

# Workforce Development: Supply & Demand in Hawaii



Hawaii Workforce Council  
October 26, 2011



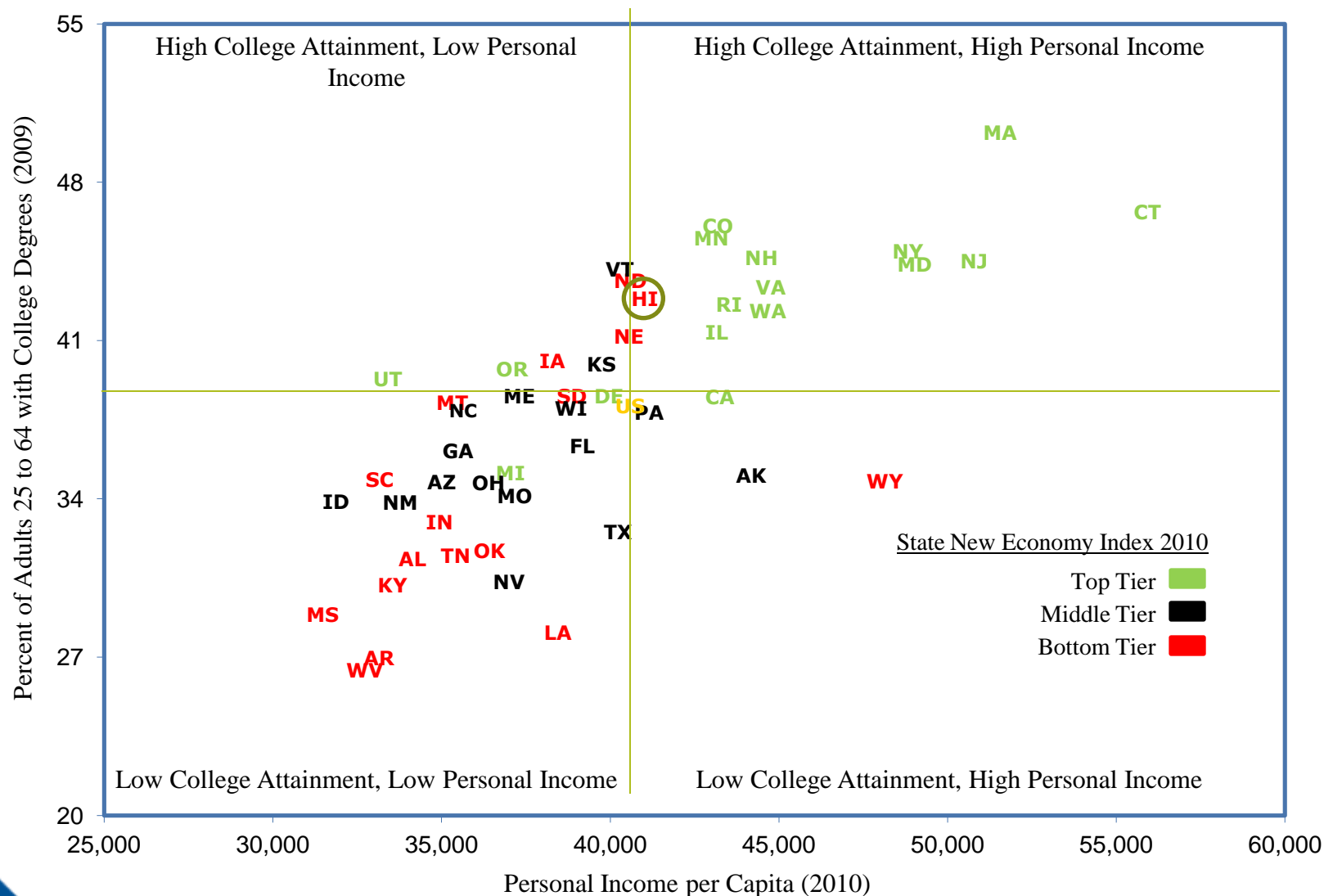
**NCHEMS**

**National Center for Higher Education Management Systems**  
3035 Center Green Drive, Suite 150  
Boulder, Colorado 80301

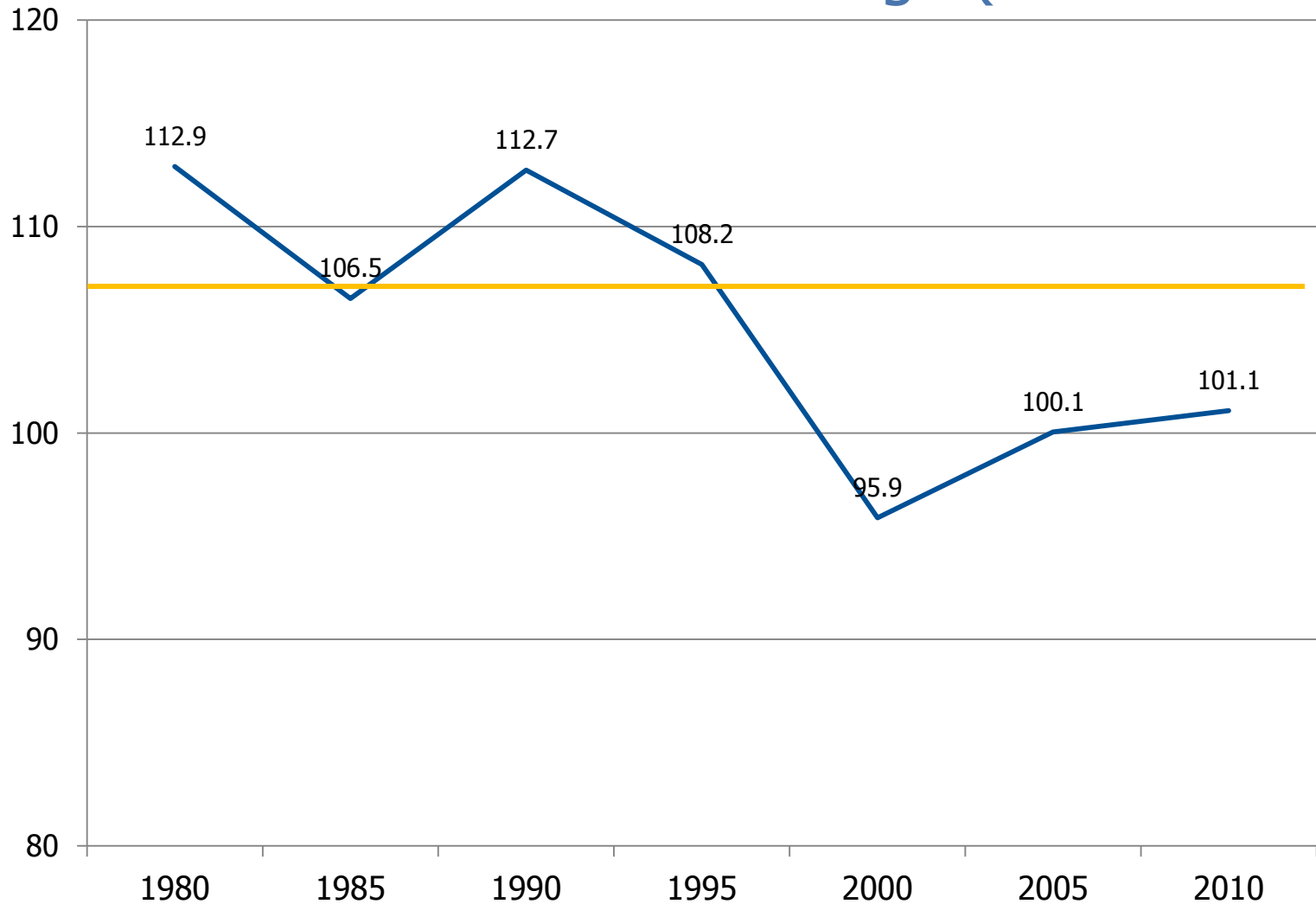
# Core Problems Facing Hawaii

- Per capita income at the U.S. average with a much higher cost of living
- Heavily dependent on service (especially visitor) industry and government employment
- Relatively low wage structure (especially for college graduates)
- Aging workforce
- Very low unemployment and workforce shortages in key areas—coupled with underemployment

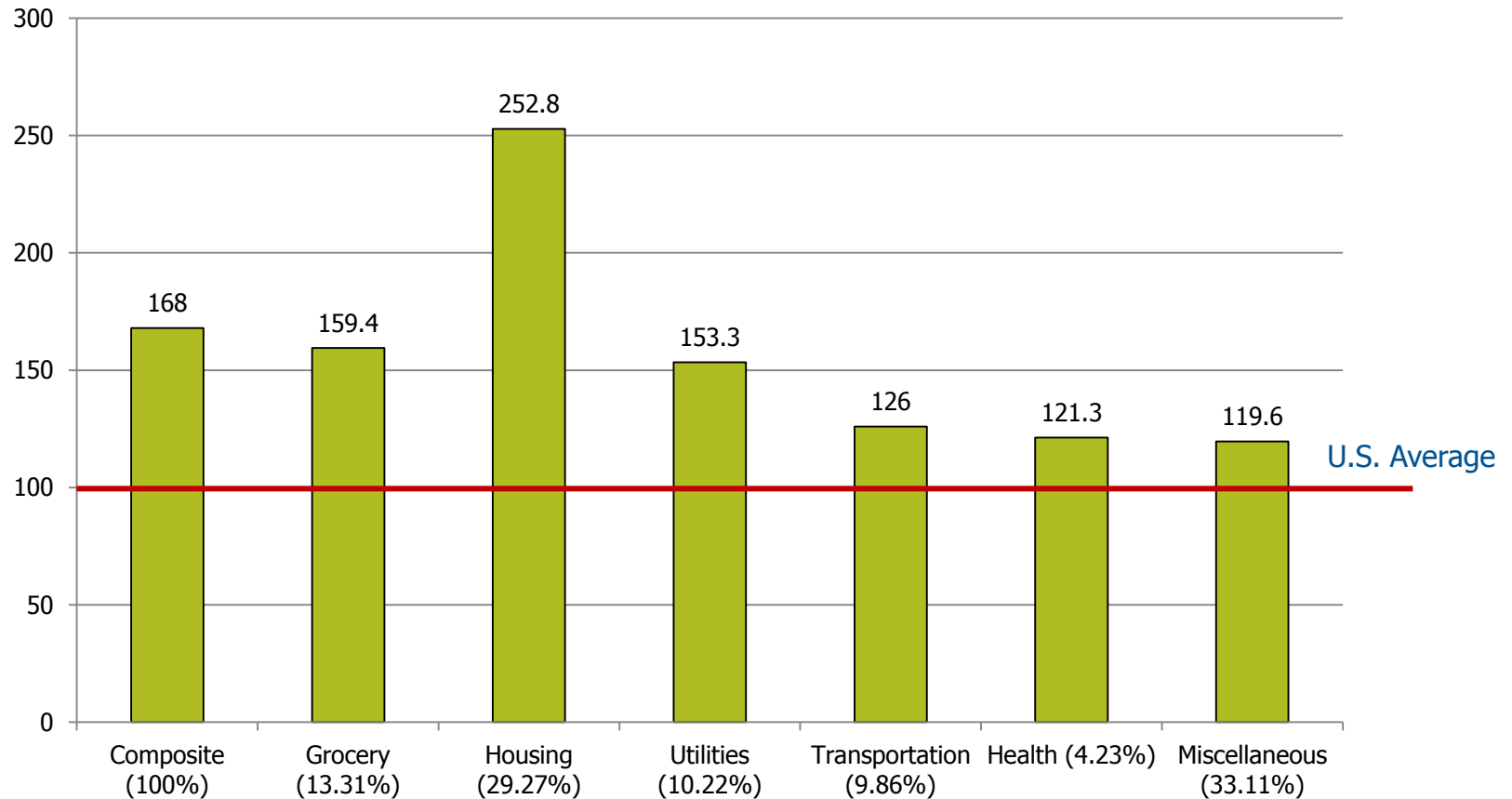
# The Relationship Between Educational Attainment, Personal Income, and the State New Economy Index (2010)



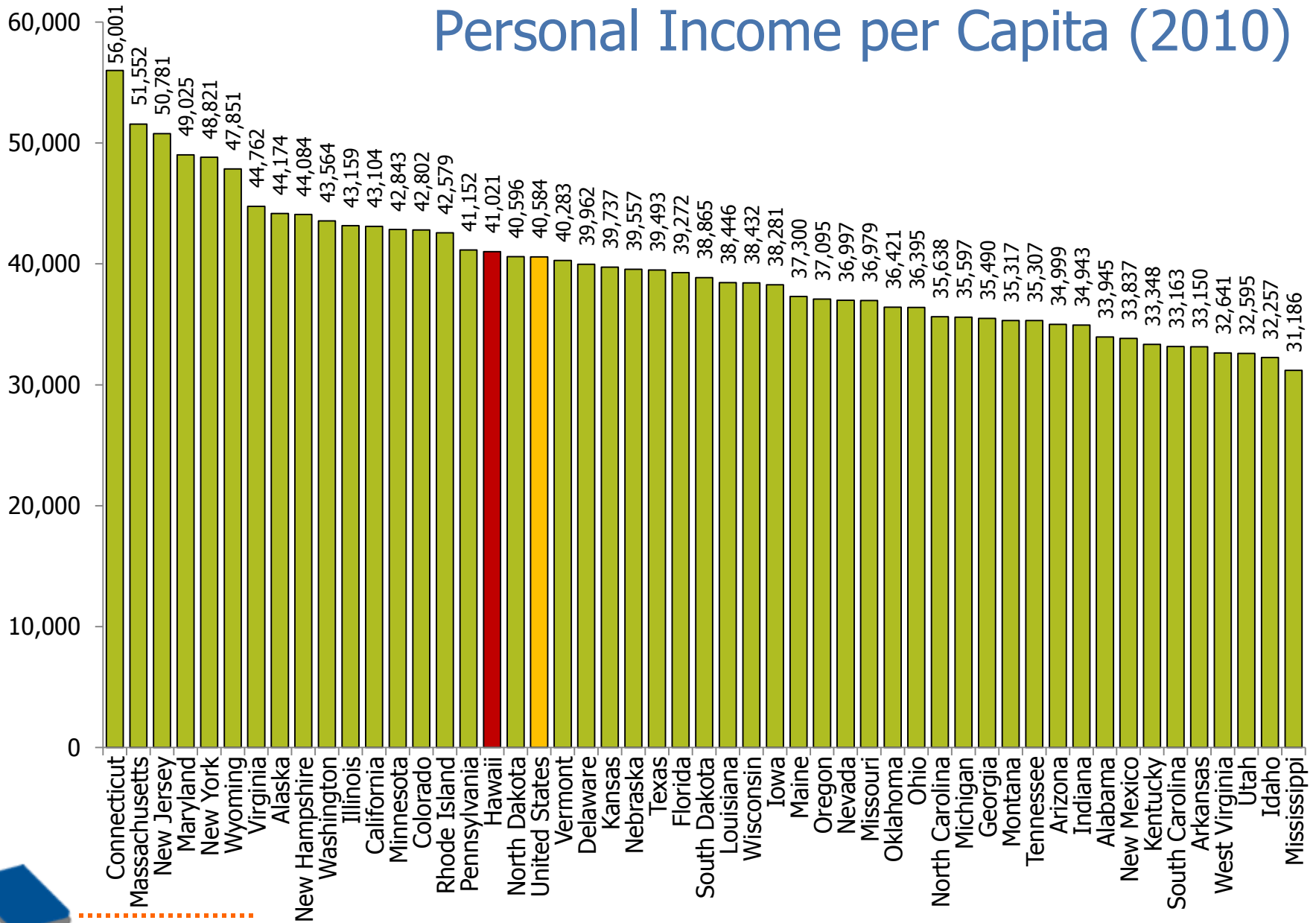
# Hawaii Personal Income per Capita as a Percent of the U.S. Average (1980 to 2010)



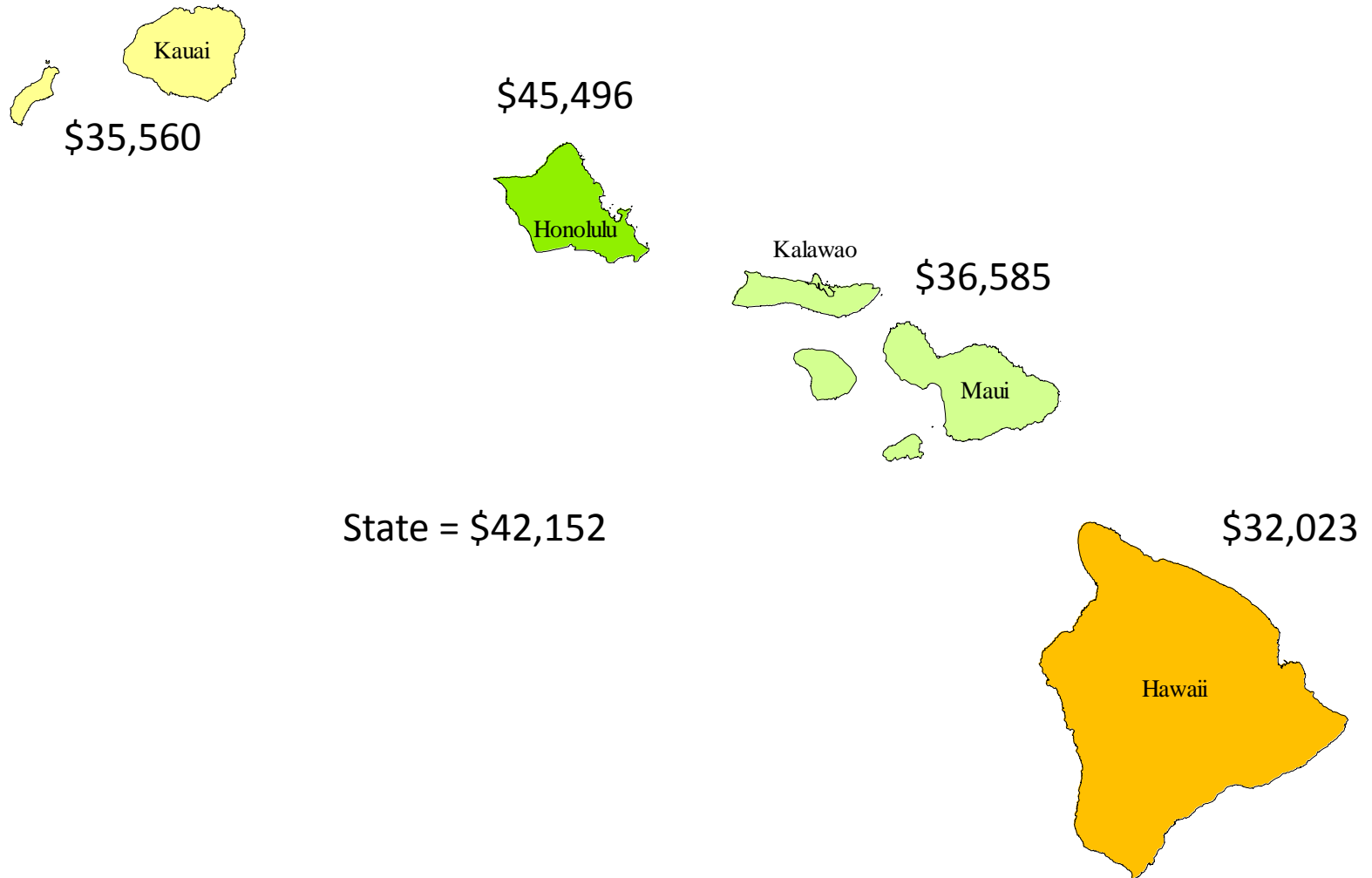
# Honolulu Cost of Living Indexed to U.S. Average



