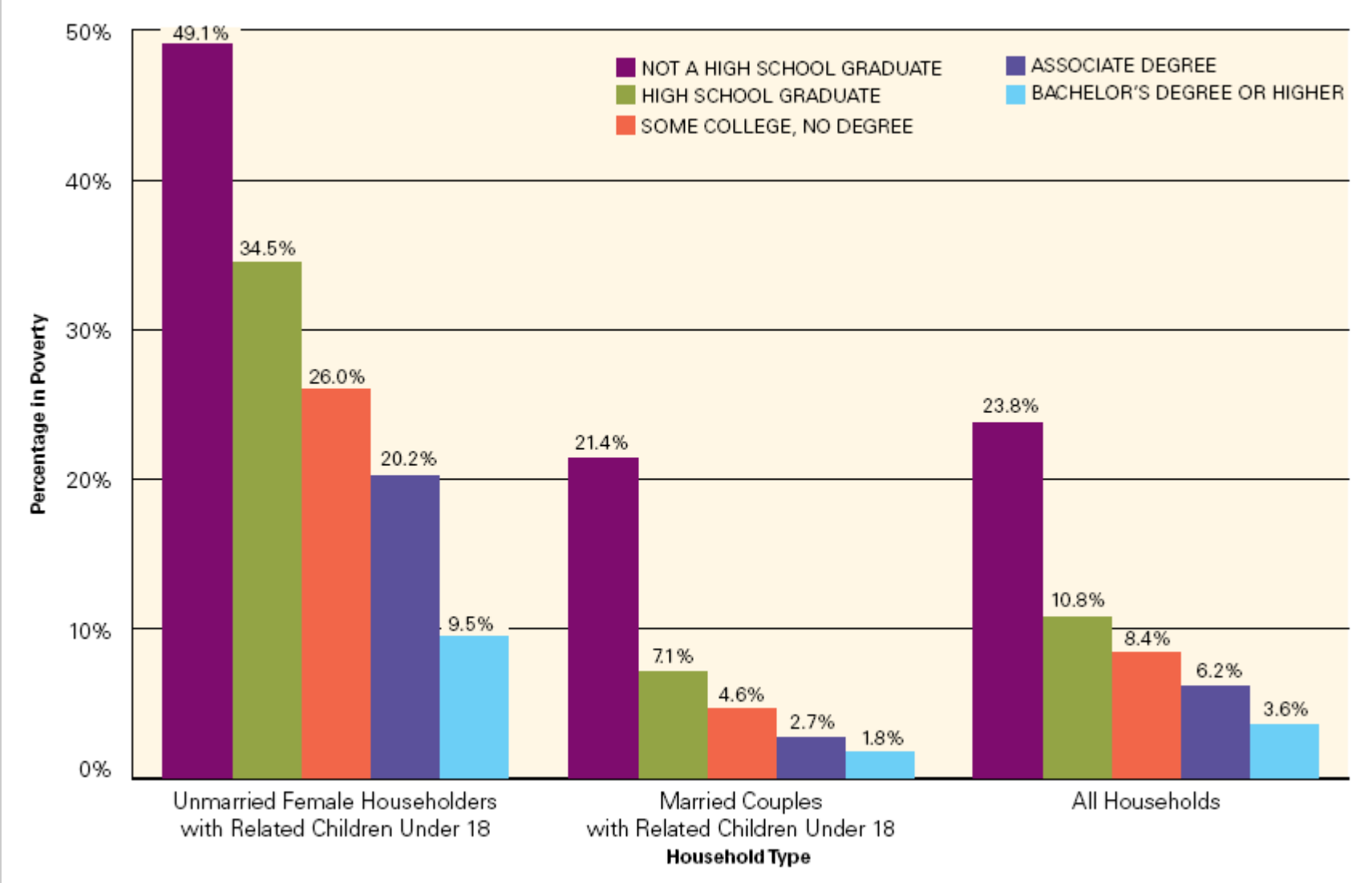
SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# Unemployment Rates of Individuals Ages 25 or Older, by Race/Ethnicity and Education Level, 2006



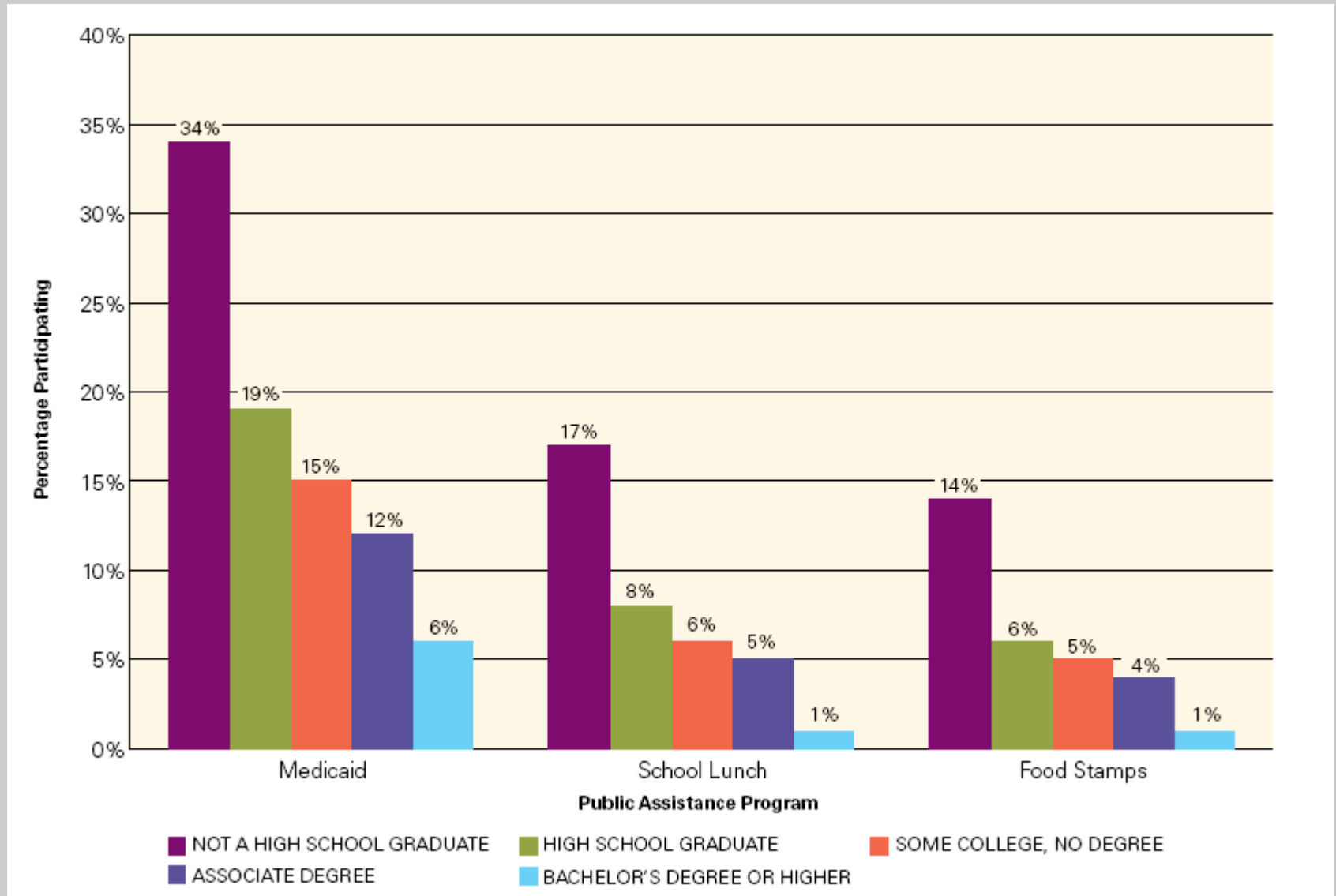
SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# Percentage of Individuals Ages 25 and Older Living in Households in Poverty, by Household Type and Education Level, 2005



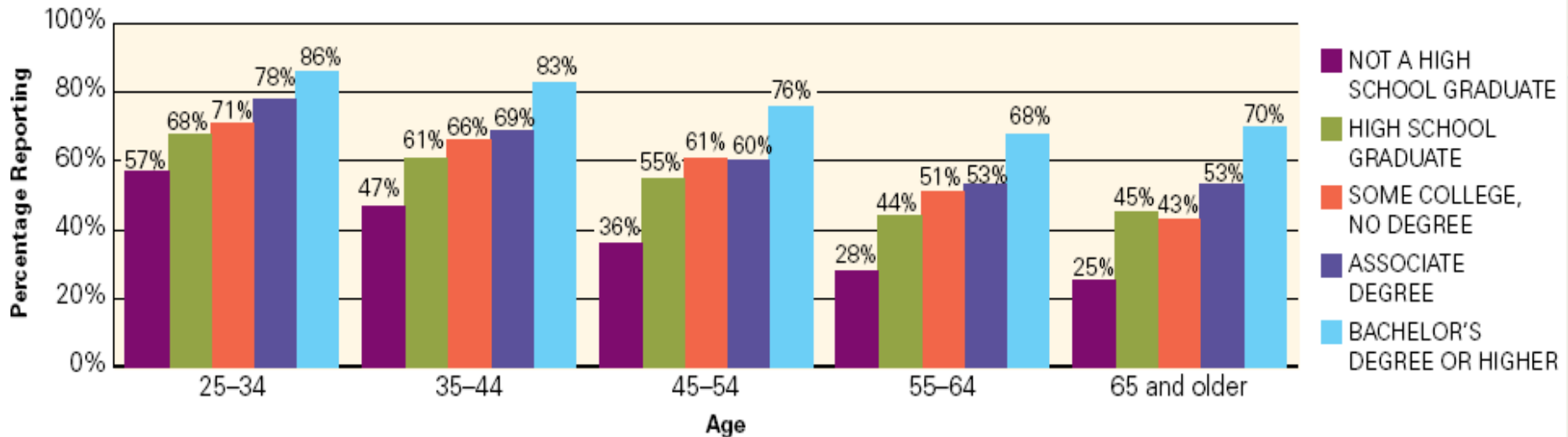
SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# Percentage of Individuals Ages 25 and Older Living in Households That Participated in Public Assistance Programs, by Education Level, 2005