# Personal Income per Capita (2010)



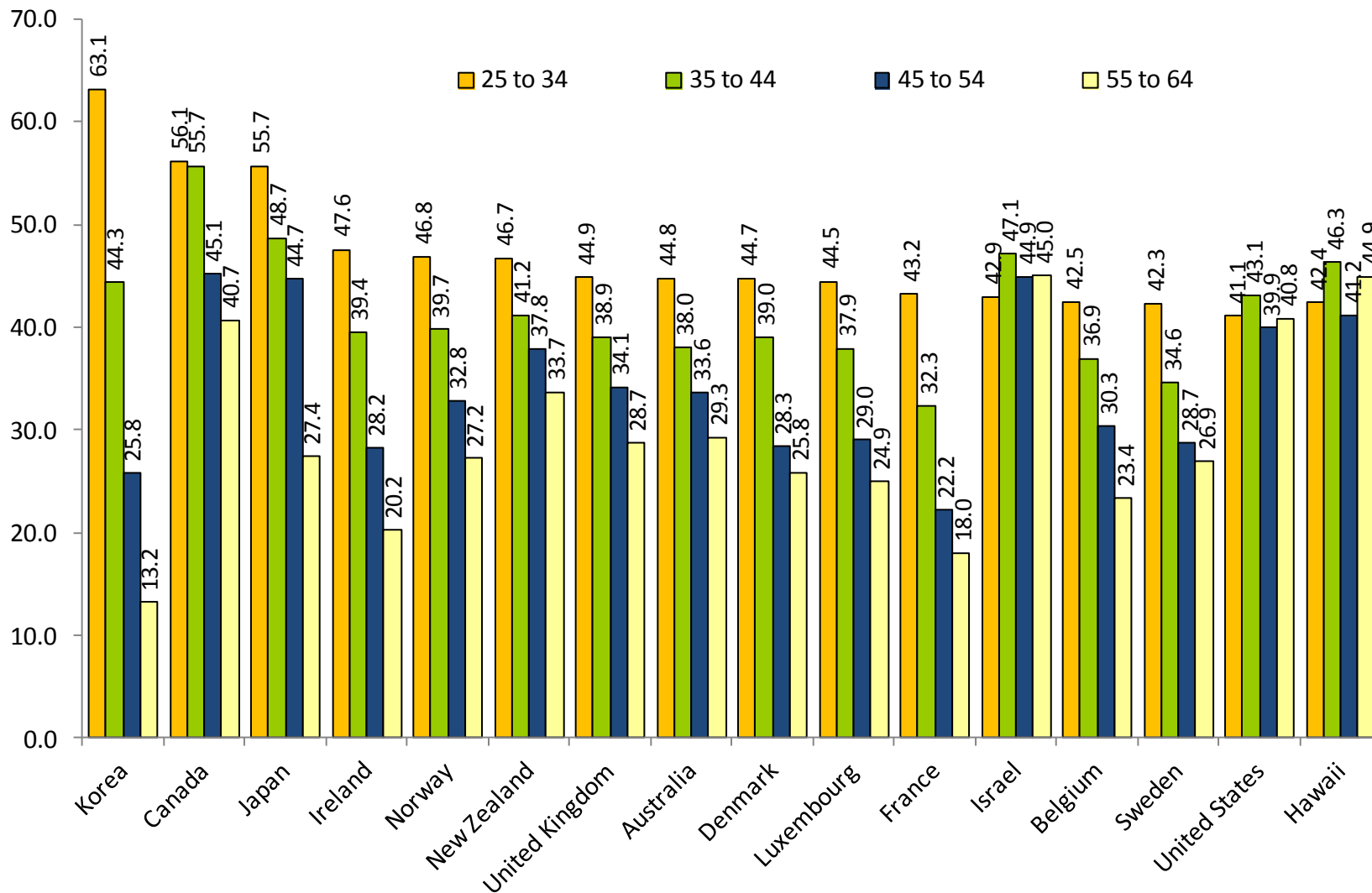
# Hawaii Personal Income per Capita by County (2009)



# Some Key Facts About the State's Workforce

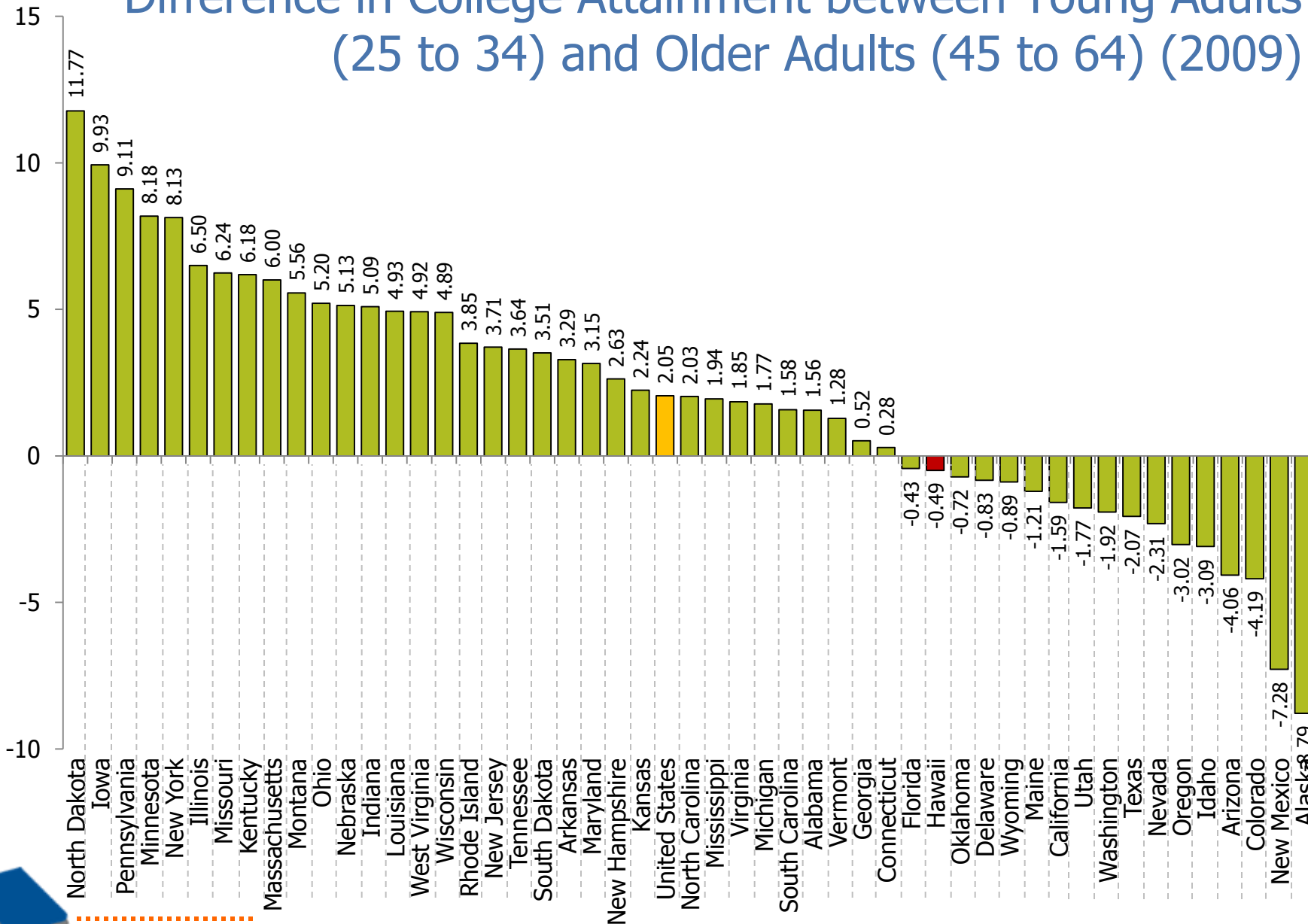
- Generally high educational attainment - but losing ground
- Aging
- Workforce participation is not high in spite of low unemployment rates and varies by:
  - Region of state
  - Education attainment levels
- Reliant on in-migration to fill positions

# Percent of Adults with an Associate Degree or Higher by Age Group – U.S., Hawaii & Leading OECD Countries

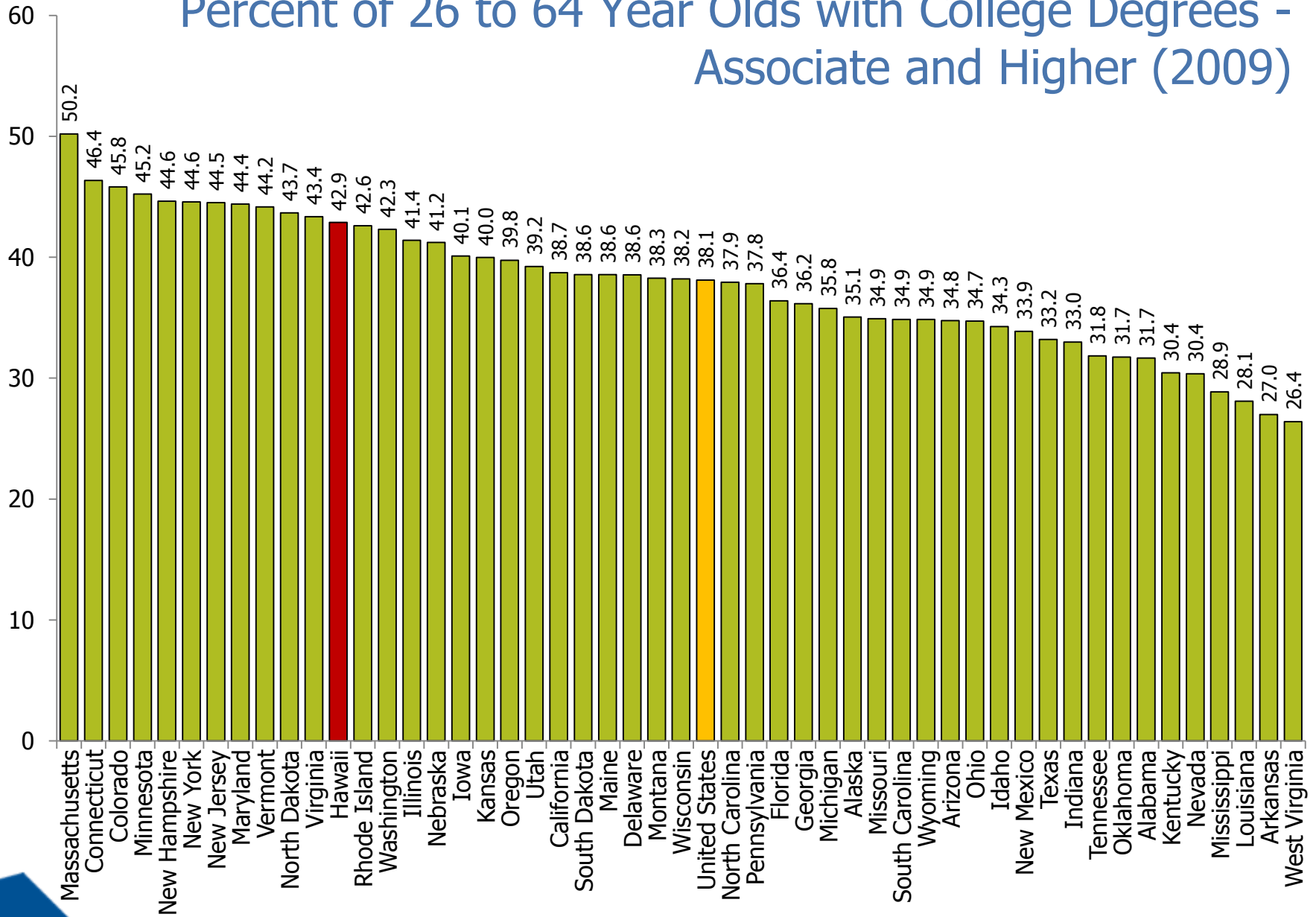


Source: OECD, Education at a Glance 2011

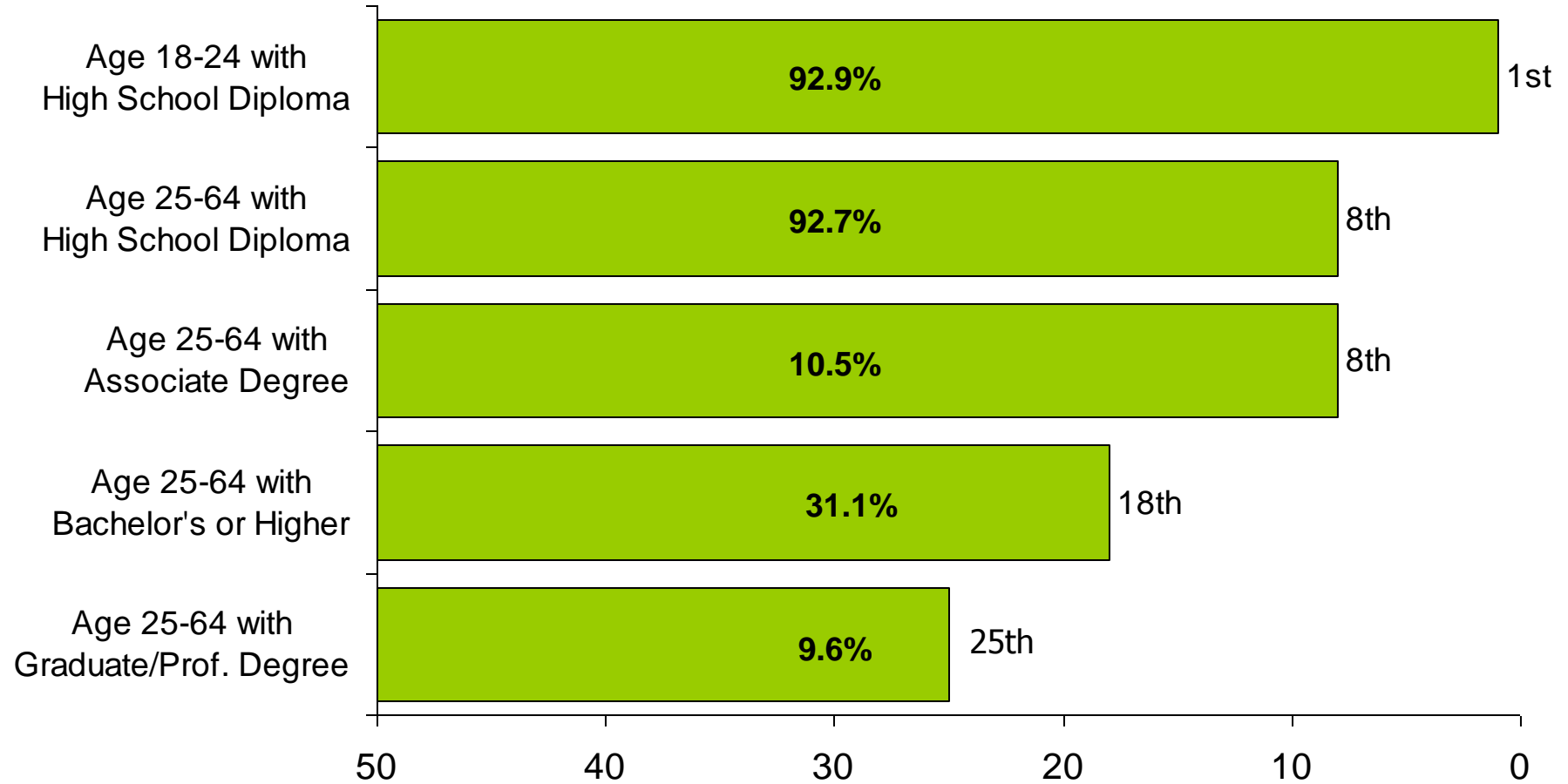
# Difference in College Attainment between Young Adults (25 to 34) and Older Adults (45 to 64) (2009)



# Percent of 26 to 64 Year Olds with College Degrees - Associate and Higher (2009)

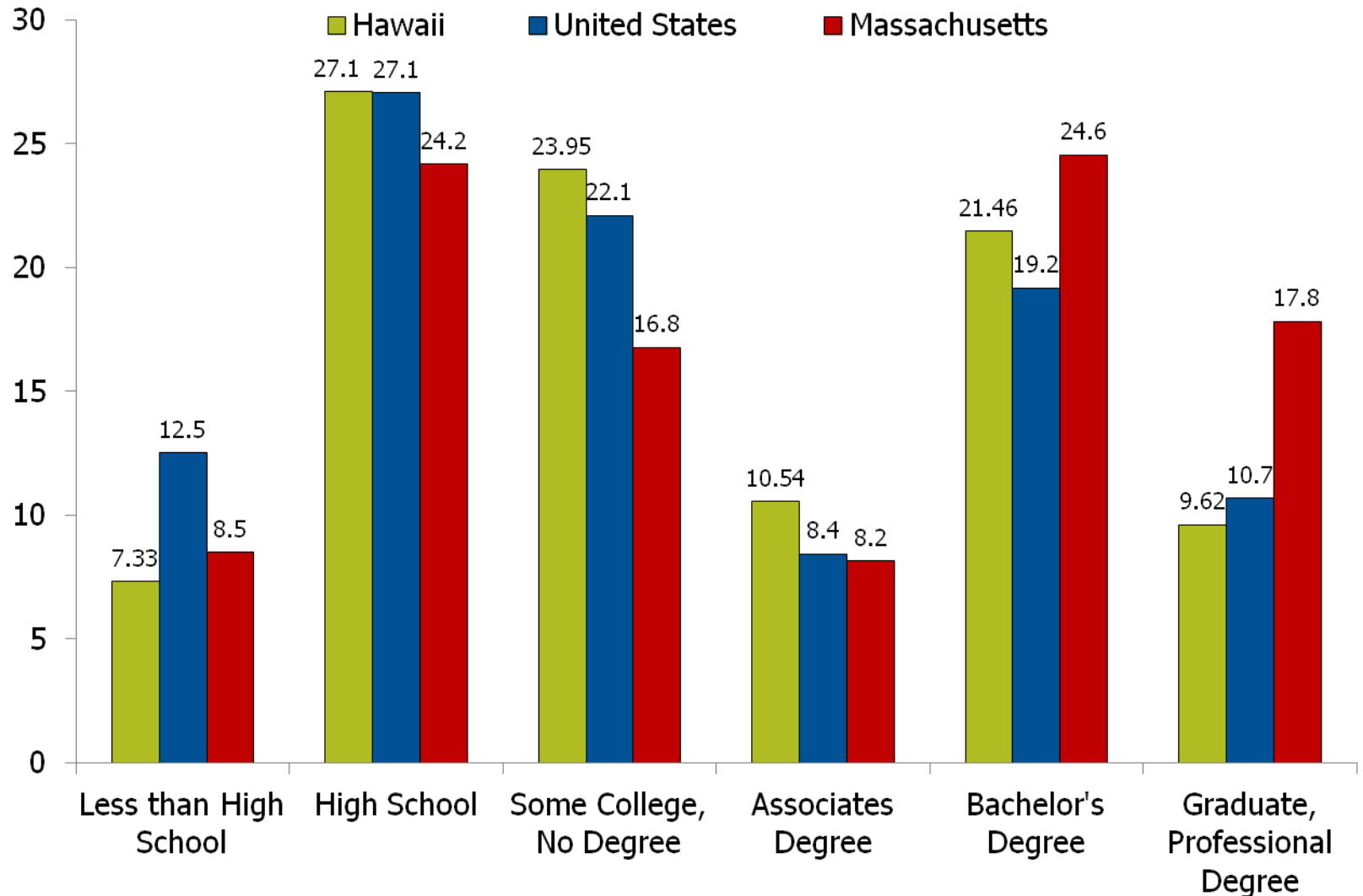


# Educational Attainment & Rank Among States, Hawaii (2010)

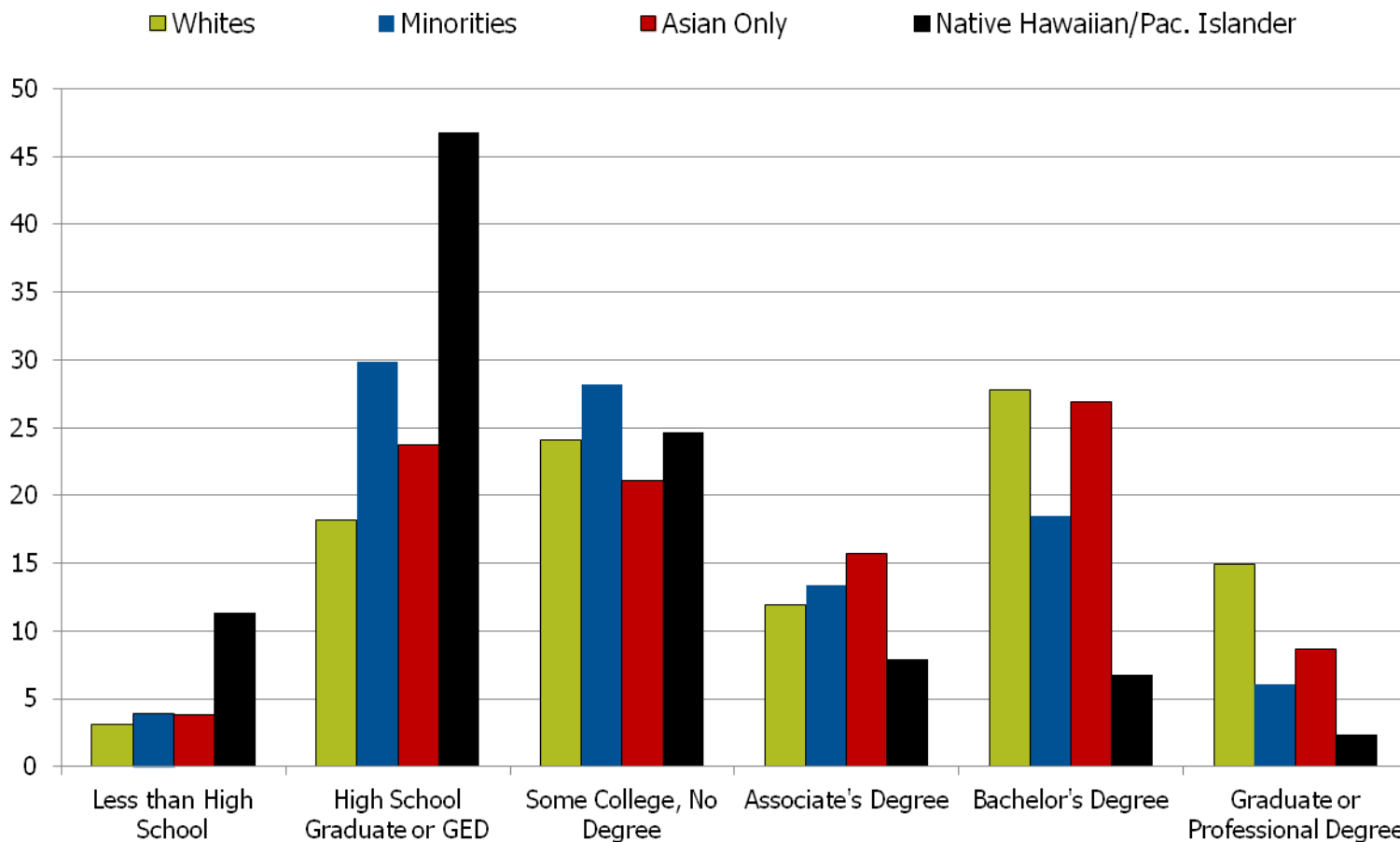


Source: U.S. Census Bureau, 2010 American Community Survey Public Use Microdata Sample Files

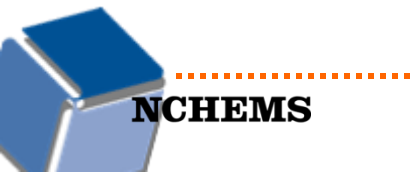
# Educational Attainment of Working Aged Adults Aged 25 to 64 – Hawaii, the U.S., and Most Educated State (2010)



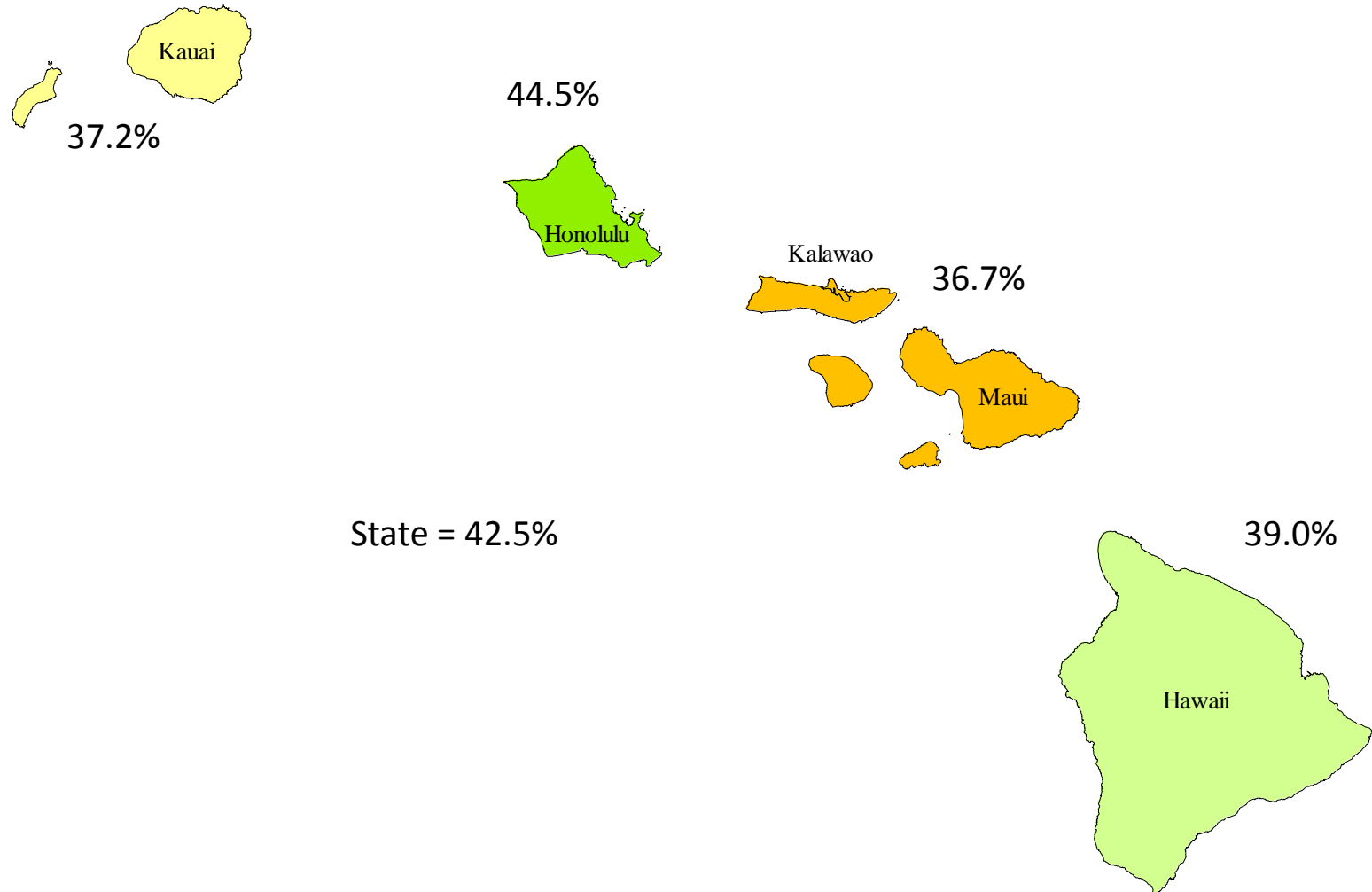
# Educational Attainment of Working Aged Adults Aged 25 to 64 by Race – Hawaii (2009)



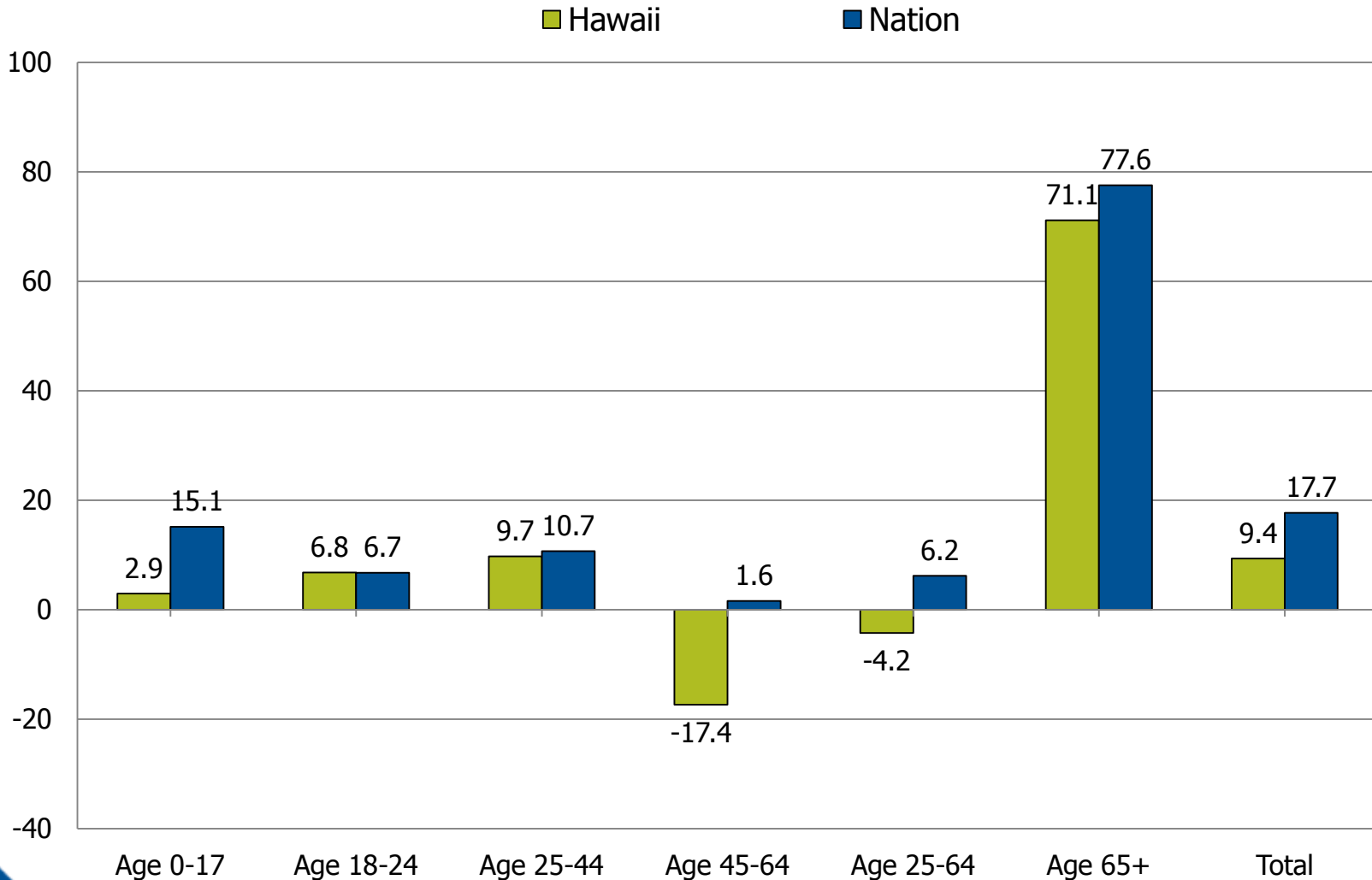
Note: minorities include Hispanic, African-American, American Indian



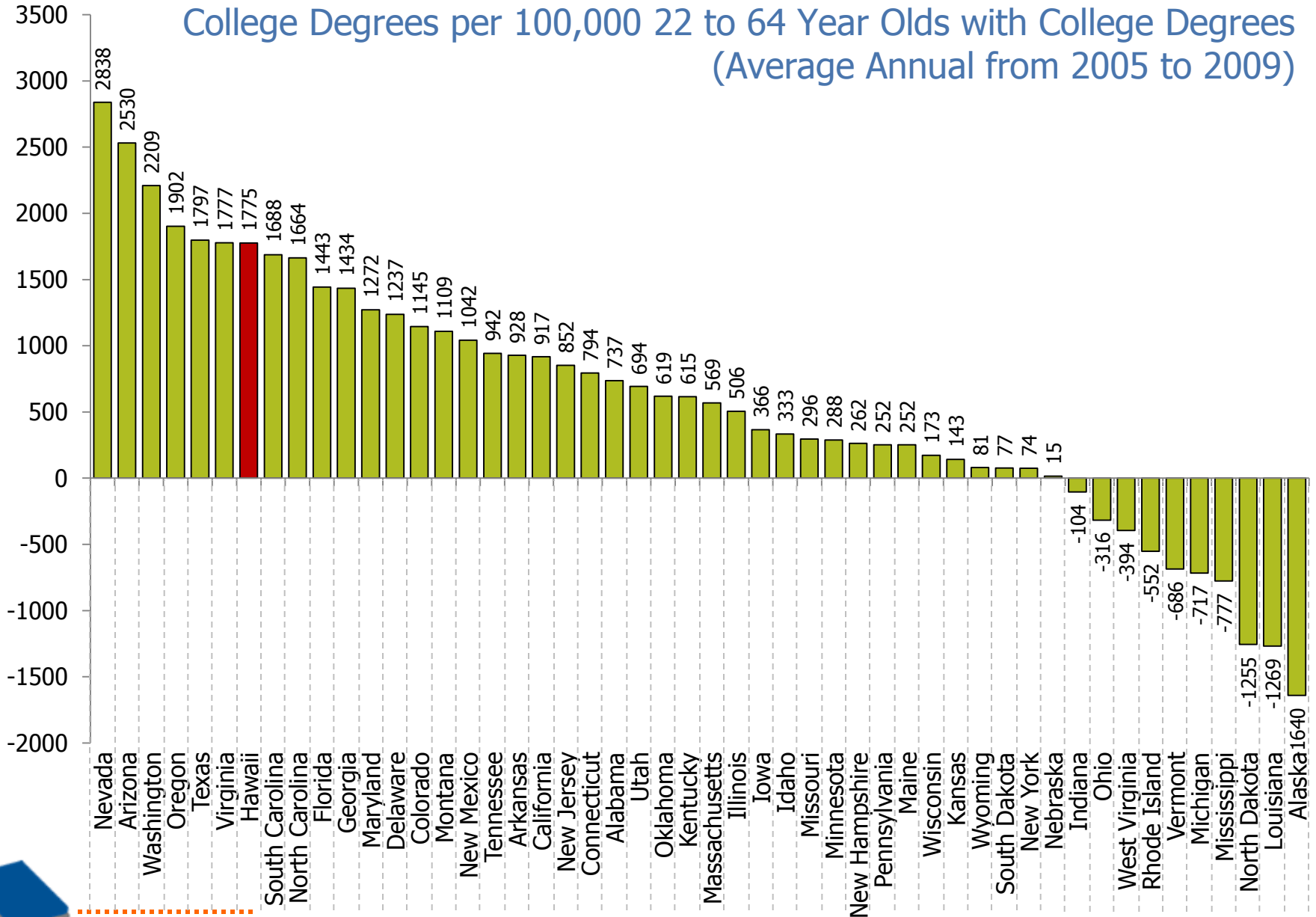
# Percent of Adults Aged 25 to 64 with College Degrees – Associate and Higher – by County (2005-2009)