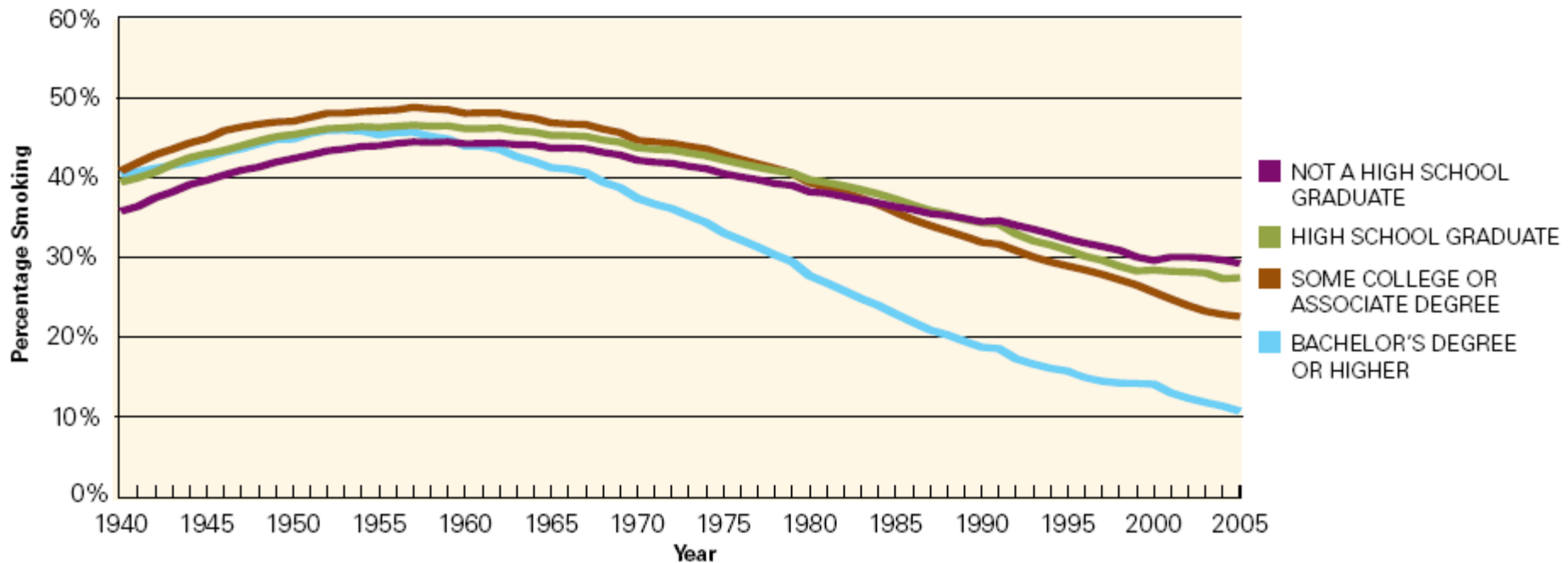


SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

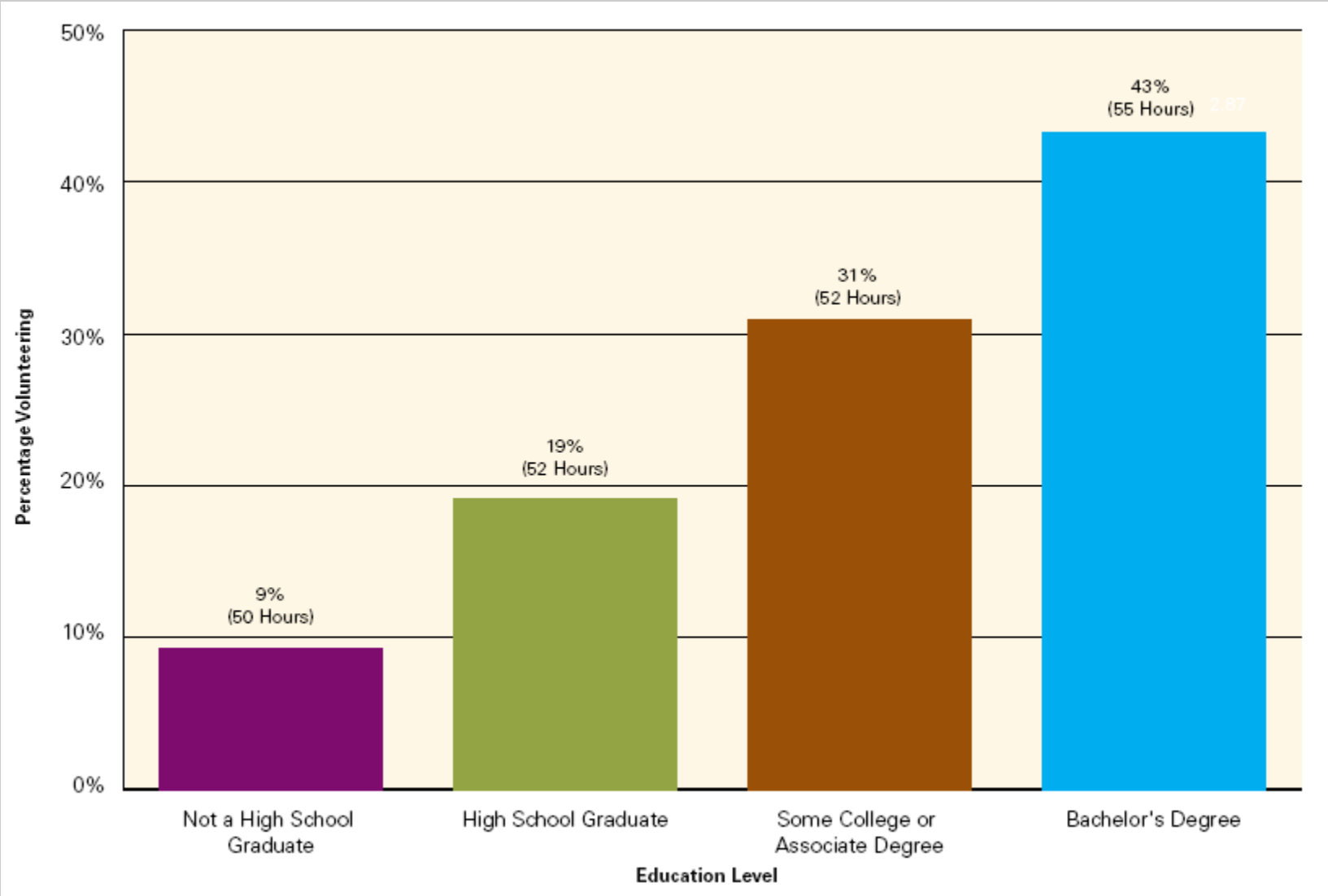
# Percentage of Individuals Ages 25 and Older Reporting Excellent or Very Good Health, by Age and Education Level, 2005



# Smoking Rates of Individuals Ages 25 and Older, by Education Level, 1940-2005

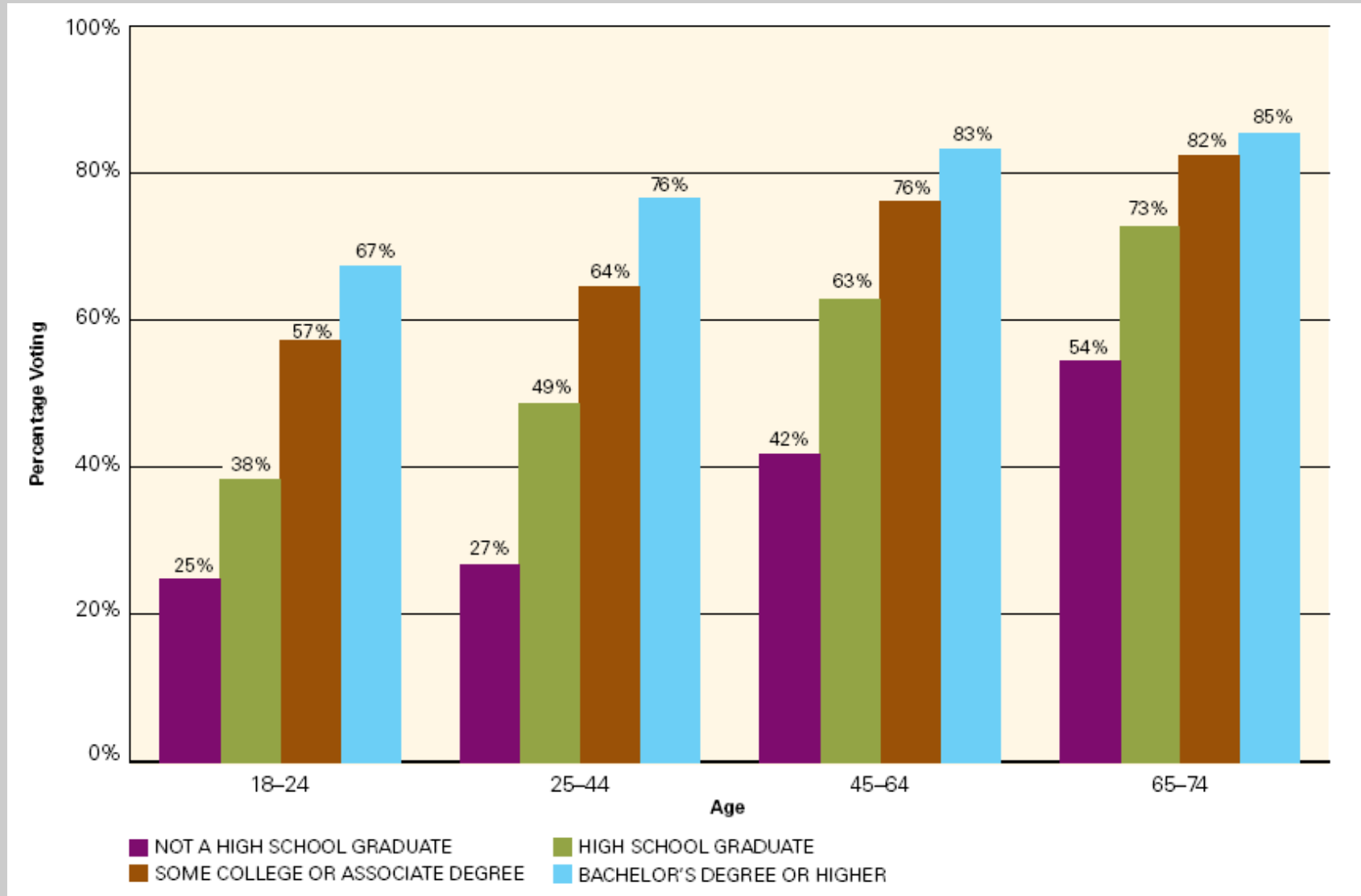


# Percentage of Individuals Ages 25 and Older Who Volunteered and the Median Number of Hours Volunteered, by Education Level, 2006



SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007

# Percentage of U.S. Citizens Ages 25 and Older Who Voted, by Age and Education Level, 2004

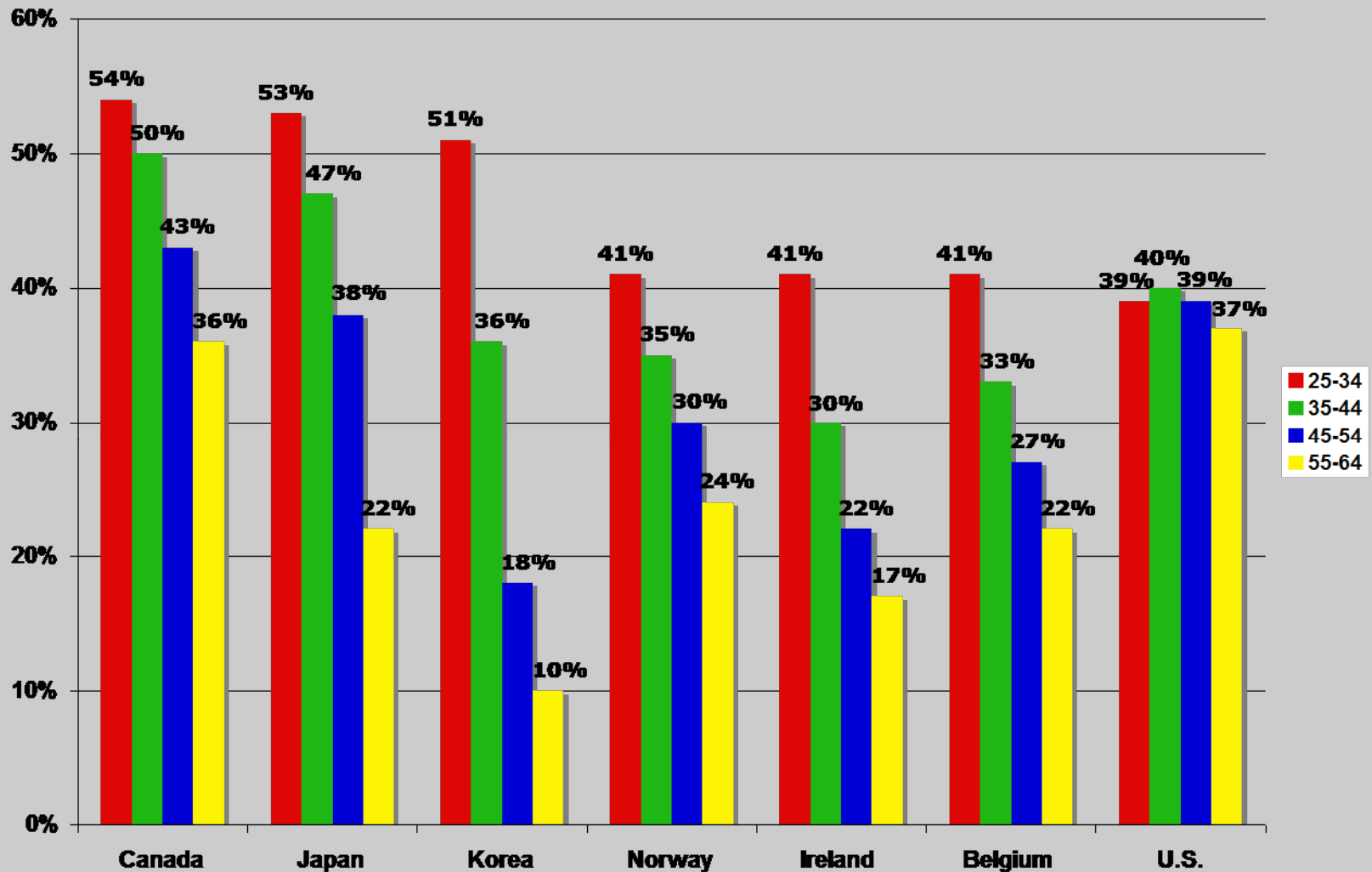


SOURCE: Education Pays: The Benefits of Higher Education for Individuals and Society; 2007



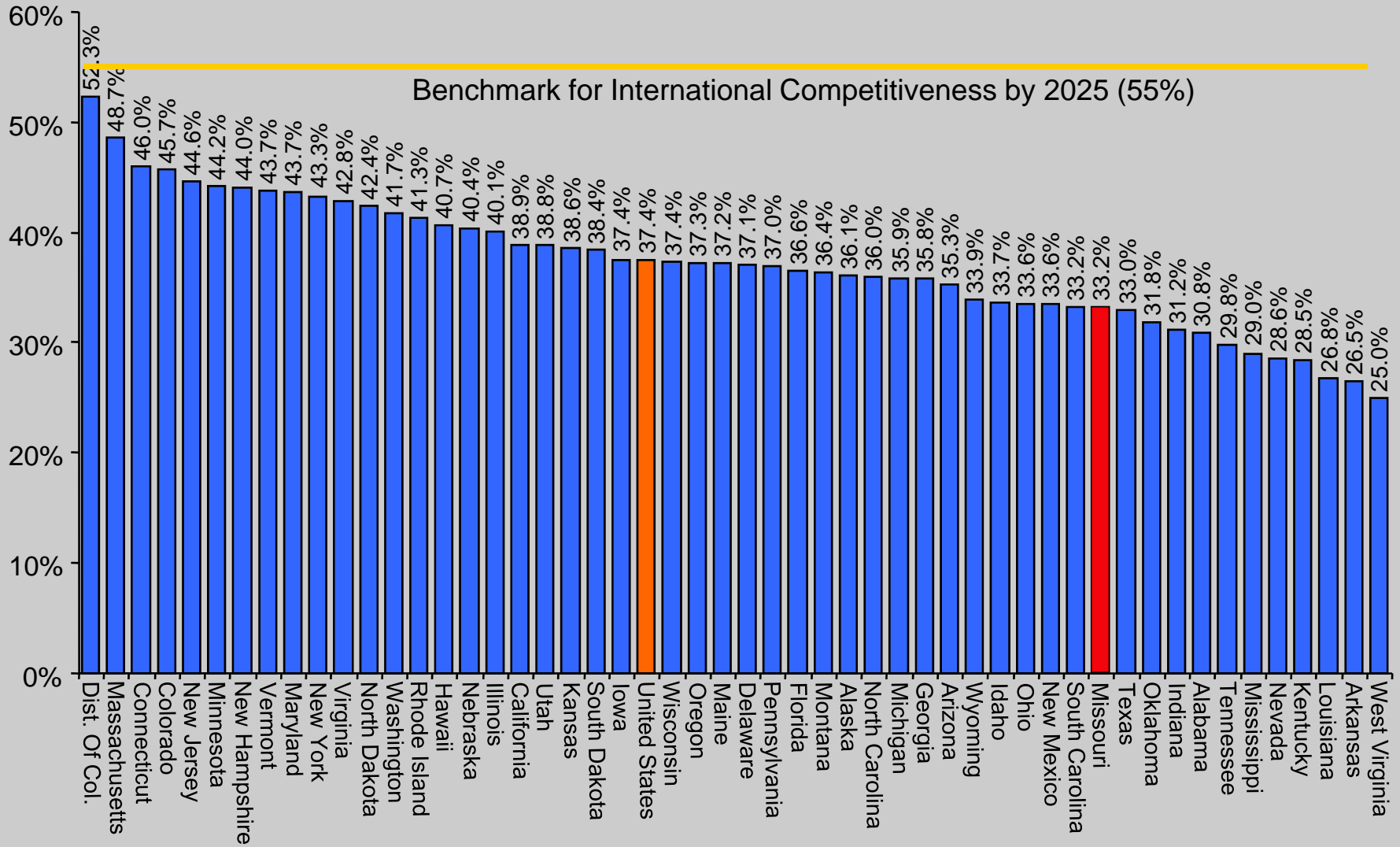
**How is the U.S. performing and  
where does Missouri stand?**

# The Attainment Challenge: Adults 25-64 with a Postsecondary Degree, 2005



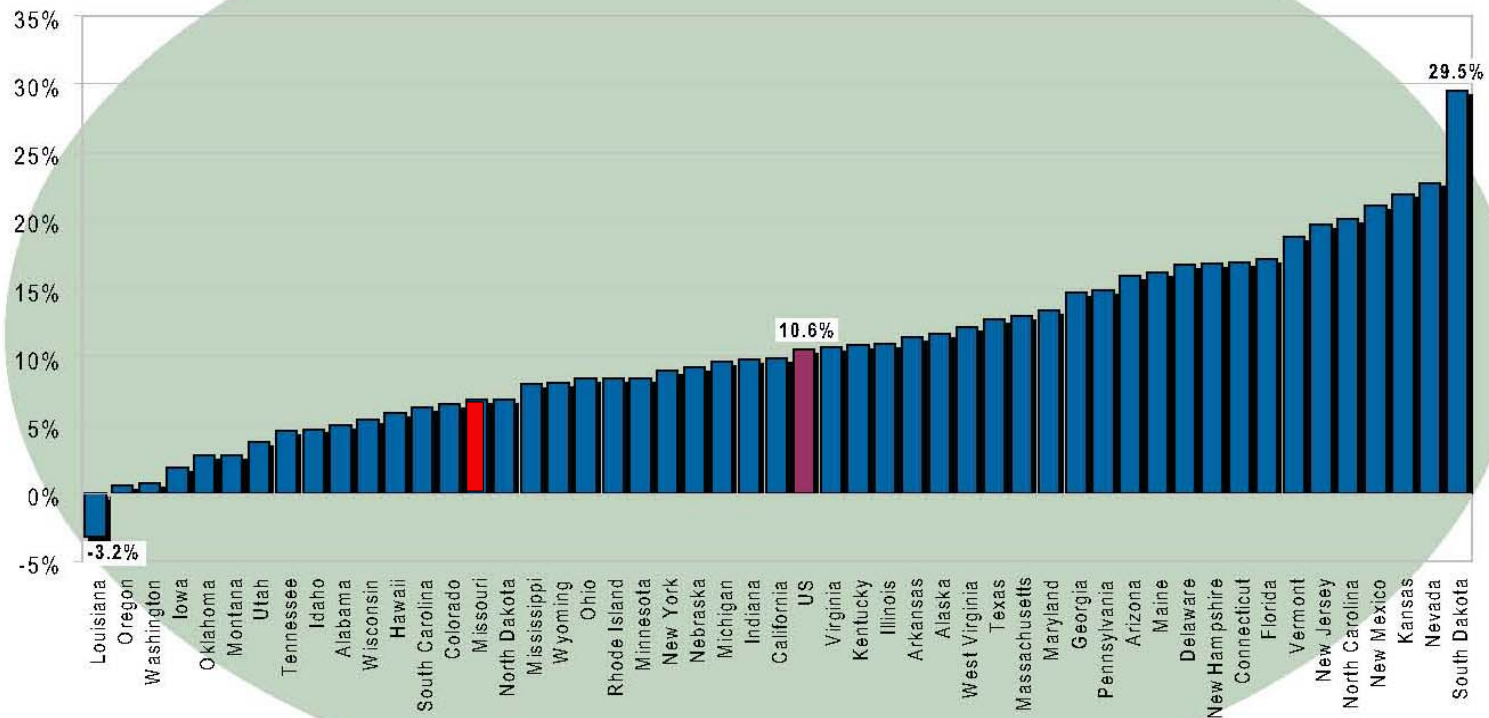
SOURCE: OECD, *Education at a Glance 2007*