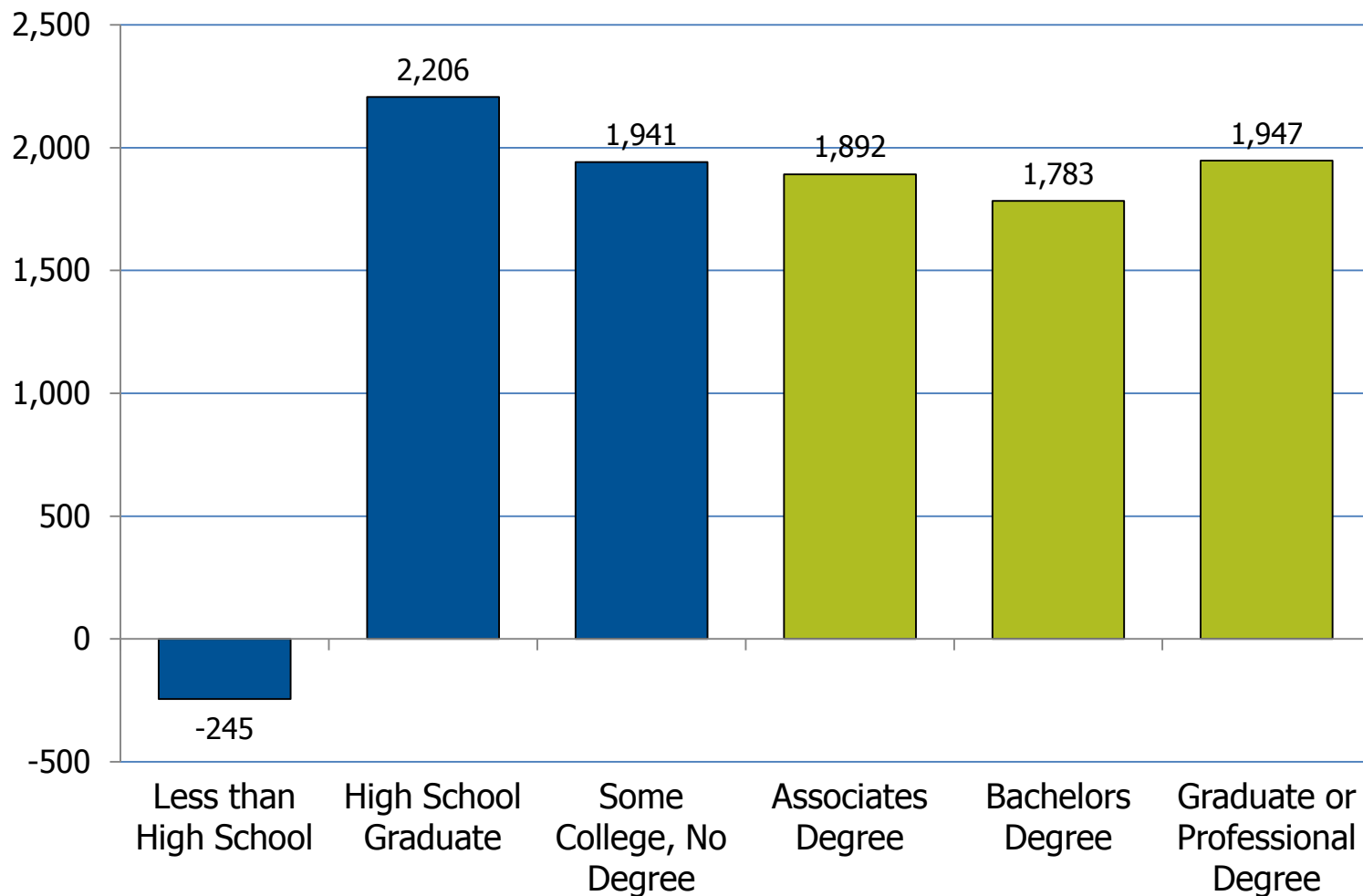
# Projected Percent Change in Population by Age Group, 2010 to 2030



# Migration Rates of College Graduates: Net Migration of 22 to 64 Year Olds with College Degrees per 100,000 22 to 64 Year Olds with College Degrees (Average Annual from 2005 to 2009)

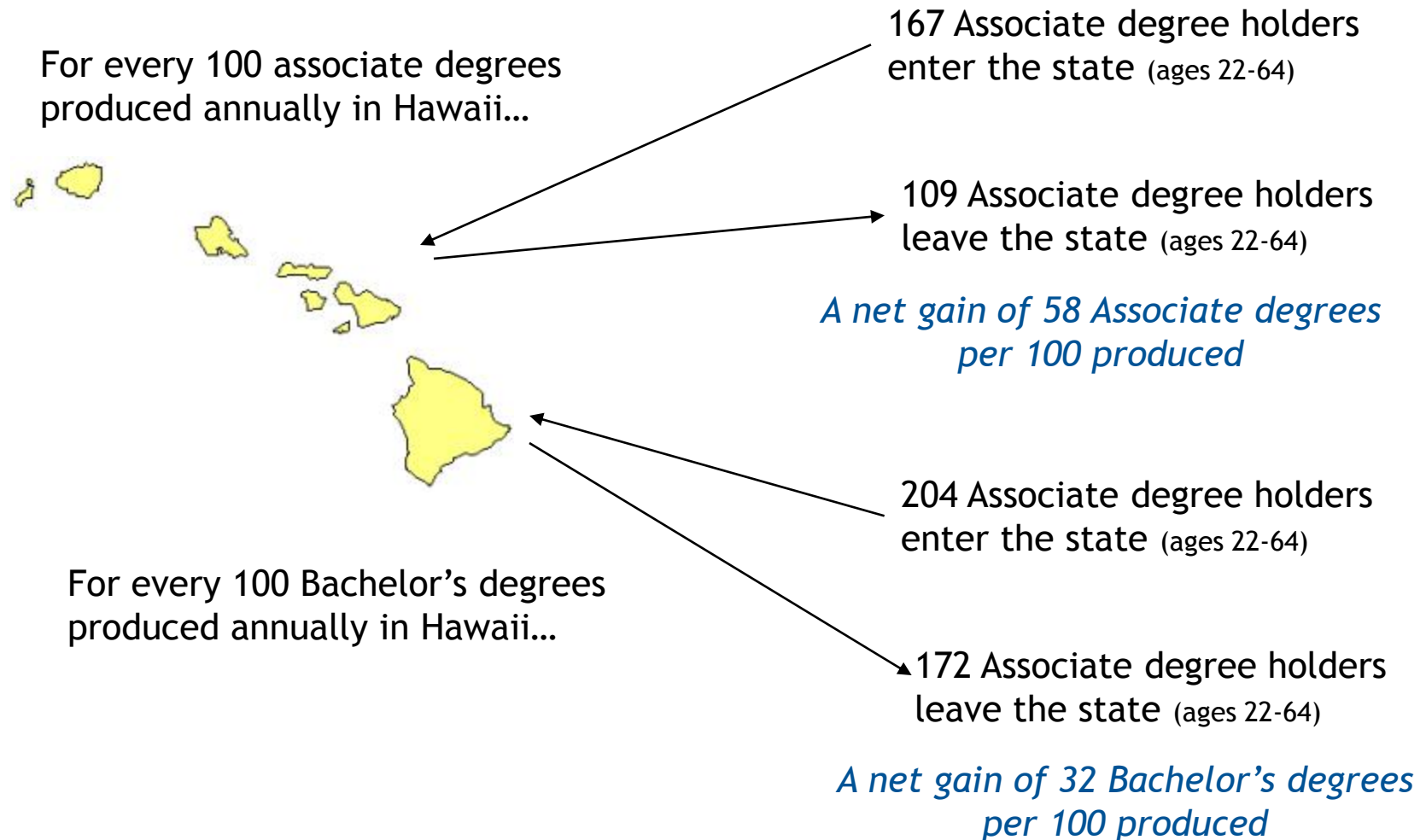


# Average Annual Net Migration of 22 to 64 Year Olds by Education Level (2005-09)

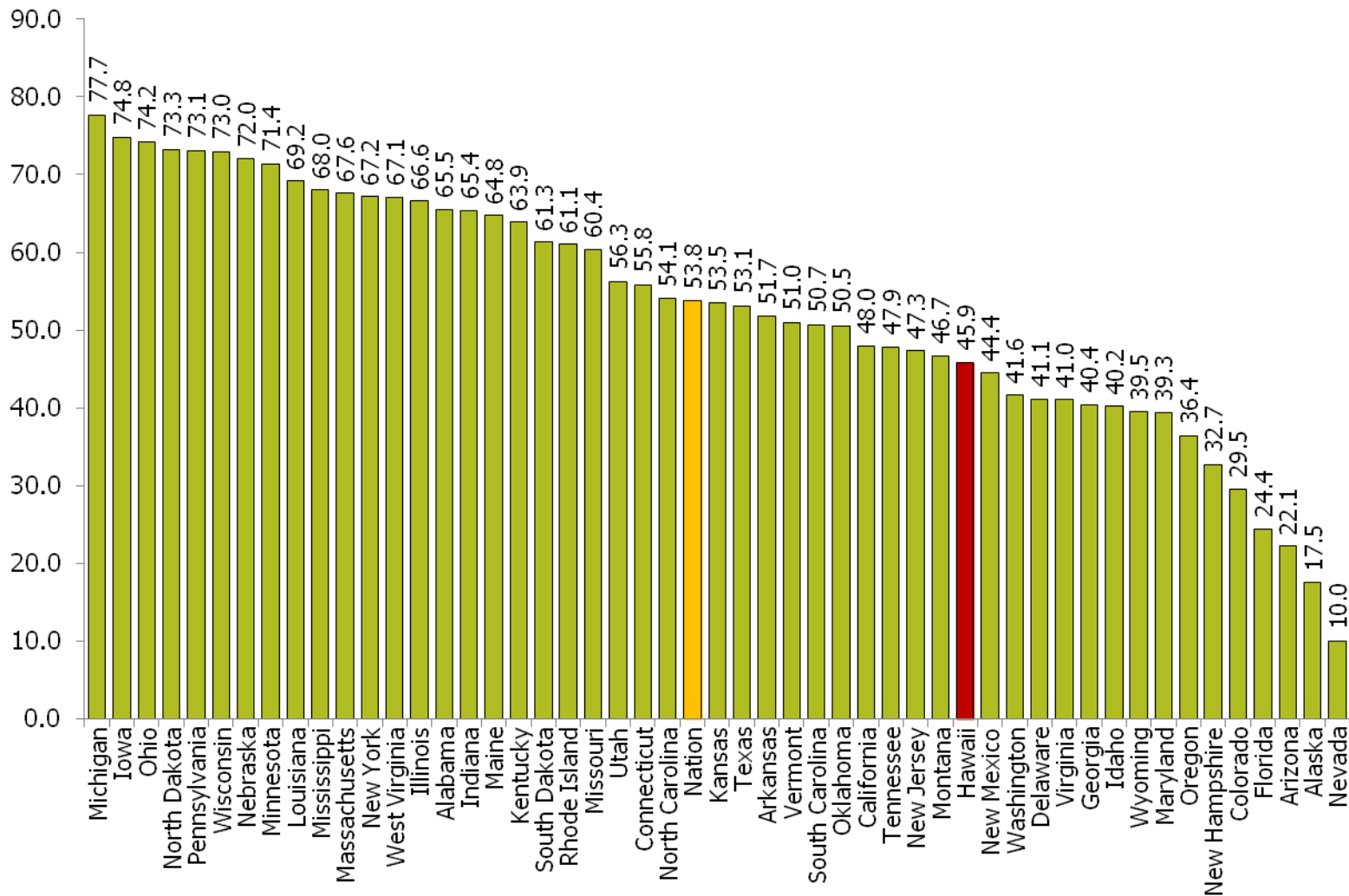


# Is Hawaii Benefitting from the Migration of College Graduates?

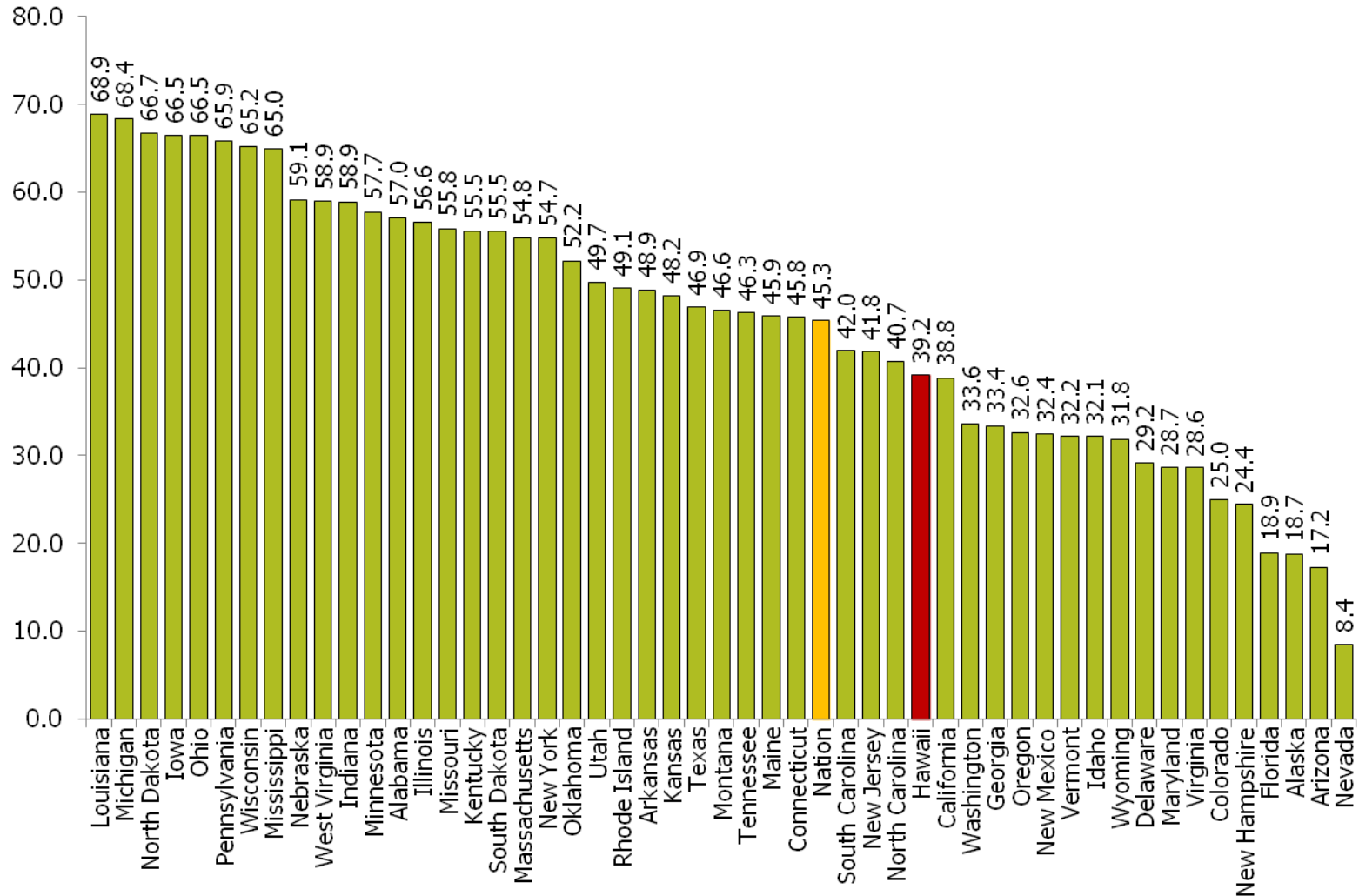
## Recent Annual Degree-Production and Migration Patterns



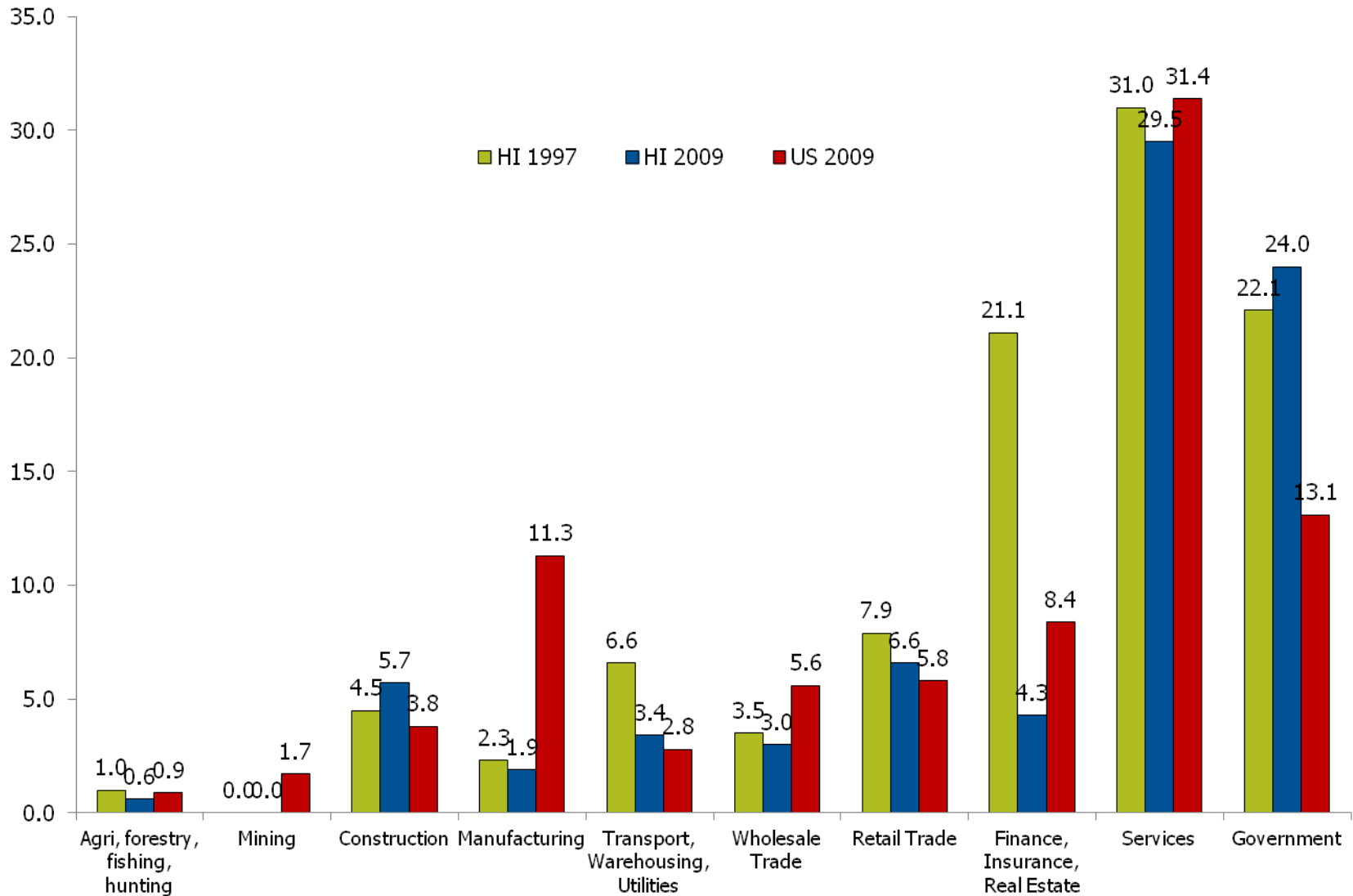
# Percent of Population with an Associates Degree who are State Natives, 2009



# Percent of Population with an Bachelor's Degree who are State Natives, 2009



# Percent of Total Gross State Product by Industry and Comparison to U.S.



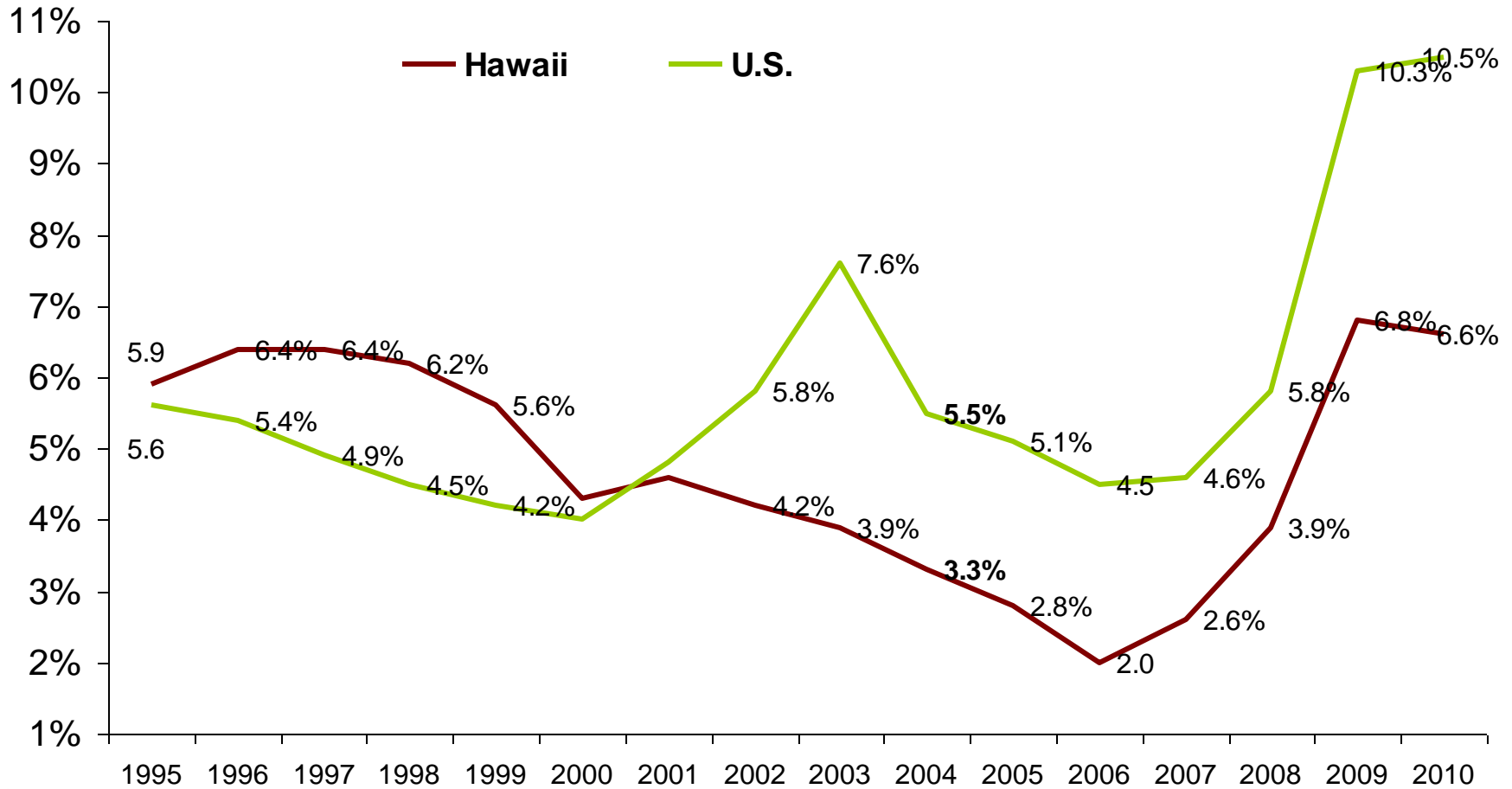
# Hawaii Average Annual Employment by Major Occupation Group and Number of Workers with a College Degree - 2005-09

Major Occupation Group (SOC-2)	Average Annual Employment	Average Annual Employment with College Degree	Percent with a College Degree
Management Occupations	58,801	33,794	57.5
Education, Training, and Library Occupations	38,159	30,639	80.3
Office and Administrative Support Occupations	88,417	30,591	34.6
Sales and Related Occupations	70,858	25,073	35.4
Healthcare Practitioners and Technical Occupations	28,784	23,710	82.4
Business and Financial Operations Occupations	26,586	18,637	70.1
Community and Social Service Occupations	10,999	8,364	76.0
Food Preparation and Serving Related Occupations	45,458	8,267	18.2
Installation, Maintenance, and Repair Occupations	25,901	7,904	30.5
Computer and Mathematical Occupations	10,580	7,543	71.3
Protective Service Occupations	21,237	7,517	35.4
Architecture and Engineering Occupations	9,825	7,127	72.5
Arts, Design, Entertainment, Sports, and Media Occupations	13,314	6,647	49.9
Personal Care and Service Occupations	22,399	6,565	29.3
Construction and Extraction Occupations	40,474	6,279	15.5
Transportation and Material Moving Occupations	31,838	5,742	18.0
Life, Physical, and Social Science Occupations	6,511	5,498	84.4
Legal Occupations	5,910	5,270	89.2
Healthcare Support Occupations	13,308	4,816	36.2
Production Occupations	19,516	4,238	21.7
Building and Grounds Cleaning and Maintenance Occupations	31,005	4,048	13.1
Farming, Fishing, and Forestry Occupations	4,545	634	13.9
<b>Total Occupations</b>	<b>624,425</b>	<b>258,903</b>	<b>41.5</b>

# Hawaii Average Annual Employment by Major Industry Group and Number of Workers with a College Degree - 2005-09

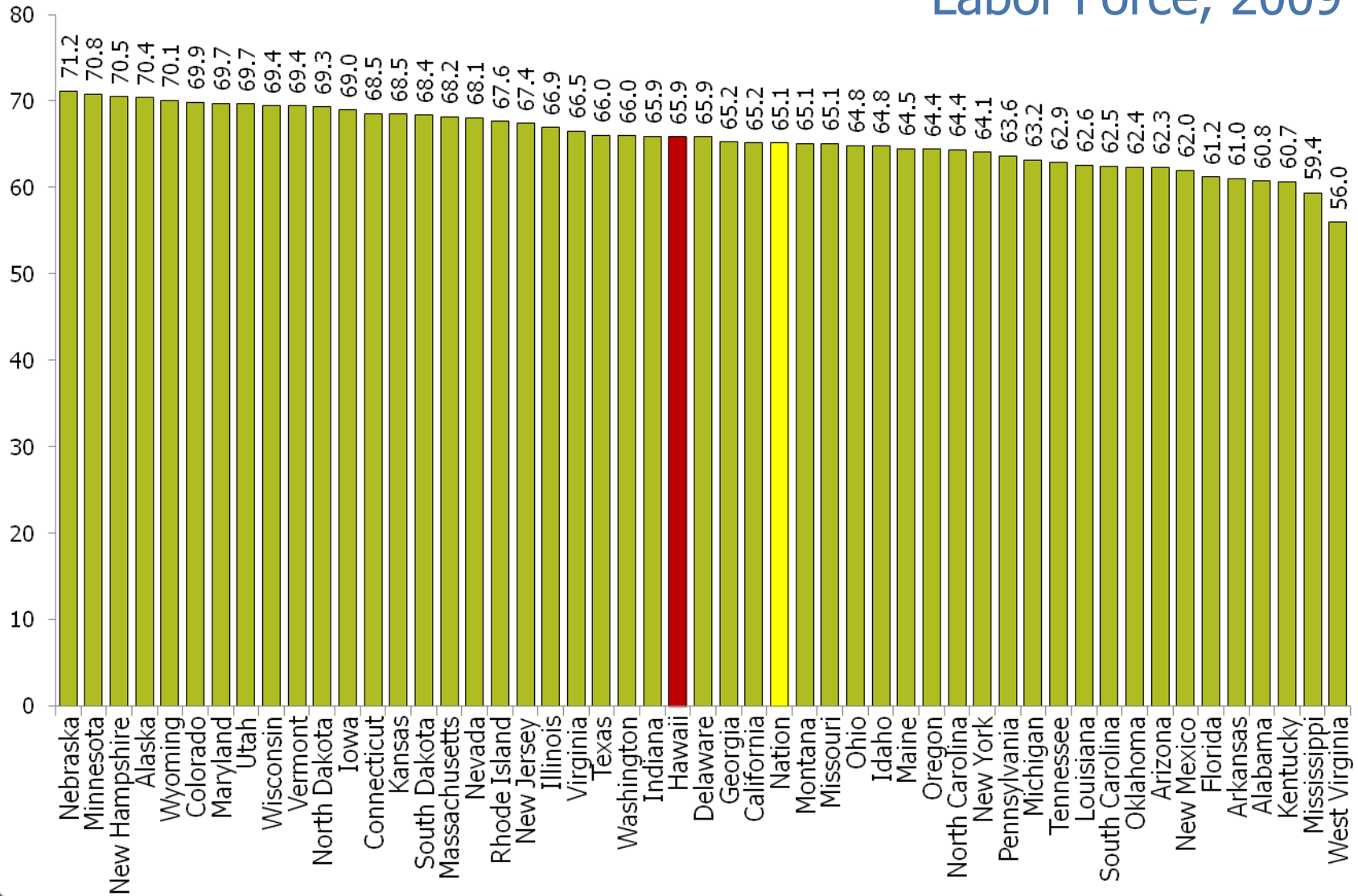
Major Industry Group (NAICS-2)	Average Annual Employment	Average Annual Employment with College Degree	Percent with a College Degree
Educational Services	57,930	41,441	71.5
Health Care and Social Assistance	63,003	36,769	58.4
Public Administration	71,483	34,873	48.8
Professional, Scientific, and Technical Services	32,226	22,932	71.2
Retail Trade	71,177	19,041	26.8
Accommodation and Food Services	74,602	15,904	21.3
Finance and Insurance	21,211	12,008	56.6
Construction	49,375	11,376	23.0
Other Services (except Public Administration)	26,834	9,634	35.9
Transportation and Warehousing	29,019	9,433	32.5
Real Estate and Rental and Leasing	19,607	8,696	44.4
Administrative and Support and Waste Management and Remediation Services	28,411	8,231	29.0
Manufacturing	20,335	6,861	33.7
Arts, Entertainment, and Recreation	16,811	5,995	35.7
Wholesale Trade	16,974	5,825	34.3
Information	11,717	5,408	46.2
Utilities	4,321	2,209	51.1
Agriculture, Forestry, Fishing and Hunting	8,836	2,097	23.7
Management of Companies and Enterprises	309	126	40.8
Mining, Quarrying, and Oil and Gas Extraction	244	44	18.0
<b>Total Industry</b>	<b>624,425</b>	<b>258,903</b>	<b>41.5</b>

# Unemployment Rates, Hawaii and U.S., 1995-2010

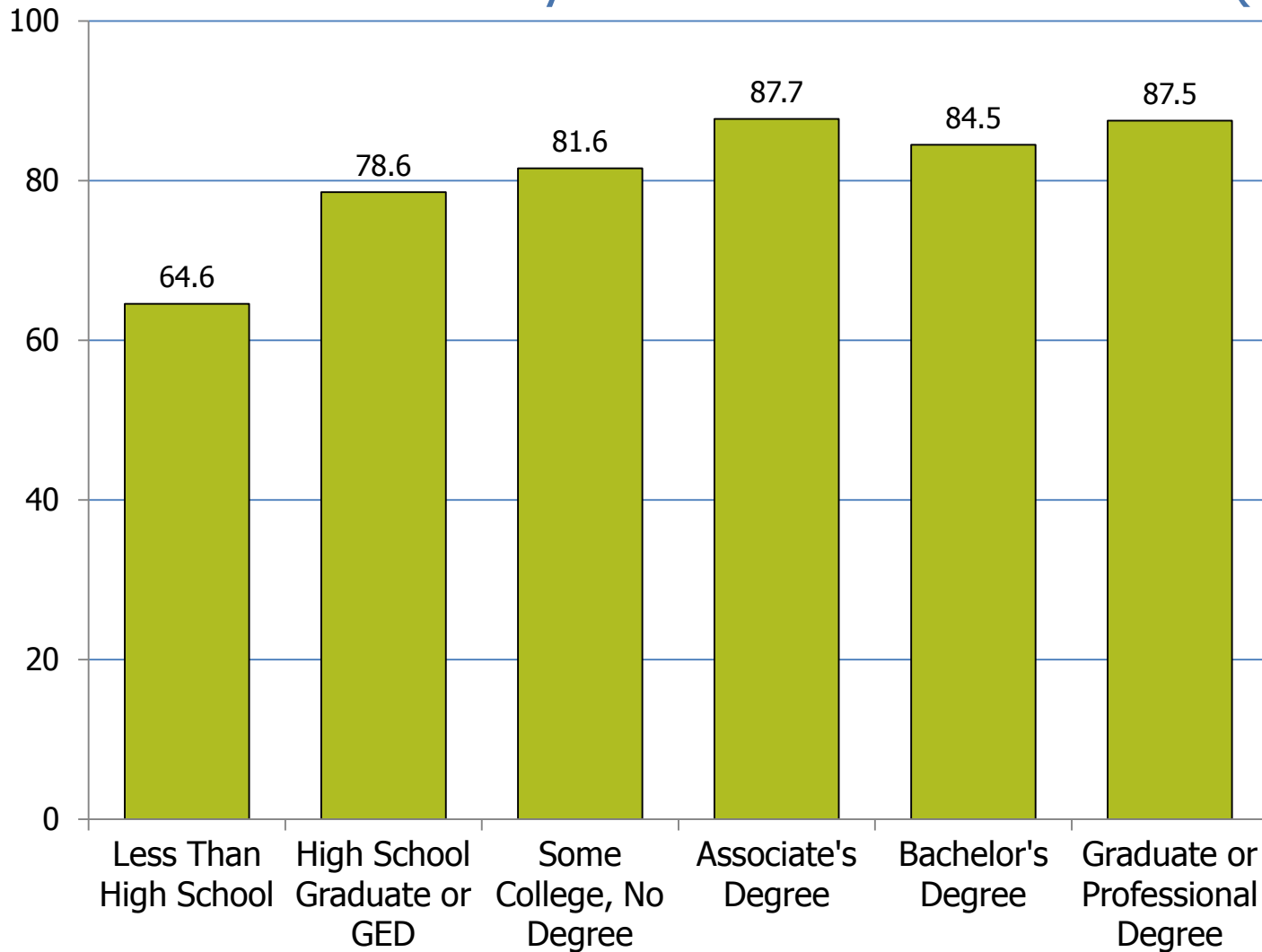


Source: U.S. Bureau of Labor Statistics

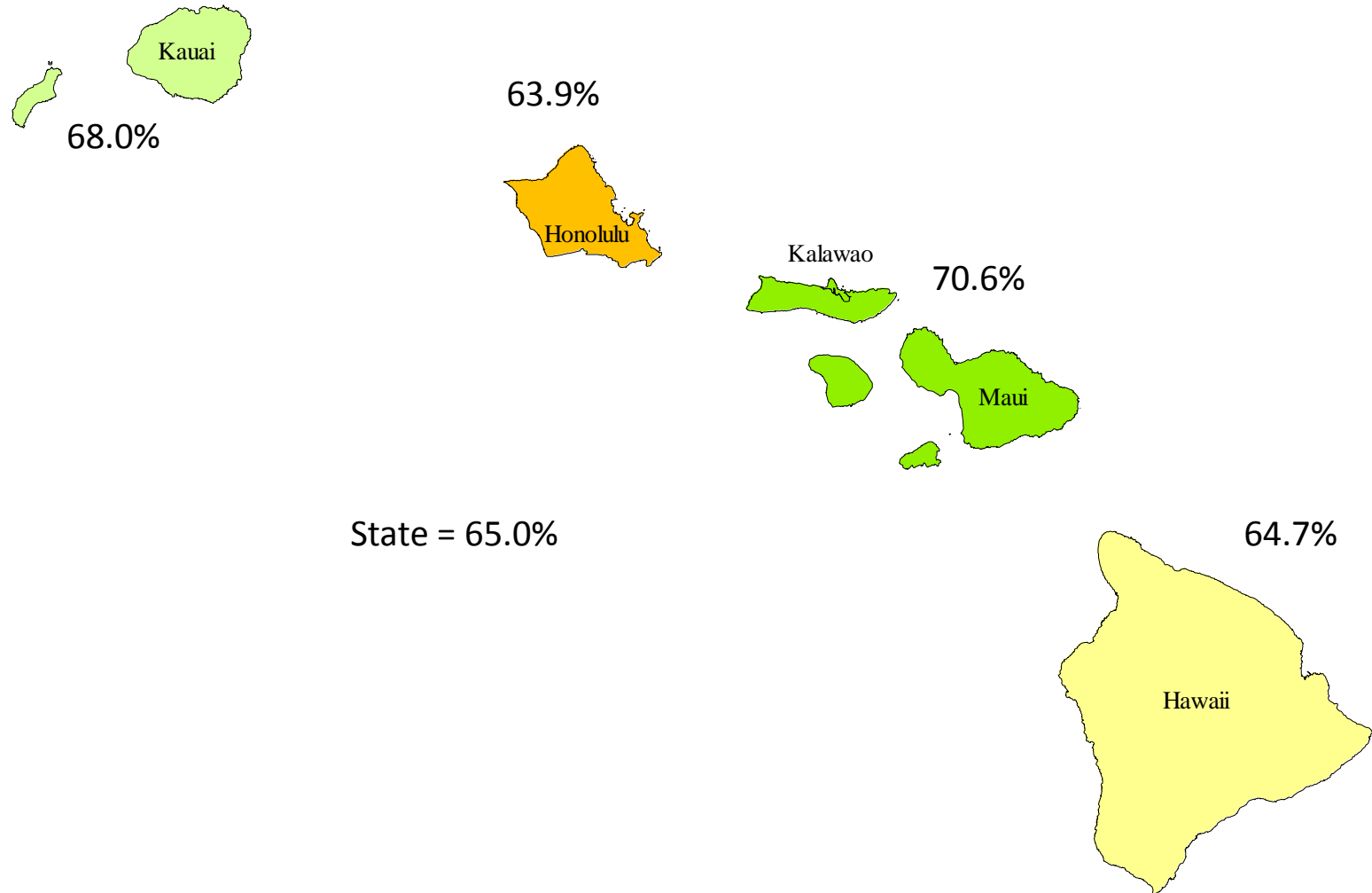
# Percent of Civilian Population Age 16+ Participating in the Labor Force, 2009