# The Attainment Challenge: Adults with a College Degree, 2005



SOURCE: NCHEMS

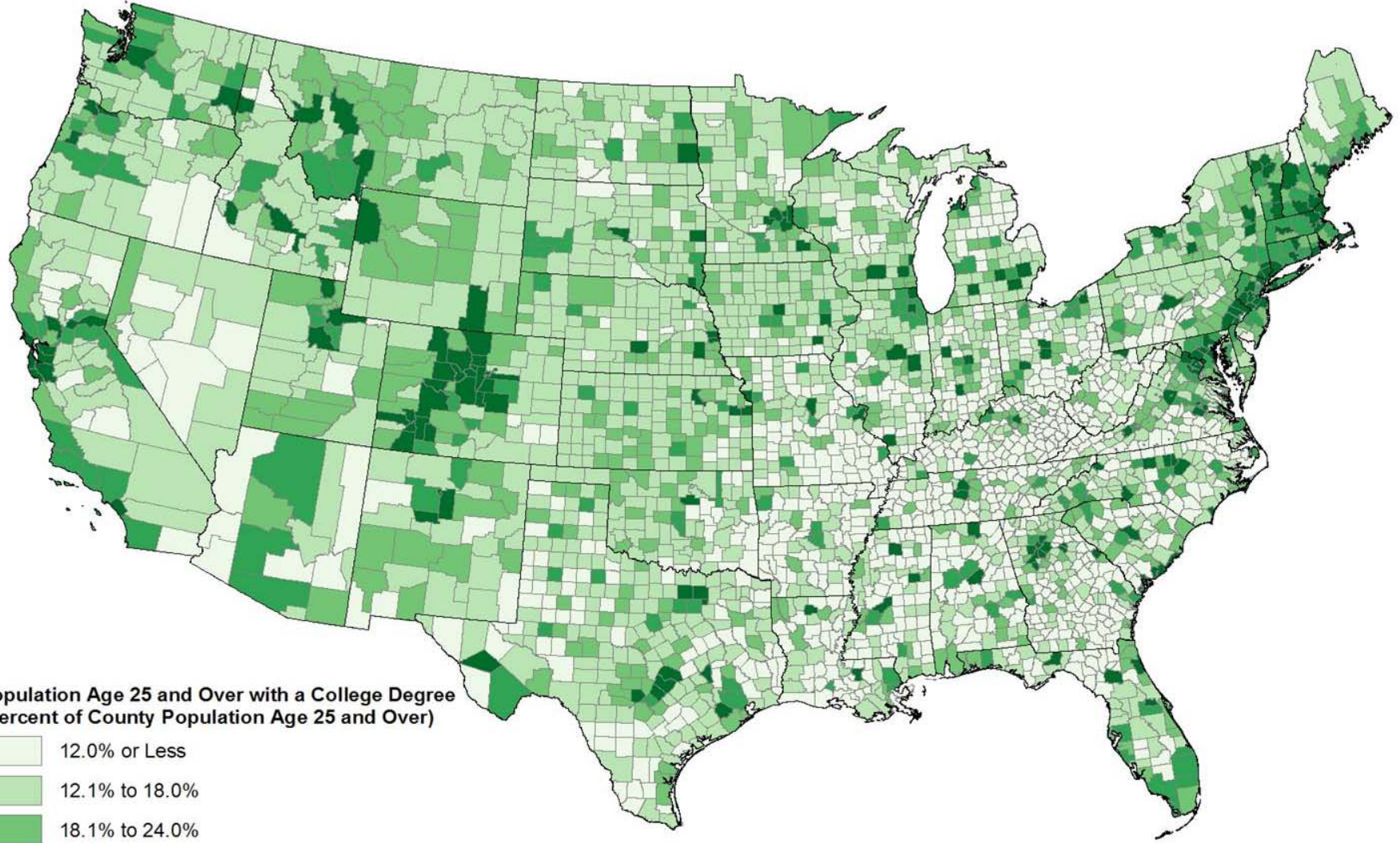
# Full-Time-Equivalent (FTE) Enrollment in Public Higher Education, Percent Change by State, Fiscal 2002-2007



Source: SHEEO SHEF

# College Educational Attainment of the Population Age 25 and Over

## *Percent of County Population Age 25 and Over with a College Degree*



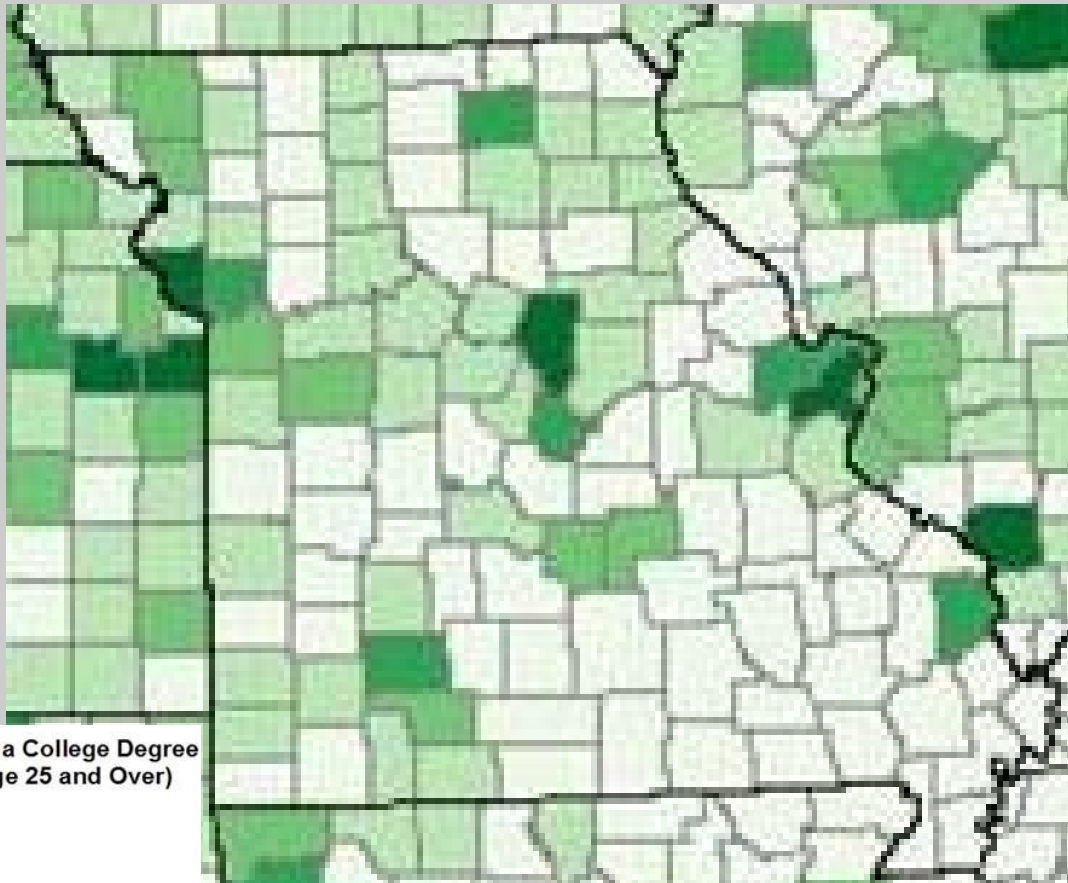
**Population Age 25 and Over with a College Degree  
(Percent of County Population Age 25 and Over)**

- 12.0% or Less
- 12.1% to 18.0%
- 18.1% to 24.0%
- 24.1% to 30.0%
- 30.1% or More (74.7% is max value)

National average in 2000 was 24.4%

# College Educational Attainment of the Population Age 25 and Over

*Percent of County Population Age 25 and Over with a College Degree*

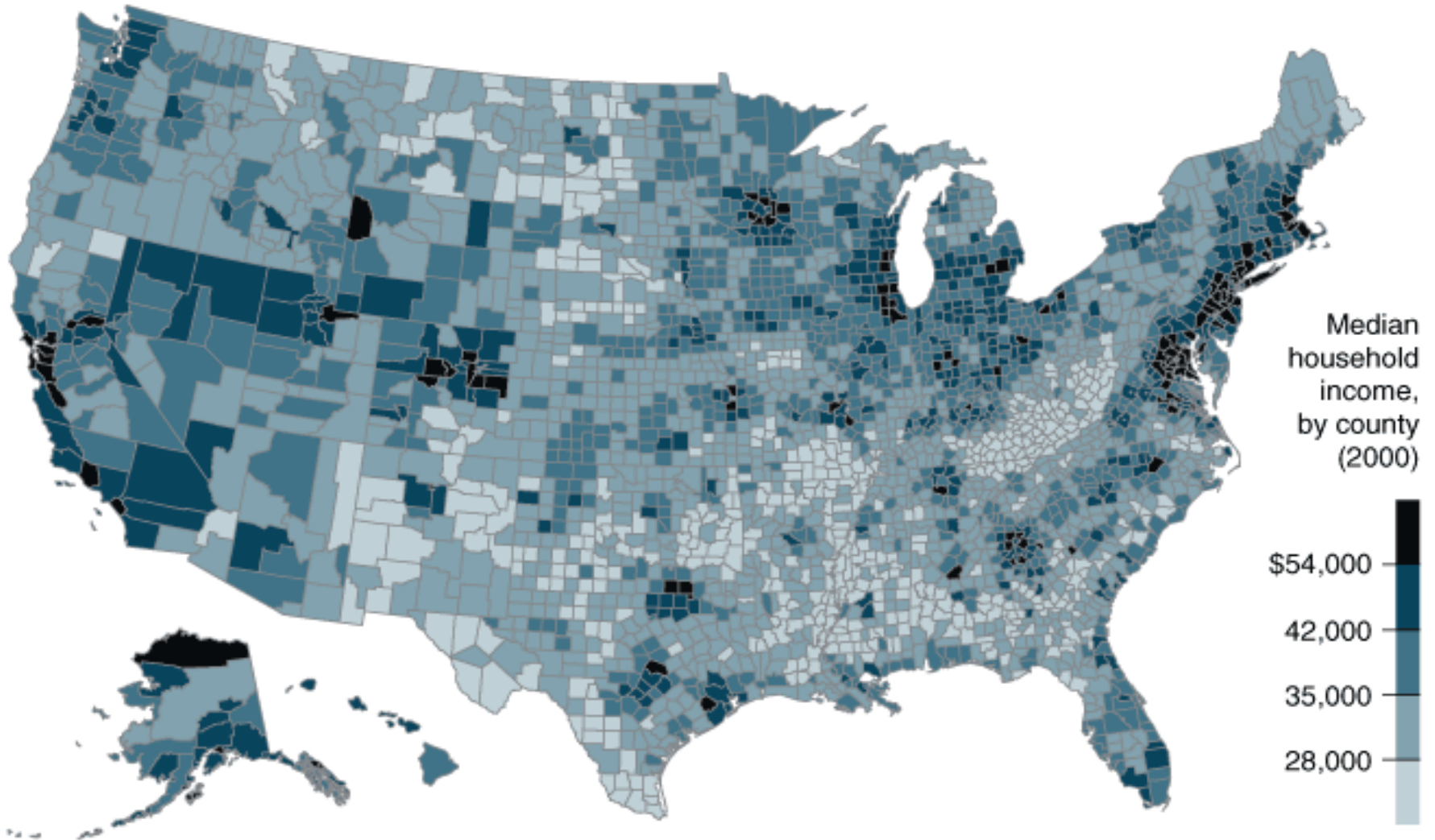


**Population Age 25 and Over with a College Degree  
(Percent of County Population Age 25 and Over)**



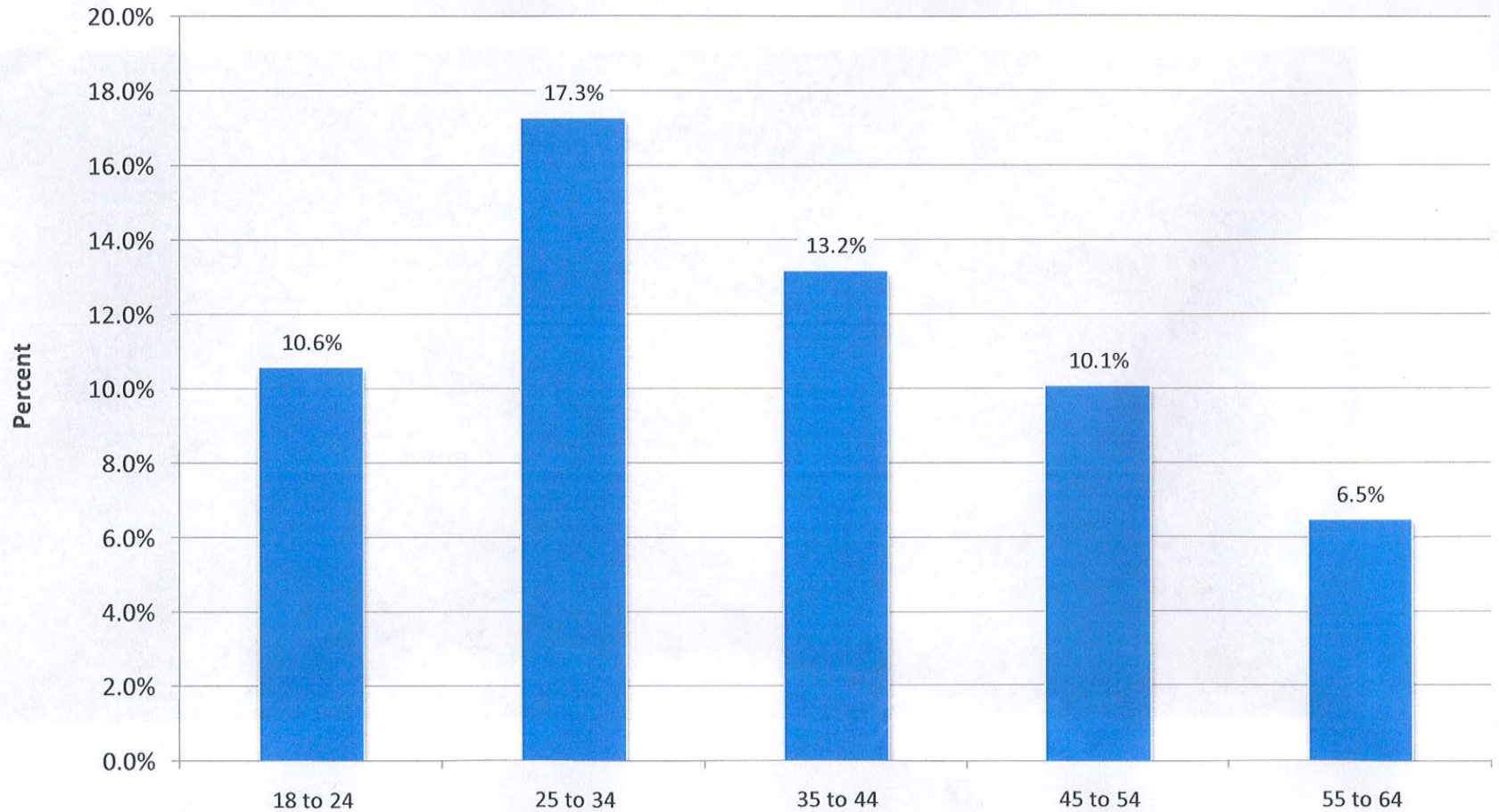
Created by UWEX Center for Community Economic Development  
Source: U.S. Census Bureau (Summary File 3)

# The Income Map



SOURCE: U.S. CENSUS BUREAU; MAP BY RYAN MORRIS

# Percent of Population Involved with Starting or Managing a New Business (by Age Group)

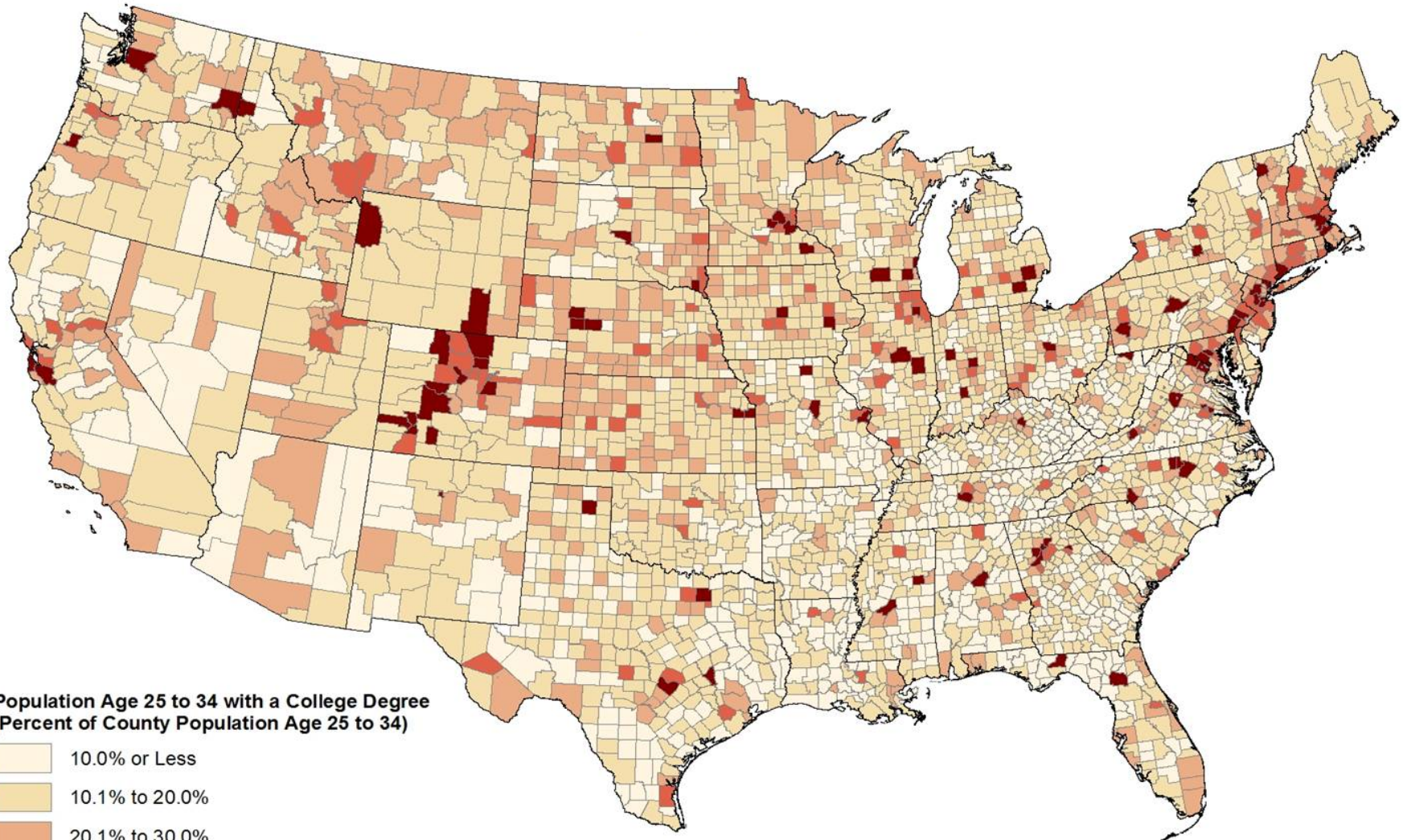


Source: Global Entrepreneurship Monitor (GEM)

Age Group

# Population Age 25 to 34 with a College Degree in 2000

## *As Percent of County Population Age 25 to 34*



Population Age 25 to 34 with a College Degree  
(Percent of County Population Age 25 to 34)