# Percentage of Working-Aged Adults (25 to 64) Participating in the Workforce – by Education Level Attained (2009)

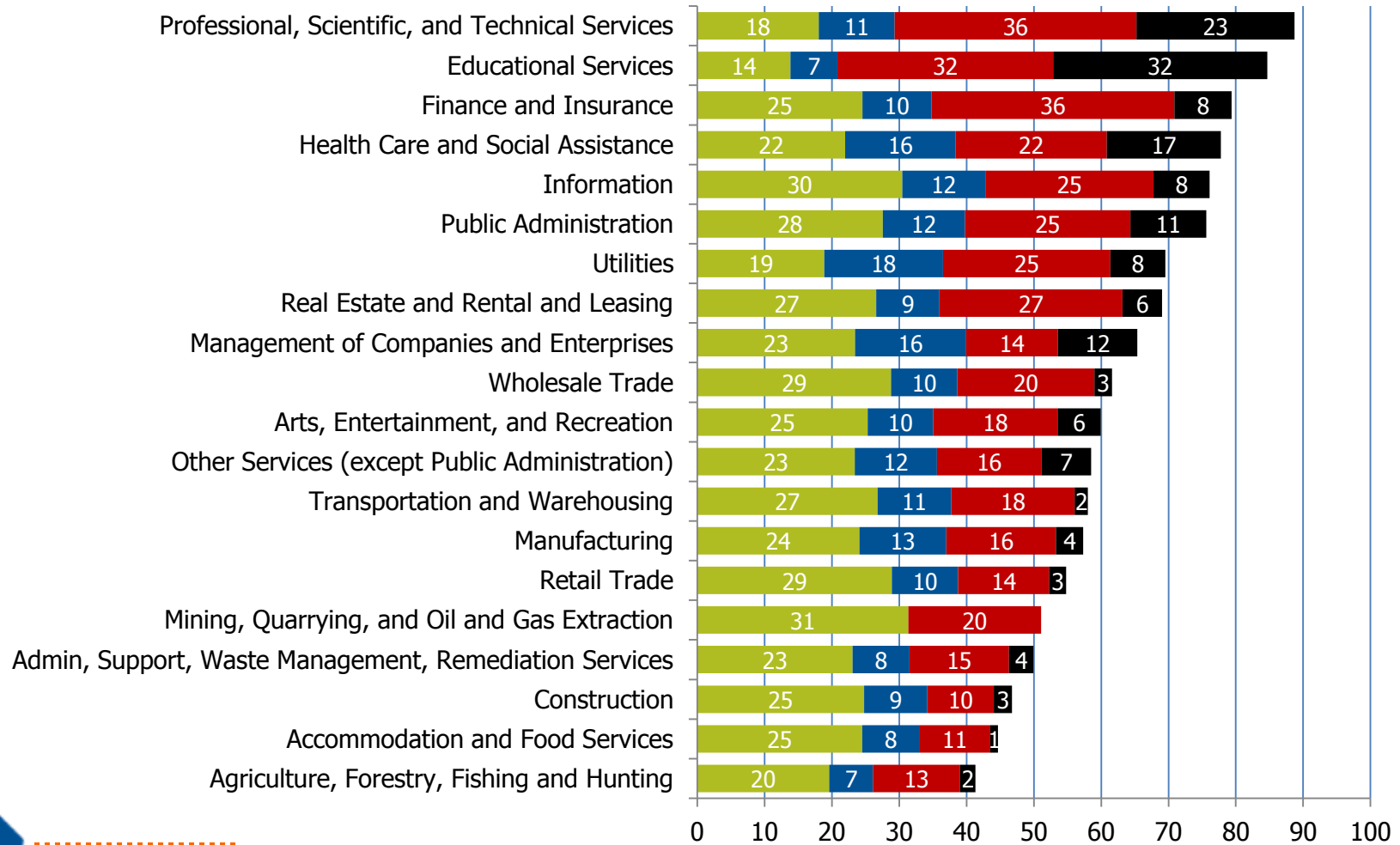


# Percent of Civilian Population Age 16 and Older Participating in the Workforce, 2005 - 2009



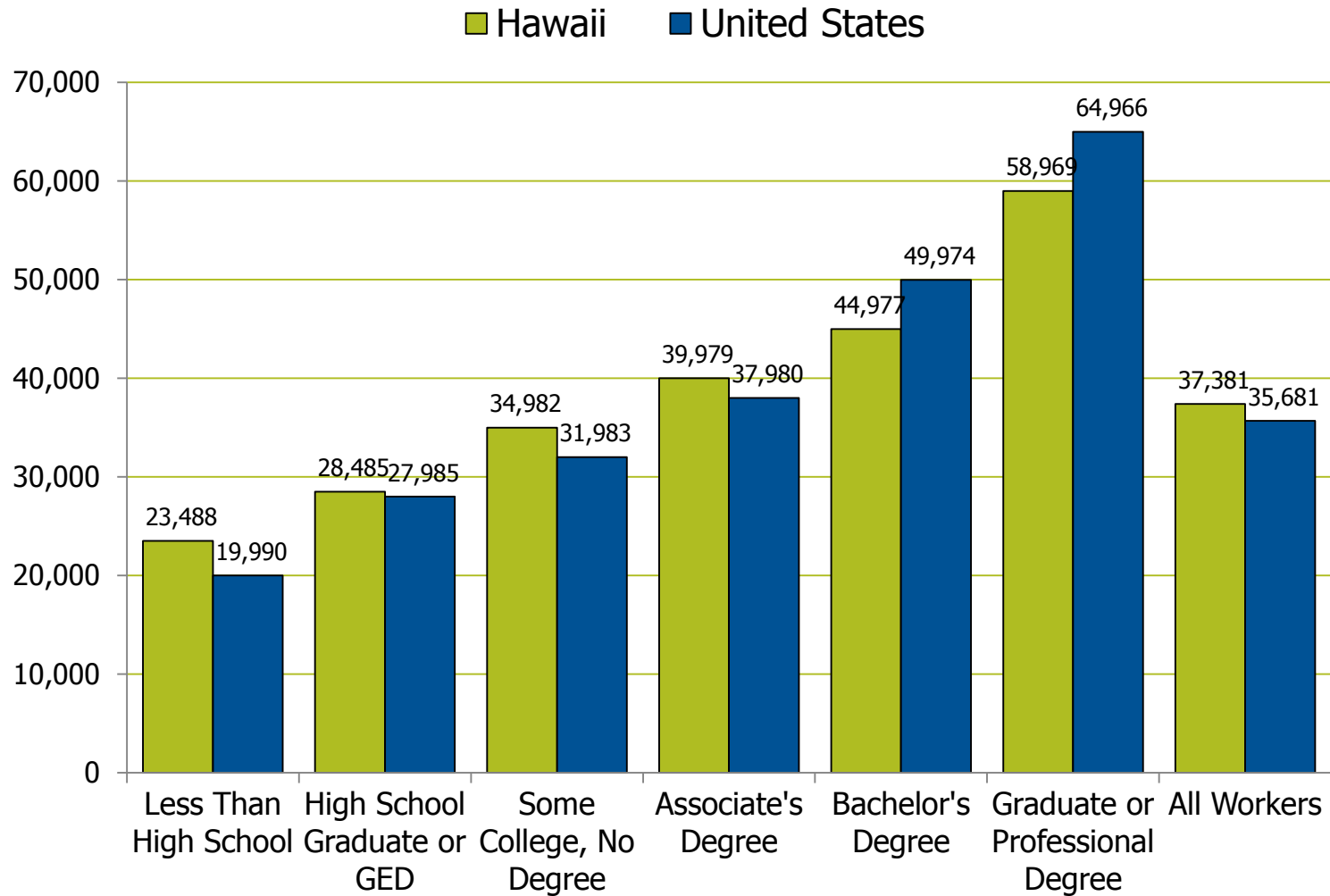
# College Attainment by Industry (2005-2009)

■ Some College, No Degree   
 ■ Associates   
 ■ Bachelor's   
 ■ Graduate, Professional

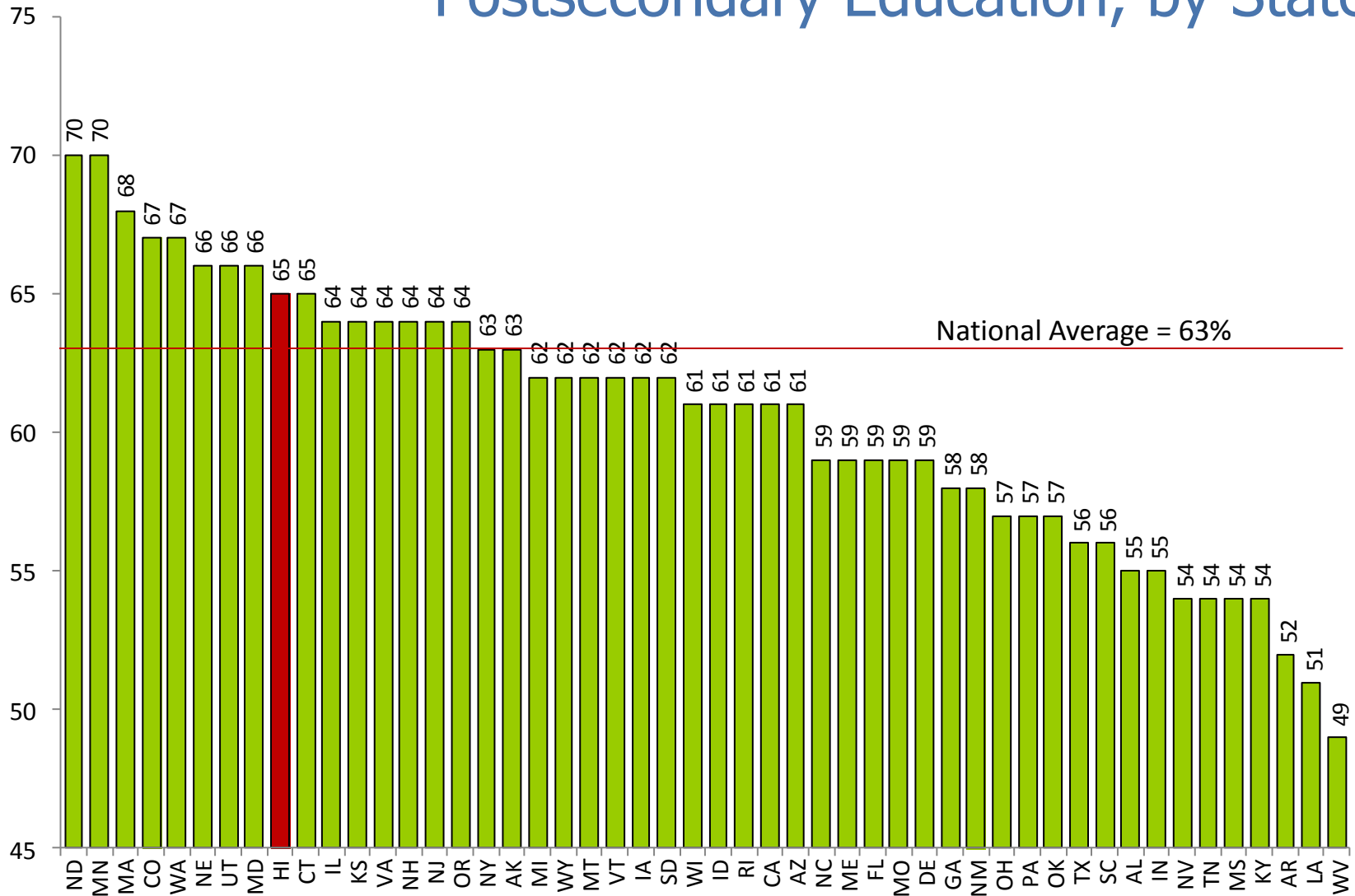


Source: 2005-09 American Community Survey (Public Use Microdata Sample)

# Median Annual Wages for Employed Workers Aged 25 to 64 - by Level of Education (2009)



# Percentage of Jobs in 2018 that Will Require a Postsecondary Education, by State



# Hawaii's Rank in Jobs Forecasted for 2018 by Education Level

<b>Education Level</b>	<b>2018 Jobs</b>	<b>Rank</b>
High School Dropouts	46,000	47
High School Graduates	212,000	28
Some College, No Degree	85,000	4
Associate's Degree	155,000	24
Bachelor's Degree	149,000	12
Graduate Degree	62,000	24

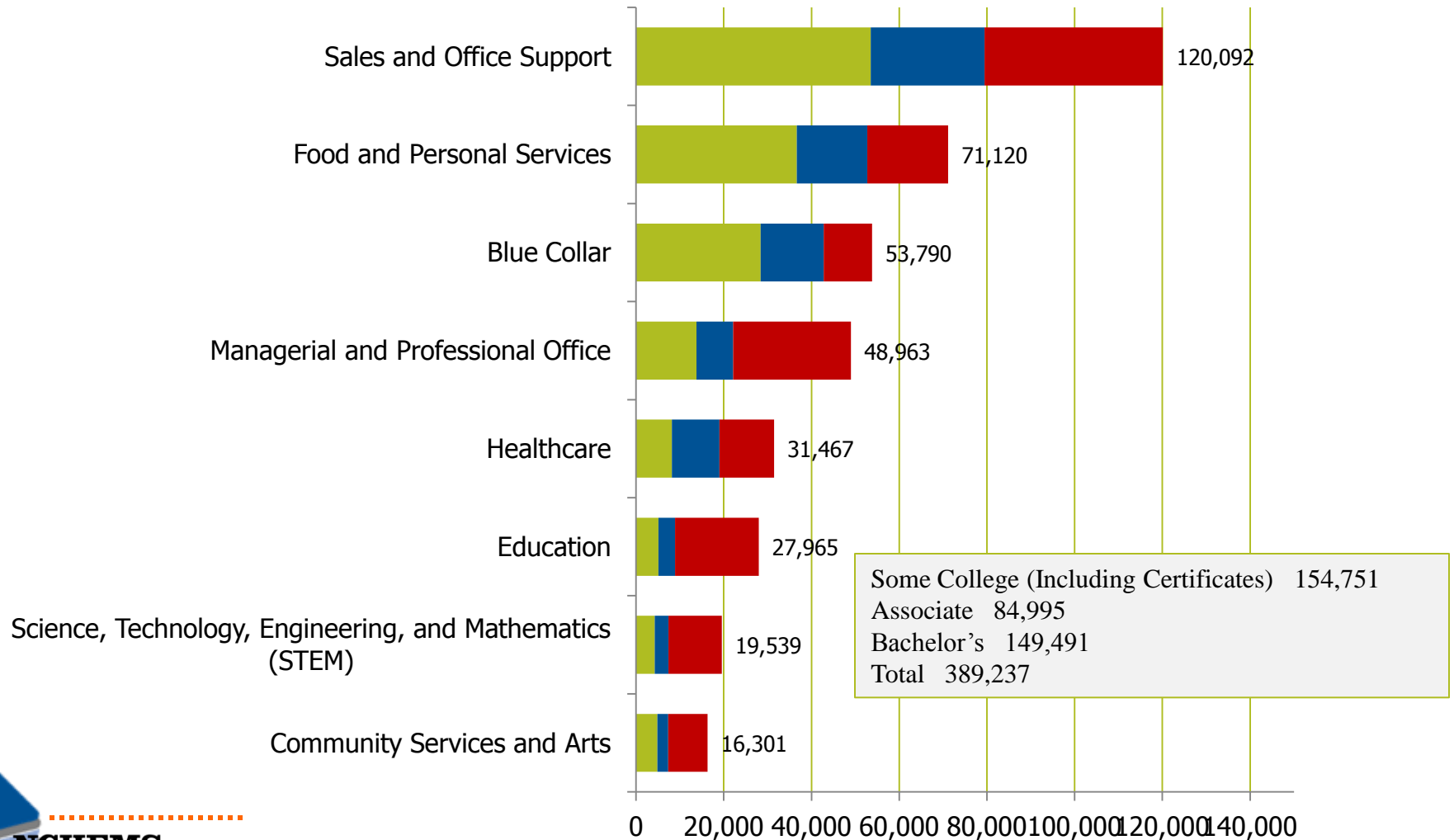
# Change in Jobs by Education Level: 2008 & 2018, Hawaii

<b>Education Level</b>	<b>2008 Jobs</b>	<b>2018 Jobs</b>	<b>Difference</b>
High School Dropouts	44,000	46,000	2,000
High School Graduates	205,000	212,000	7,000
Postsecondary	429,000	451,000	21,000

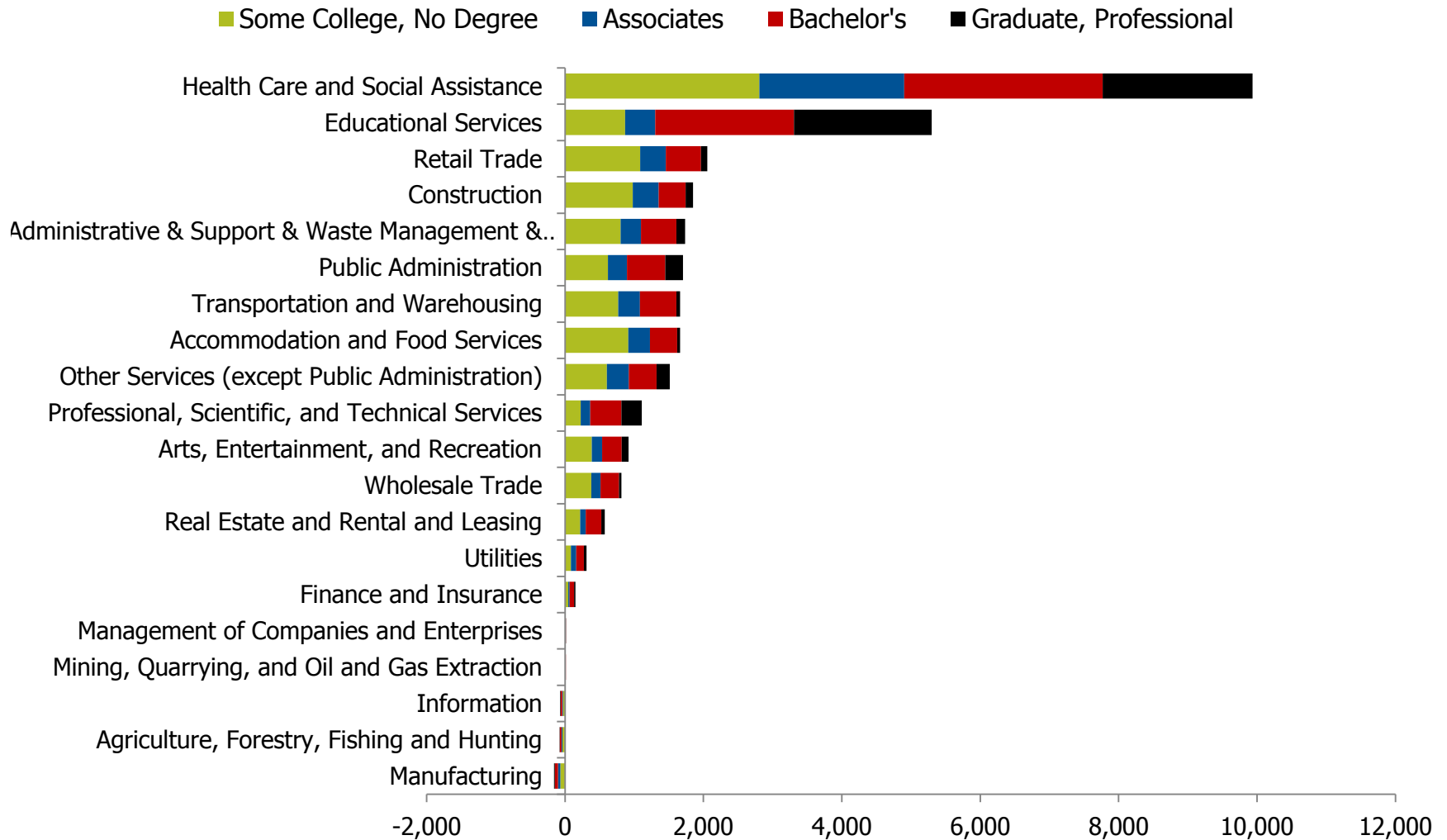
# Workforce Demand: Estimated Increases in Undergraduate Credentials Needed in Hawaii by 2018 – by Type of Occupation