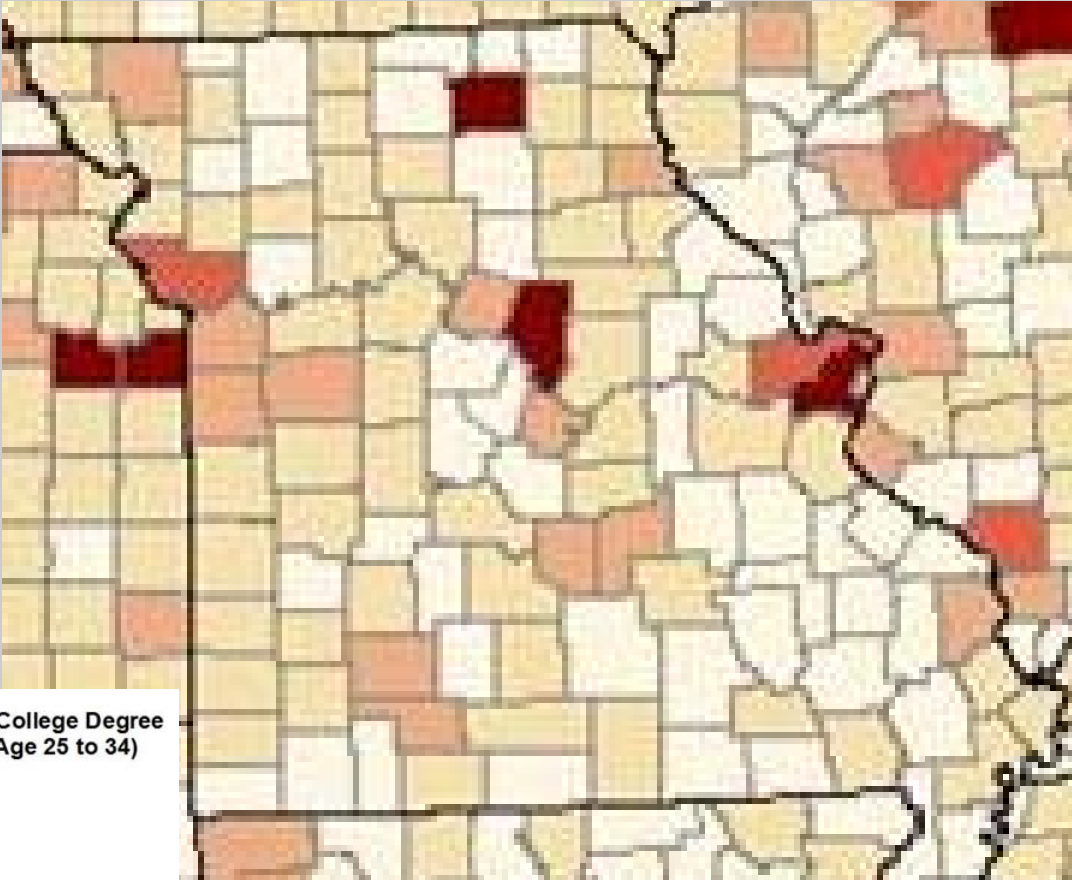
National average in 2000 was 27.5%

**UW**  
**Extension**

Created by UWEX Center for Community Economic Development  
Source: U.S. Census Bureau (Summary File 4)

# Population Age 25 to 34 with a College Degree in 2000

*As Percent of County Population Age 25 to 34*



**Population Age 25 to 34 with a College Degree  
(Percent of County Population Age 25 to 34)**

-  10.0% or Less
-  10.1% to 20.0%
-  20.1% to 30.0%
-  30.1% to 40.0%
-  40.1% or More (74.7% is max value)

National average in 2000 was 27.5%



# 2007 State New Economy Index

- **Compiled and published by The Kauffman Foundation**
- **Measures and benchmarks economic transformation at the state level**
- **26 indicators of New Economy progress in five categories**
  1. **Knowledge jobs (educational level of workforce)**
  2. **Globalization (export of manufacturing and services)**
  3. **Economic Dynamism (start-ups; patents)**
  4. **Digital Transformation (% of population online)**
  5. **Technological Innovation (scientists and engineers in workforce)**

# How Does Missouri Perform?

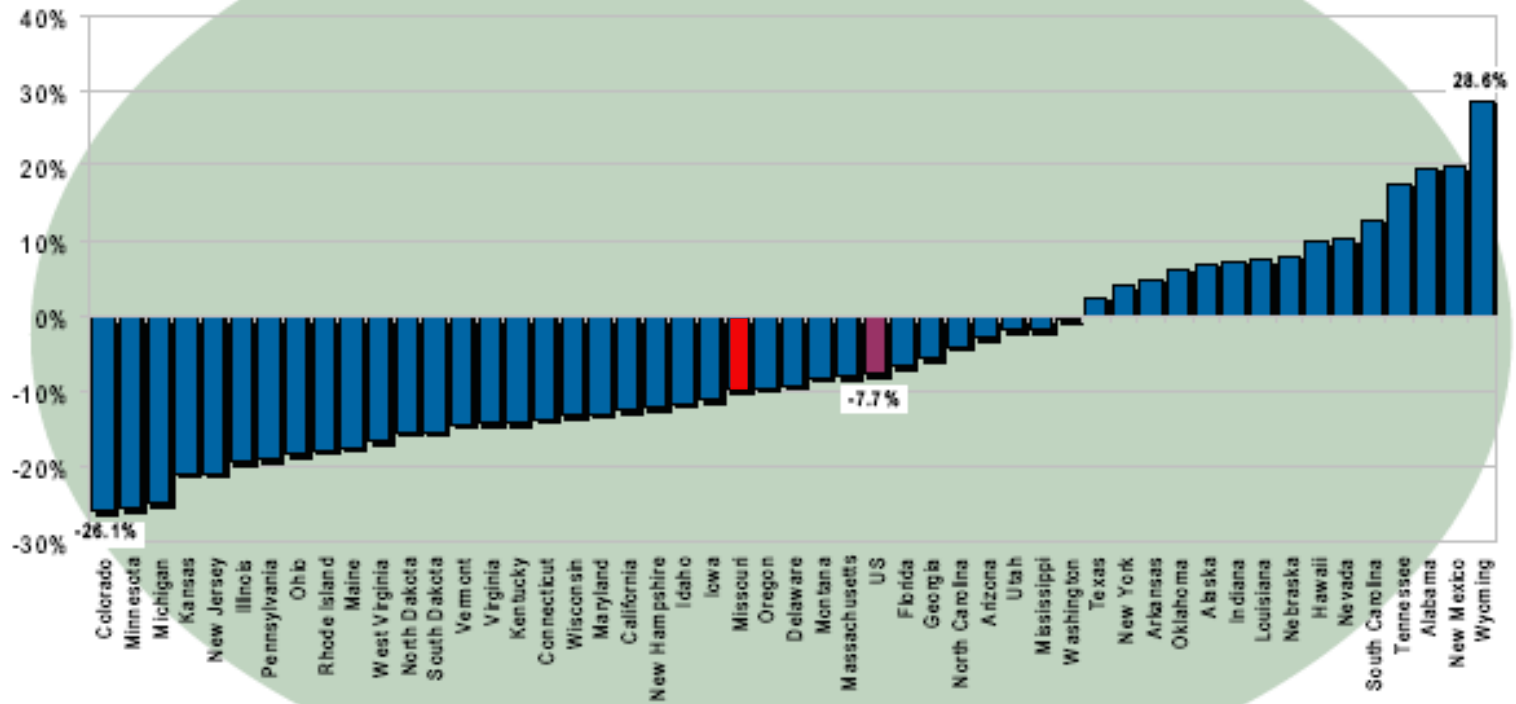
- **Knowledge Jobs (25th)**
- **Globalization (38th)**
- **Economic Dynamism (37th)**
- **Digital Transformation (40th)**
- **Technological Innovation (30th)**

# State Higher Education Funding

State	FISCAL 2007		FISCAL 2007	
	Higher Education Support <sup>a</sup> Per Capita <sup>b</sup>	National Index	Higher Education Support <sup>a</sup> per \$1000 of Personal Income	National Index
Alabama	364	1.31	11.24	1.56
Alaska	421	1.52	10.42	1.45
Arizona	261	1.01	6.50	1.18
Arkansas	267	1.04	6.66	1.23
California	361	1.30	6.66	1.21
Colorado	144	0.52	3.50	0.49
Connecticut	264	0.95	4.87	0.66
Delaware	262	0.94	6.45	0.90
Florida	197	0.71	5.12	0.71
Georgia	266	1.04	6.66	1.20
Hawaii	392	1.42	10.00	1.39
Idaho	252	0.91	6.06	1.12
Illinois	278	1.00	6.90	0.96
Indiana	230	0.83	6.83	0.95
Iowa	265	1.03	6.15	1.13
Kansas	346	1.25	9.45	1.31
Kentucky	266	1.06	6.60	1.24
Louisiana	340	1.23	9.76	1.36
Maine	197	0.71	5.86	0.81
Maryland	309	1.11	6.71	0.93
Massachusetts	199	0.72	4.06	0.57
Michigan	256	0.92	7.27	1.01
Minnesota	269	0.97	6.57	0.91
Mississippi	316	1.15	11.01	1.53
Missouri	193	0.69	5.60	0.76
Montana	165	0.67	5.71	0.79
Nebraska	376	1.36	10.36	1.44
Nevada	242	0.87	5.96	0.83
New Hampshire	94	0.34	2.27	0.32
New Jersey	251	0.90	5.09	0.71
New Mexico	521	1.86	16.57	2.30
New York	320	1.15	6.75	0.94
North Carolina	401	1.45	11.92	1.66
North Dakota	337	1.22	9.66	1.35
Ohio	204	0.74	5.86	0.82
Oklahoma	295	1.06	6.64	1.20
Oregon	182	0.66	5.24	0.73
Pennsylvania	182	0.66	4.69	0.65
Rhode Island	166	0.67	4.70	0.65
South Carolina	259	0.93	6.36	1.16
South Dakota	226	0.82	6.67	0.93
Tennessee	242	0.87	7.26	1.01
Texas	266	1.03	7.66	1.07
Utah	271	0.96	6.70	1.21
Vermont	136	0.49	3.70	0.51
Virginia	242	0.87	5.86	0.82
Washington	252	0.91	6.24	0.87
West Virginia	251	0.91	6.51	1.16
Wisconsin	263	1.02	7.66	1.09
Wyoming	706	2.54	16.30	2.37
U.S.	\$277	1.00	\$7.19	1.00

SOURCE: State Higher Education Finance, FY 2007

# Educational Appropriations per FTE Percent Change by State, Fiscal 2002-2007



Source: SHEEO SHEF

State	Public In-state		Private, Not-for-profit In-state	
	Dollars Awarded	Percent of State Total	Dollars Awarded	Percent of State Total
Alabama	2.112	35.8%	0.383	6.5%
Alaska	0.536	91.4%	0.035	5.9%
Arizona	12.806	96.7%	0.039	0.3%
Arkansas	19.821	90.1%	2.143	9.7%
California	511.816	67.0%	169.845	22.2%
Colorado	42.871	68.1%	2.483	3.9%
Connecticut	22.898	54.9%	16.378	39.3%
Delaware	9.005	85.8%	0.381	3.6%
Florida	108.080	76.0%	18.070	12.7%
Georgia	-	-	-	-
Hawaii	0.344	84.2%	0.065	15.8%
Idaho	0.807	83.0%	0.045	4.7%
Illinois	230.518	55.0%	166.590	39.8%
Indiana	246.464	76.3%	73.499	22.8%
Iowa	3.389	6.1%	46.905	84.5%
Kansas	7.134	43.6%	7.892	48.2%
Kentucky	45.423	49.9%	36.615	40.2%
Louisiana	1.217	83.8%	0.202	13.9%
Maine	-	-	-	-
Maryland	74.349	79.5%	18.585	19.9%
Massachusetts	44.922	53.7%	32.974	39.4%
Michigan	29.352	31.7%	63.361	68.3%
Minnesota	99.270	60.9%	41.813	25.7%
Mississippi	1.959	81.2%	0.455	18.8%
Missouri	10.151	40.5%	14.899	59.5%
Montana	4.391	96.2%	0.174	3.8%
Nebraska	6.557	63.1%	1.952	18.8%
Nevada	15.612	100.0%	-	-
New Hampshire	2.081	56.0%	0.573	15.4%
New Jersey	166.225	66.5%	68.219	27.3%
New Mexico	23.045	99.9%	0.024	0.1%
New York	448.178	53.1%	384.110	45.5%
North Carolina	120.237	70.7%	40.576	23.9%
North Dakota	1.586	84.1%	0.299	15.9%
Ohio	99.498	56.0%	39.224	22.1%
Oklahoma	50.027	89.0%	6.054	10.8%
Oregon	28.372	85.7%	4.700	14.2%
Pennsylvania	231.625	49.5%	173.134	37.0%
Puerto Rico	14.436	36.6%	17.850	45.2%
Rhode Island	6.722	51.6%	2.734	21.0%
SC Comm on Higher Ed	19.252	38.3%	31.068	61.7%
South Dakota	-	-	-	-
Tennessee	24.372	42.0%	9.013	15.5%
Texas	304.777	74.2%	106.139	25.8%
Utah	6.559	89.0%	0.708	9.6%
Vermont	8.062	44.2%	4.318	23.7%
Virginia	101.199	98.5%	1.500	1.5%
Washington	157.457	86.6%	20.739	11.4%
Washington, DC	-	-	-	-
West Virginia	22.869	72.2%	3.488	11.0%
Wisconsin	65.379	72.1%	25.252	27.9%
Wyoming	0.163	100.1%	-	-
<b>Total</b>	<b>3,453.765</b>	<b>62.6%</b>	<b>1,655.504</b>	<b>30.0%</b>

SOURCE: NASSGAP 38<sup>th</sup> Annual Survey Report

# **We Stimulate Immediate and Long-Term Economic Development in Missouri**

- 1. All state universities and colleges are major employers.**
  - MU employs more people in Missouri than all but one private sector company (Wal-Mart).**
  - In St. Joseph, Missouri Western State University is the city's tenth largest employer and supports an additional 1,036 jobs in the community.**
  - Harris Stowe University pumps \$12 million in annual wages into the St. Louis economy.**
- 2. We multiply state, private, federal, and international investments into additional economic activity.**
  - \$248 million of research at MU leverages \$481 million impact and supports 9,746 jobs.**

# **We Stimulate Immediate and Long-Term Economic Development in Missouri**

- 3. Intellectual discoveries at our universities are commercialized into new products, processes, and companies.**
  - At Missouri State University, the Jordan Valley Innovation Center has received more than \$60 million in grants and has added 85 jobs to the local economy.**
  - Missouri Western University hosts the Kit Bond Science and Technology Incubator and has an annual economic impact of \$161 million on the local economy.**
  
- 4. We prepare students for the jobs that a growing and changing economy will require.**
  - Health care**
  - Clean energy**
  - Precision agriculture**
  - Information technology**

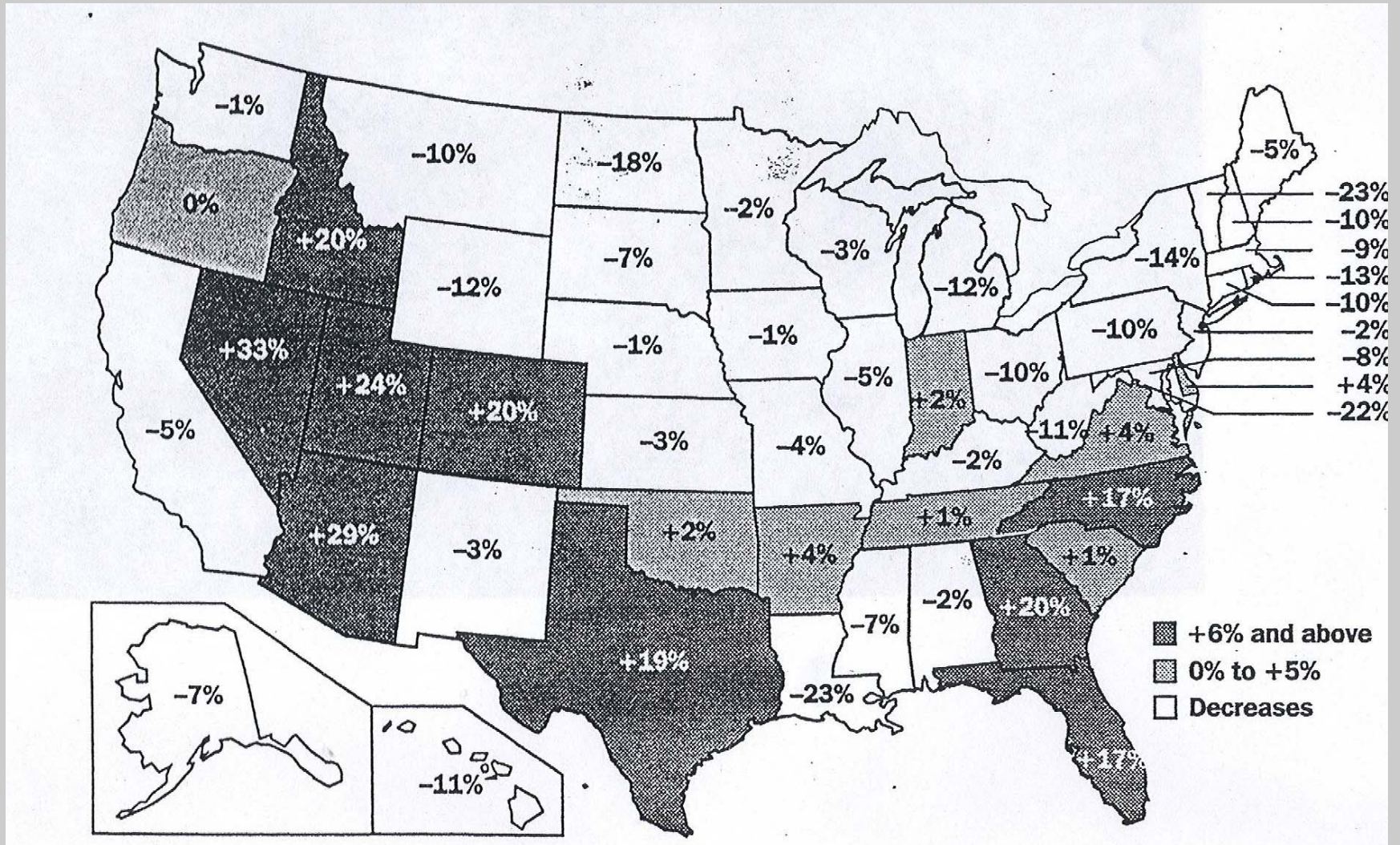
# **We Stimulate Immediate and Long-Term Economic Development in Missouri**

- 5. Our students and faculty are leading entrepreneurs, starting up new businesses.**
  - In 2007, at the University of Central Missouri's Institute for Entrepreneurial Studies and Development, 447 businesses were assisted, 65 new jobs were created, and \$29 million in additional sales was leveraged.**
  - After just two years, 116 businesses have been started or expanded and 151 new jobs created by Southeast Missouri State's "Operation Jump Start."**
  
- 6. We import thousands of students into our state who spend money on tuition, living expenses, and sales tax.**
  - Statewide, more than \$17,000 nonresident students boosting Missouri's economy (2005)**