(Even without more successful intervention in economic development)

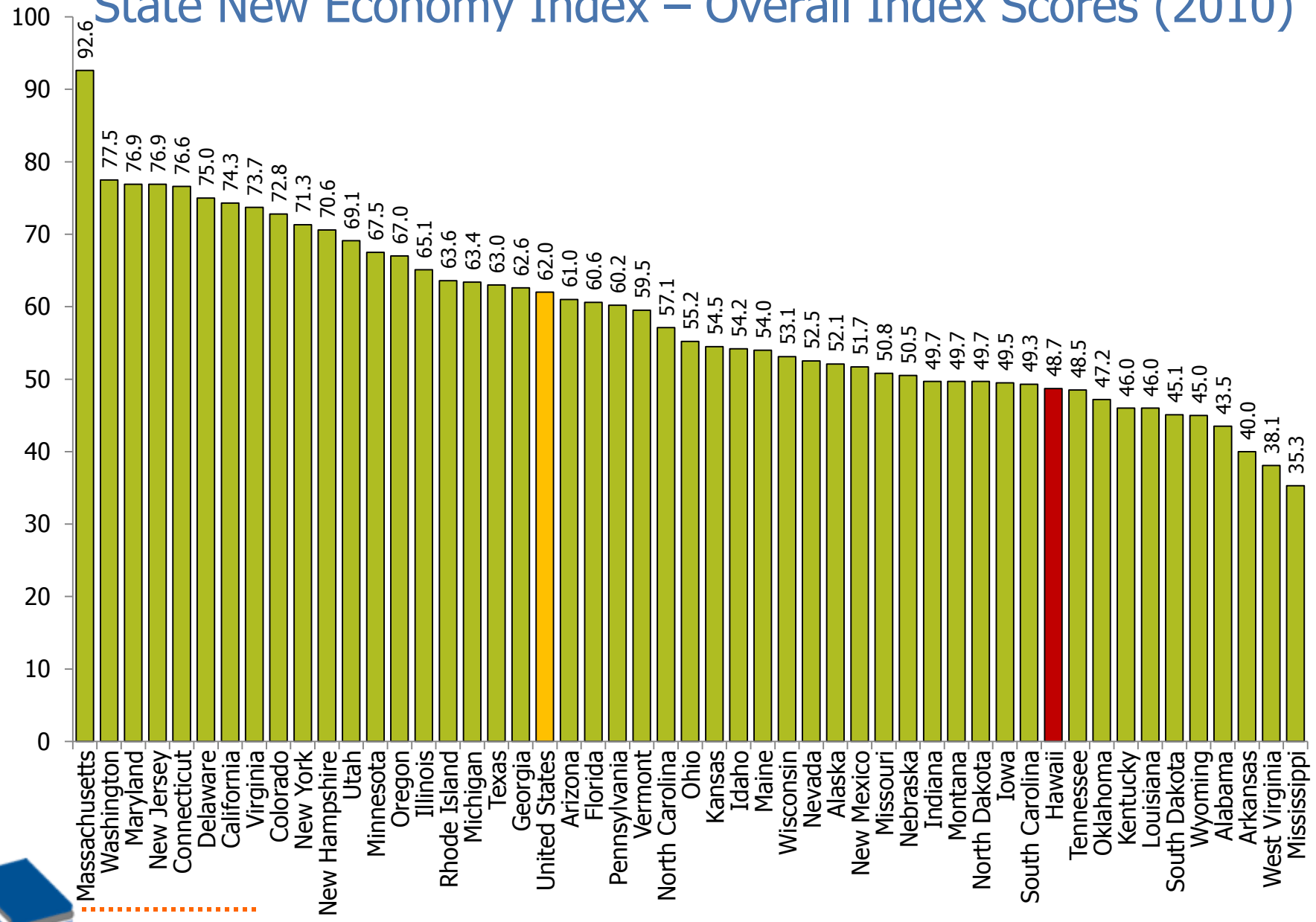
■ Some College   ■ Associates   ■ Bachelor's



# Additional College Degree-Holders Needed to Meet Projected Demand - by Industry (2008 to 2018)



# State New Economy Index – Overall Index Scores (2010)



Source: The Kauffman Foundation

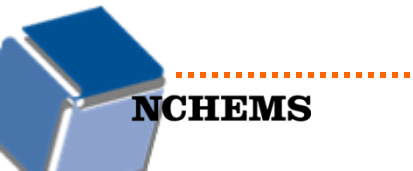
# State New Economy Index – Hawaii's Strengths and Weaknesses

## Strengths (Top 10)

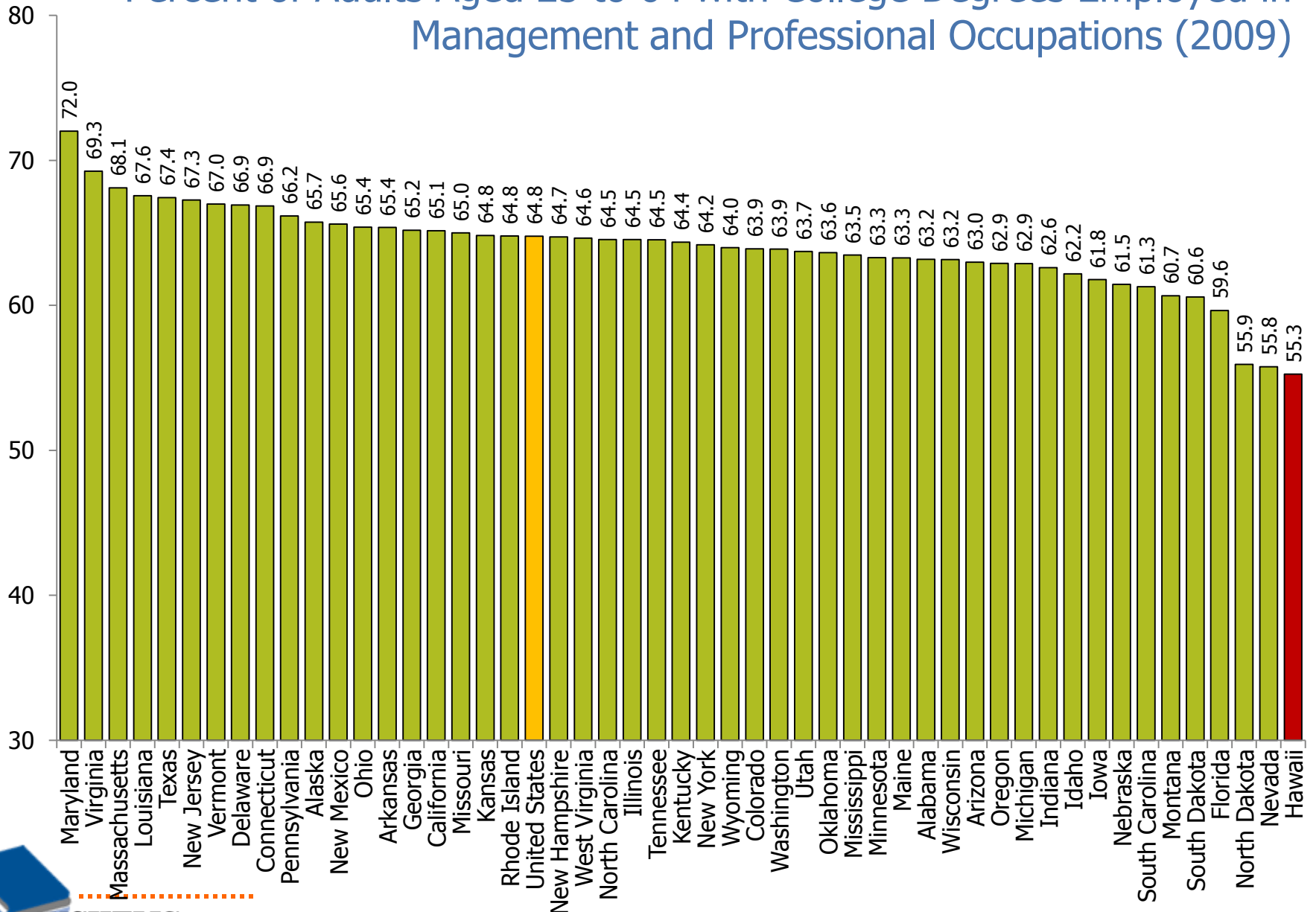
- Immigration of Knowledgeworkers (7<sup>th</sup>)
- Migration of U.S. Knowledge Workers (4<sup>th</sup>)
- Foreign Direct Investment (8<sup>th</sup>)

## Weaknesses (Bottom 10)

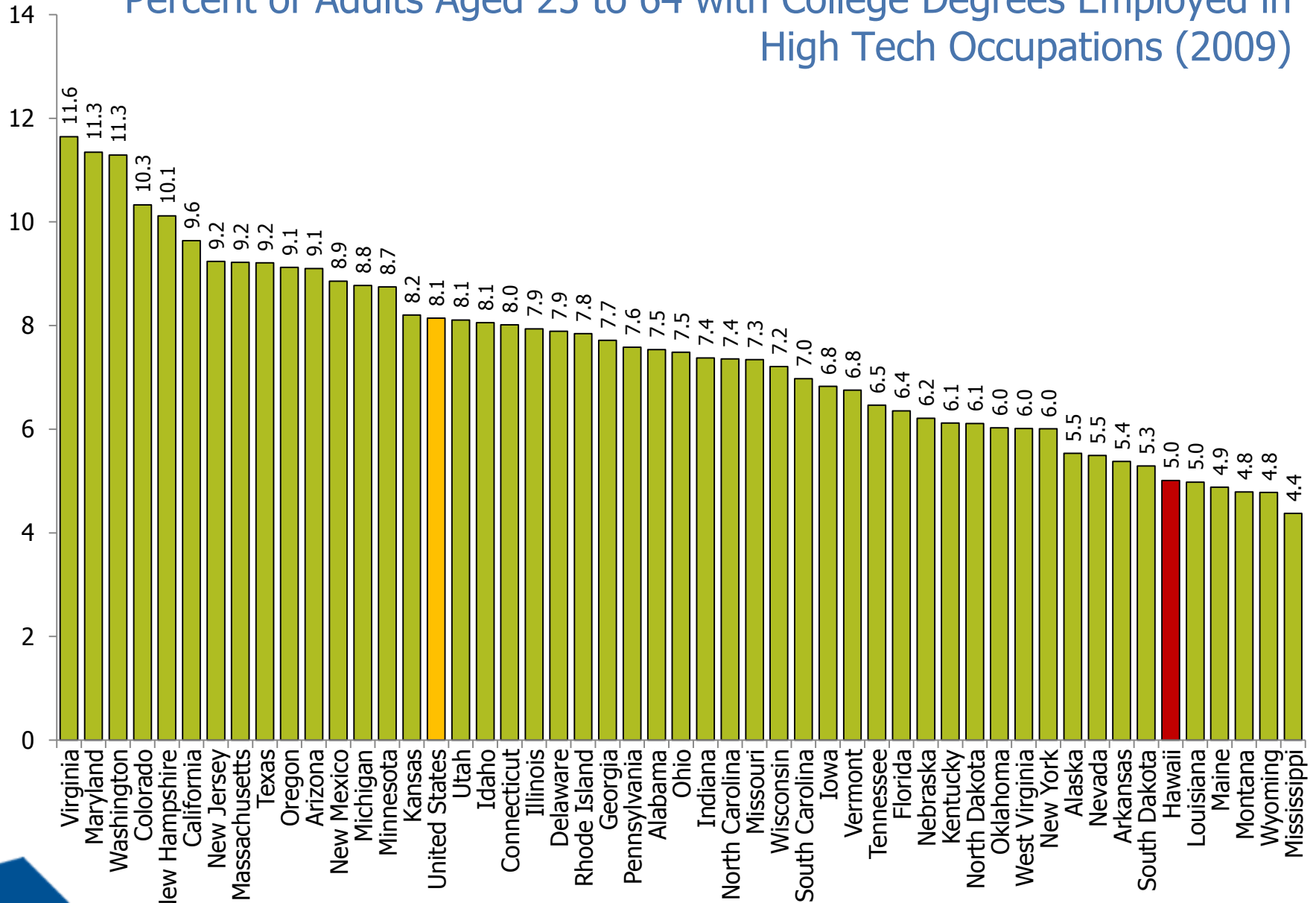
- IT Professionals (46<sup>th</sup>)
- Managerial, Professional, Technical Jobs (41<sup>st</sup>)
- Manufacturing Value-Added (46<sup>th</sup>)
- High-Wage Traded Services (46<sup>th</sup>)
- Export Focus of Manufacturing and Services (49<sup>th</sup>)
- Fastest Growing Firms (44<sup>th</sup>)
- Entrepreneurial Activity (45<sup>th</sup>)
- Inventor Patents (44<sup>th</sup>)
- High-Tech Jobs (41<sup>st</sup>)
- Scientists and Engineers (45<sup>th</sup>)
- Patents (42<sup>nd</sup>)
- Industry Investment in R&D (44<sup>th</sup>)



# Percent of Adults Aged 25 to 64 with College Degrees Employed in Management and Professional Occupations (2009)



# Percent of Adults Aged 25 to 64 with College Degrees Employed in High Tech Occupations (2009)



# What's Happened in Kentucky Since 2000?

Kentucky's State Rank in % Change from 2000 to Present

Percent of Adults 25 to 64 with College Degrees	1 <sup>st</sup>
Percent of Adults 25 to 44 with College Degrees	2 <sup>nd</sup>
Six-Year Graduation Rates at Four-Year Institutions	1 <sup>st</sup>
Three-Year Graduation Rates at Two-Year Institutions	2 <sup>nd</sup>
Total Undergraduate Credentials Produced (all of the states ahead are high growth states)	5 <sup>th</sup>
Undergraduate Credentials Awarded Relative to the Population with No College Degree (Market Penetration)	1 <sup>st</sup>
Personal Income per Capita	27 <sup>th</sup>