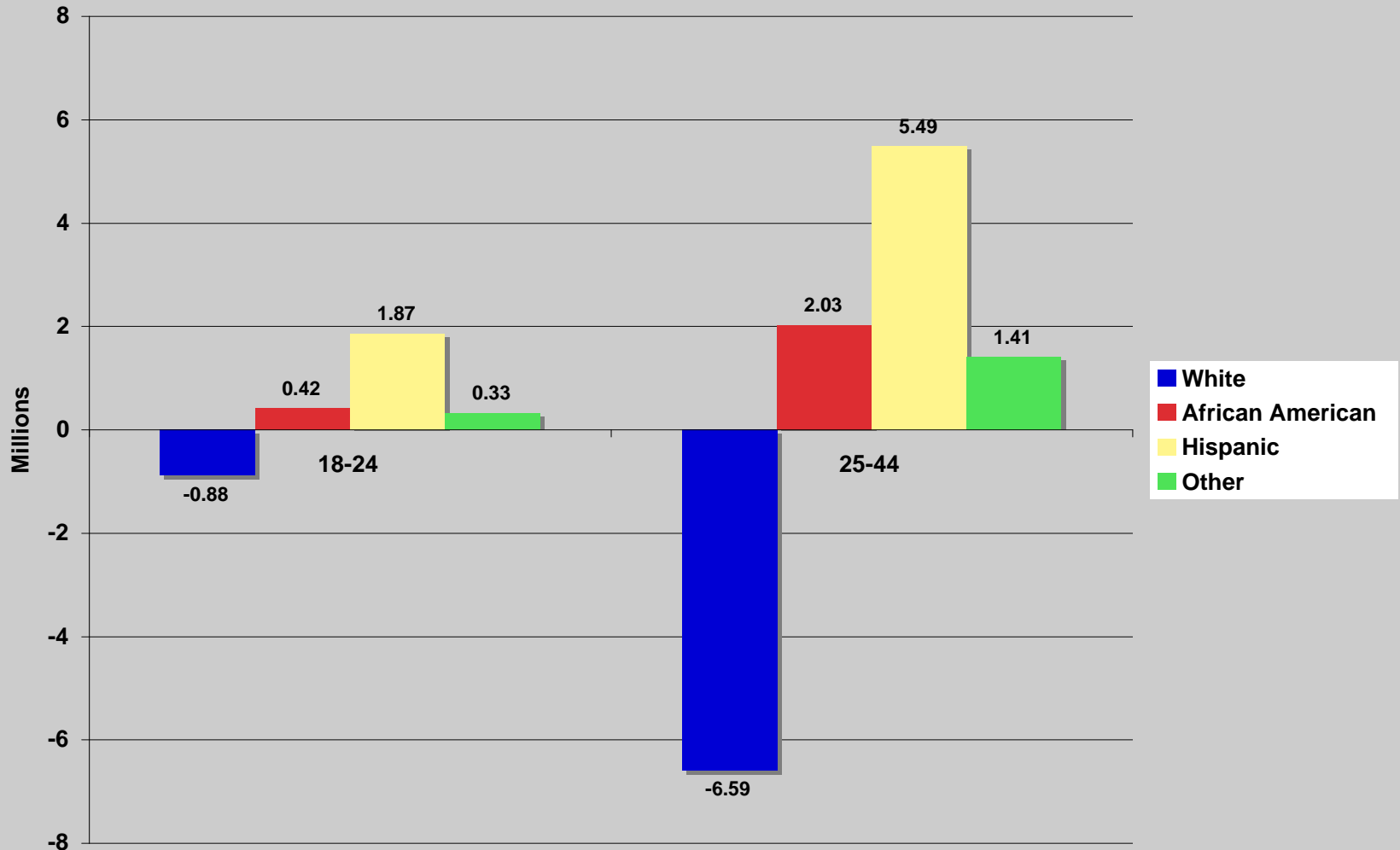
**What does the future hold?**

# Projected Changes in the Number of High School Graduates, 2008-9 to 2018-19



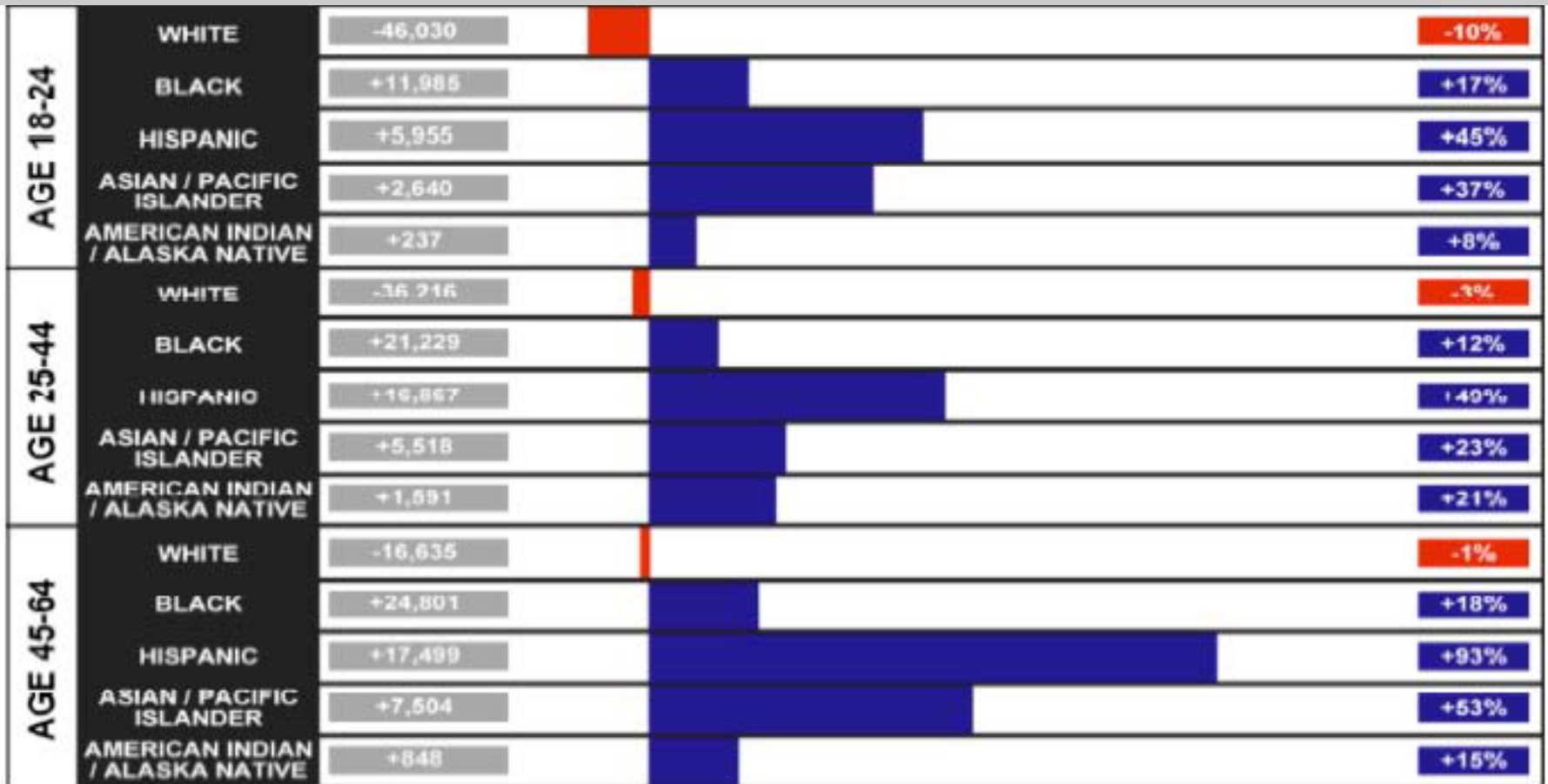
SOURCE: The Chronicle of Higher Education, August 29, 2008

# The Attainment Challenge: Change in 18-44 Year Old Population, 2005-2025



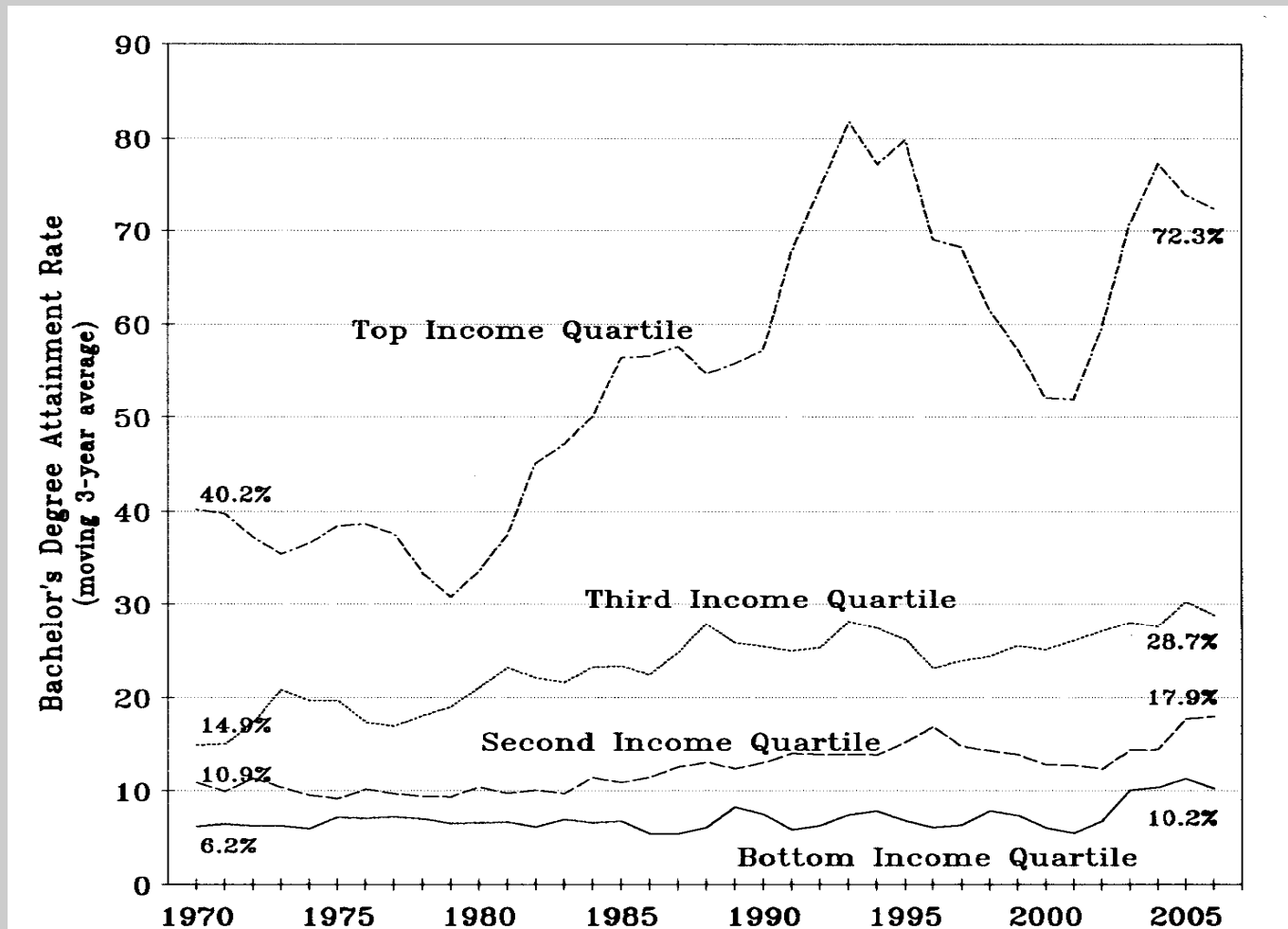
SOURCE: U.S. Census Bureau

# Projected Changes in Missouri Population by Race/Ethnicity, 2005-2025



SOURCE: NCHEMS; estimates calculated using data from U.S. Census Bureau.

# Estimated Baccalaureate Degree Attainment by Age 24 by Family Quartile 1970 to 2006



SOURCE: Postsecondary Education OPPORTUNITY