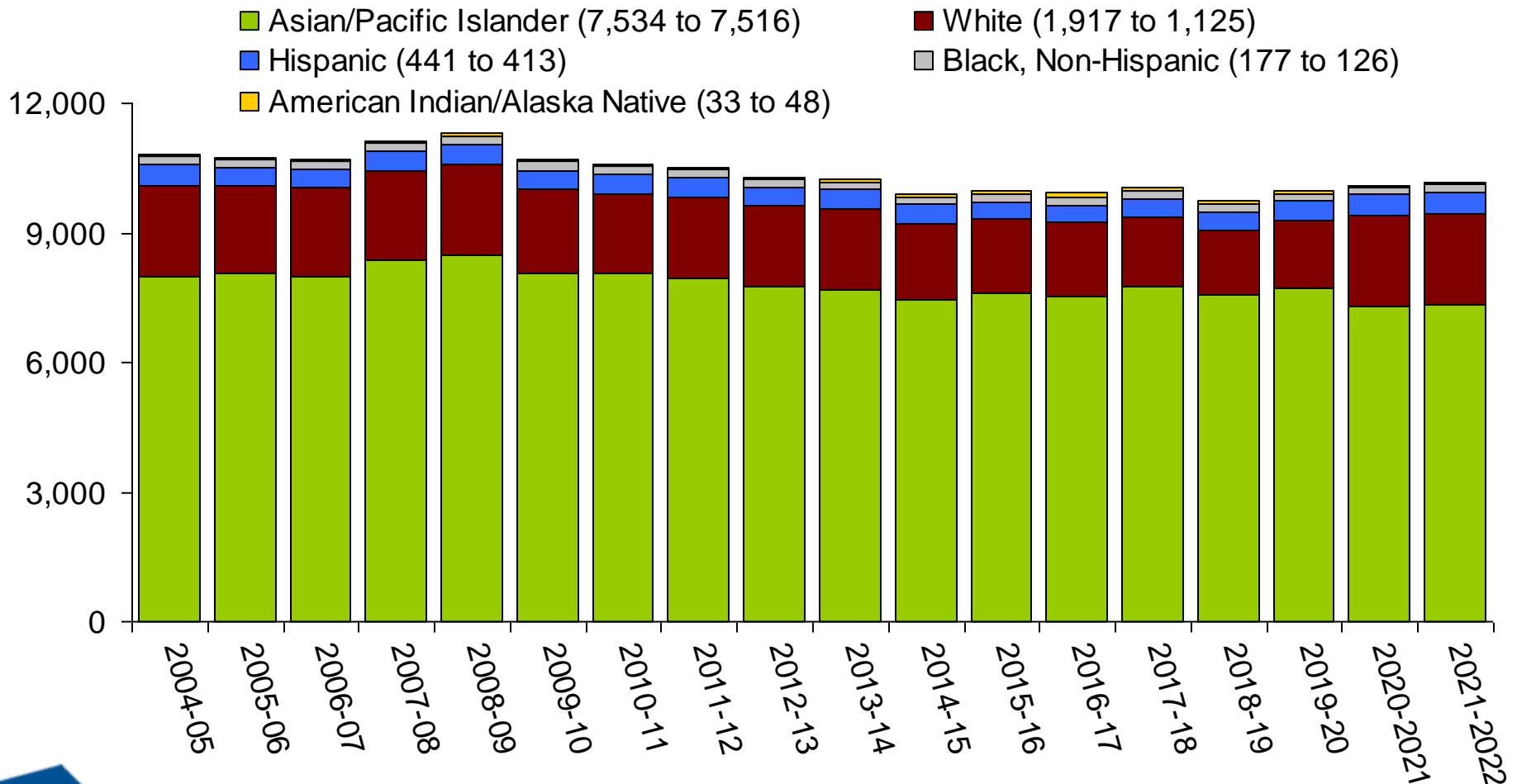
# Workforce Development

## The Education Pipeline

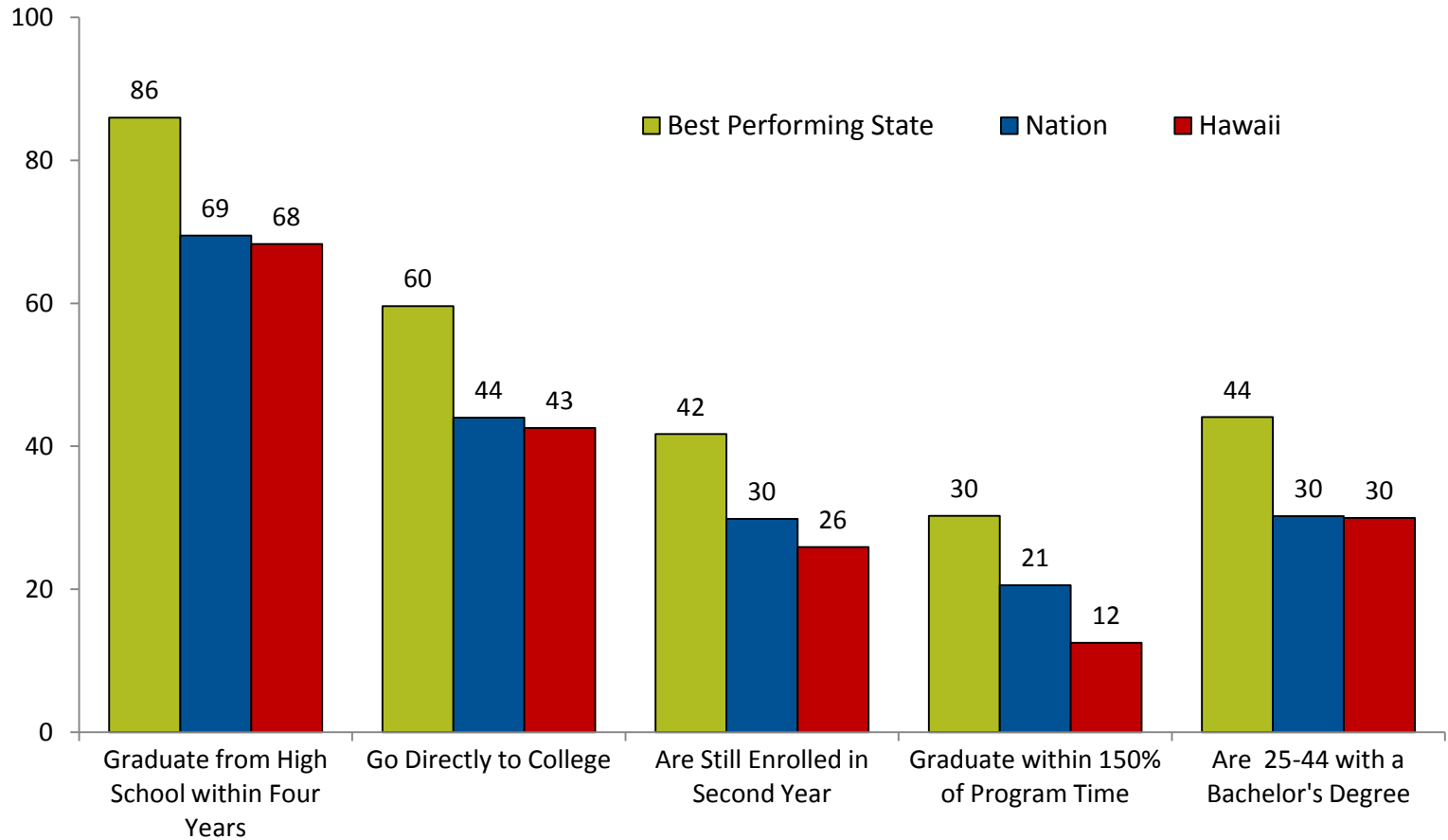
# Key Transition Points in the Education Pipeline

- Complete High School
- Enter College
- Finish College
- Enter the Workplace

# Projections of High School Graduates to 2022 By Race/Ethnicity—Hawaii

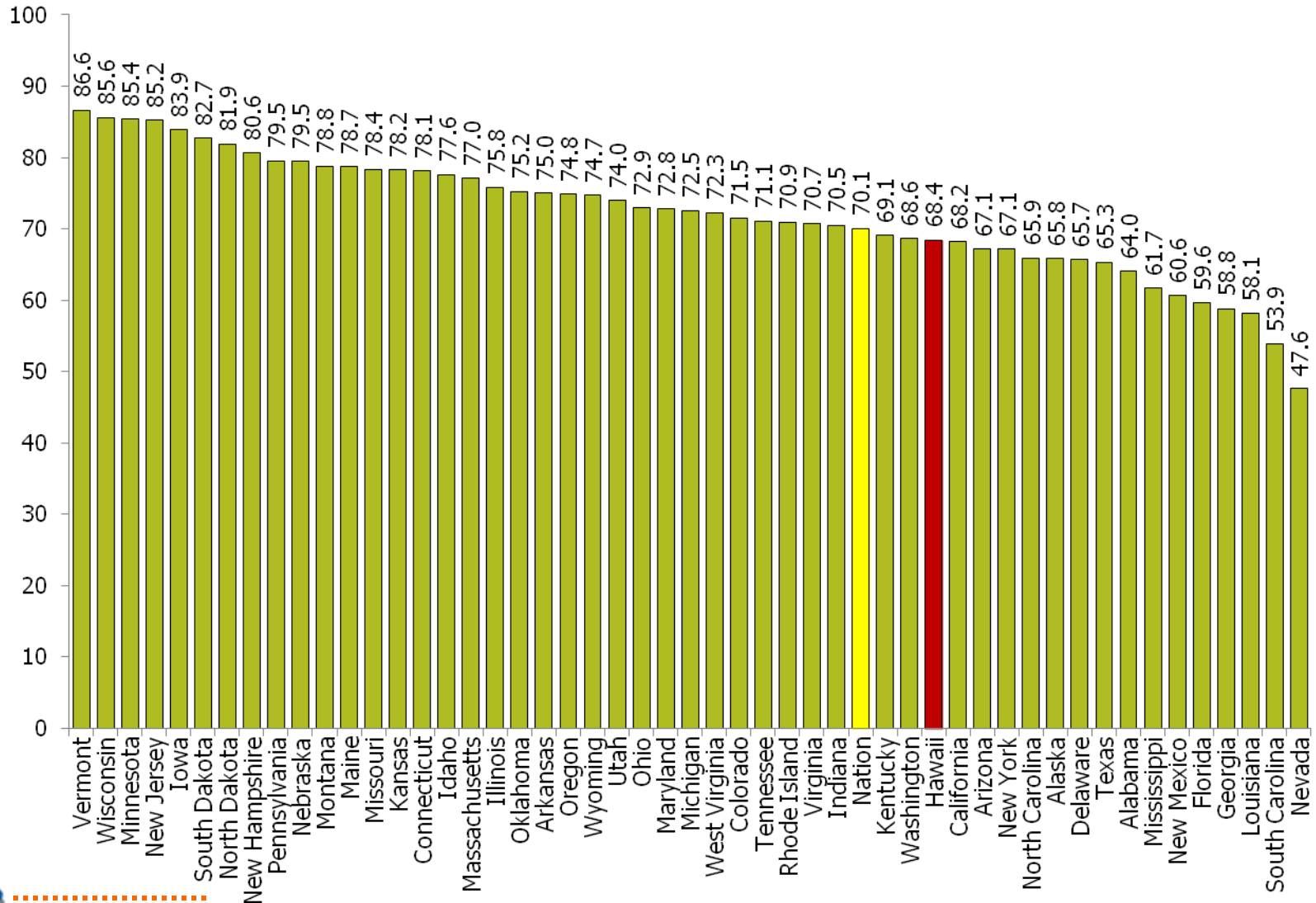


# Student Pipeline, 2009

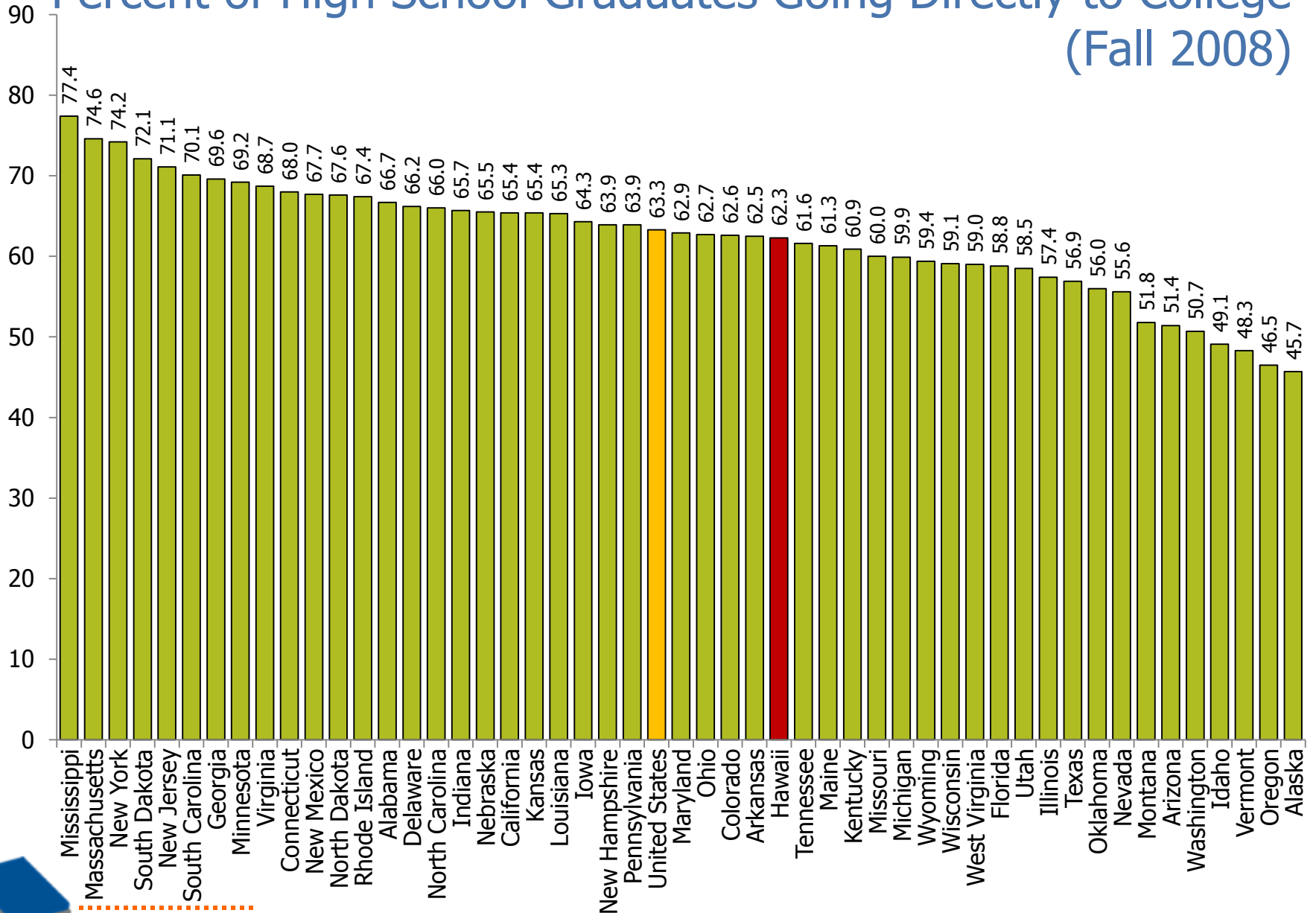


Of 100  
9th graders,  
how many...

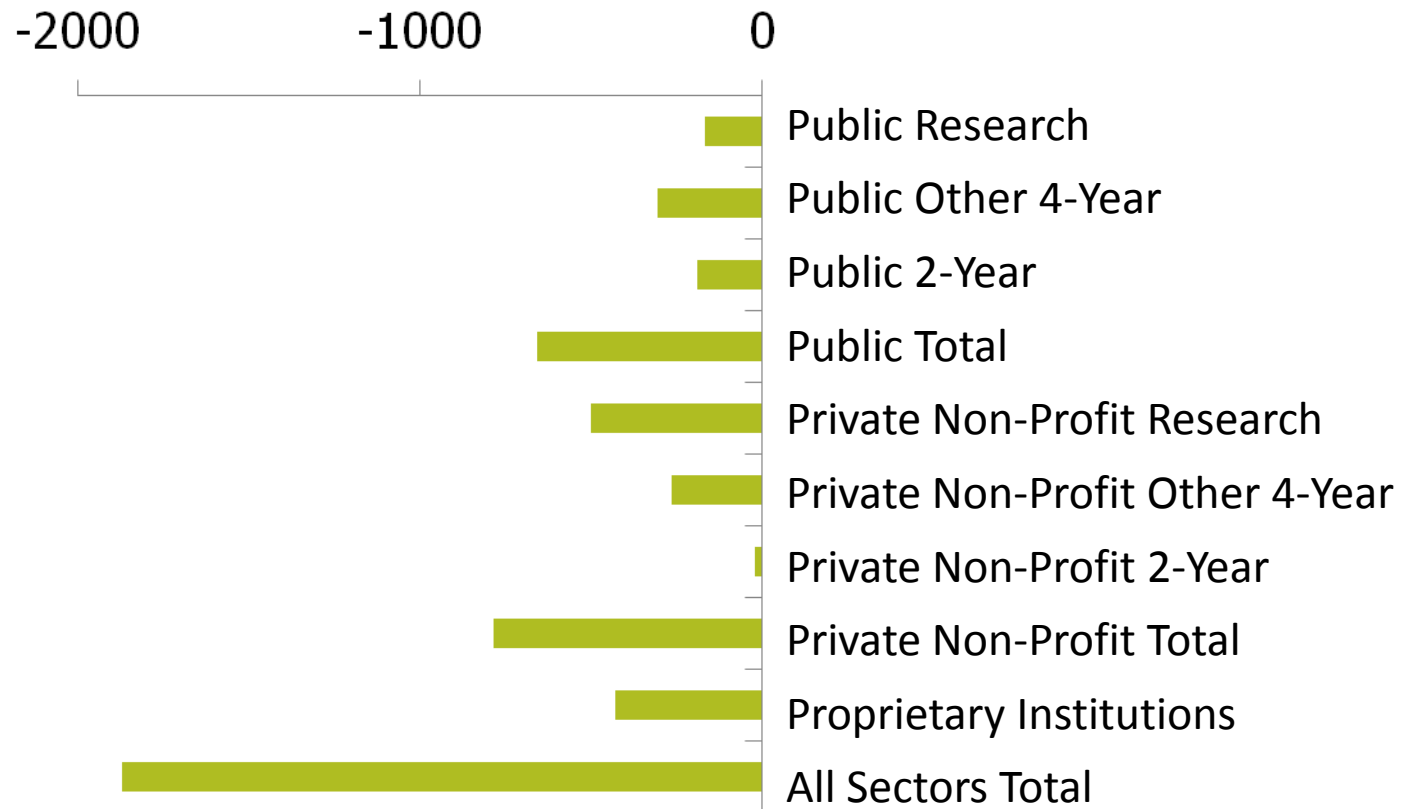
# Public High School Graduation Rates, as a Percent of 9th Graders Four Years Earlier, 2008



# Percent of High School Graduates Going Directly to College (Fall 2008)



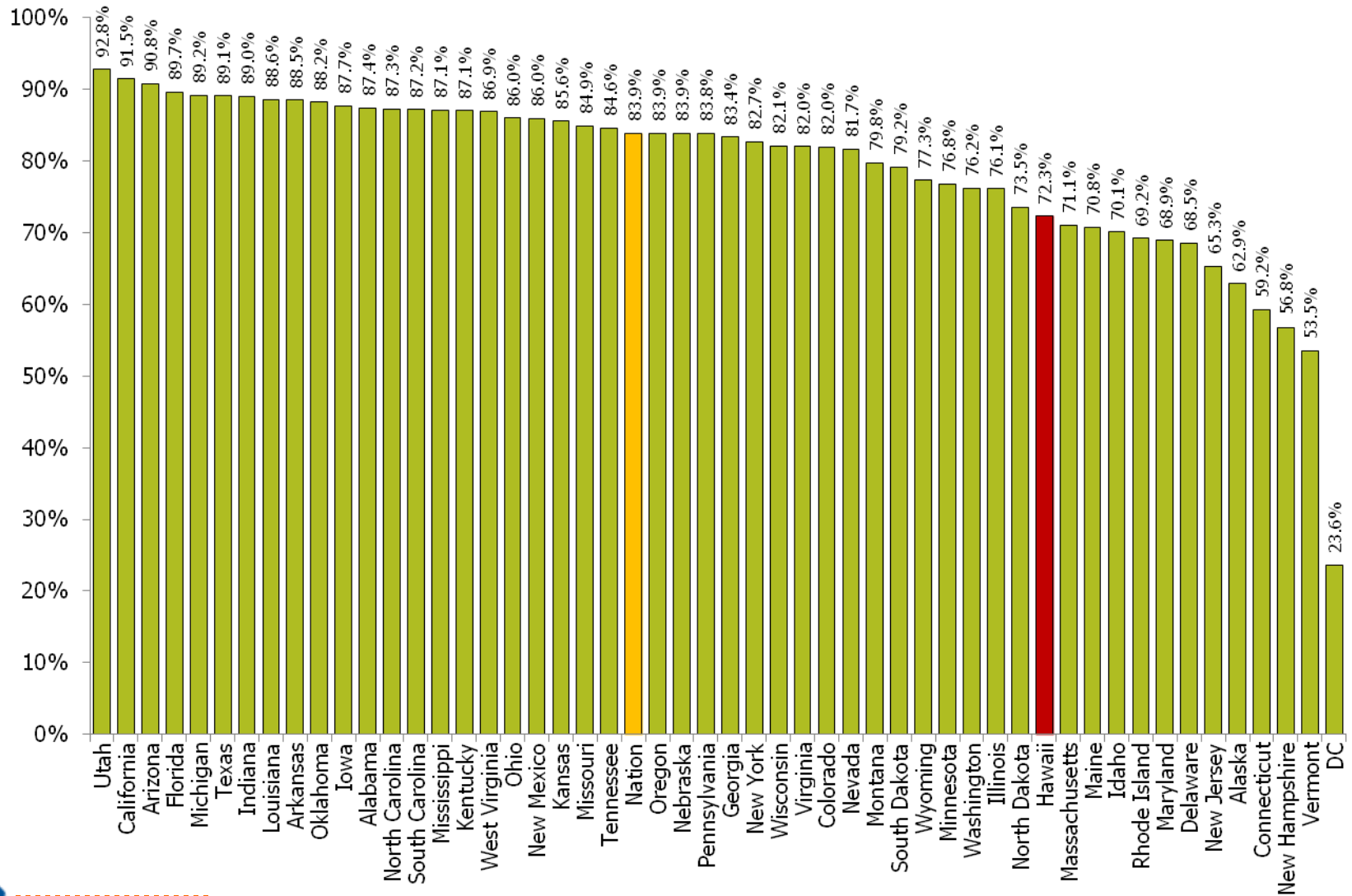
# Hawaii Net Migration of First-Time Degree/Certificate Seeking Undergraduates by Sector, Fall 2010



Source: NCES, IPEDS 2010 Residence & Migration File; ef2010c Early Release Data File Downloaded 08-24-11.

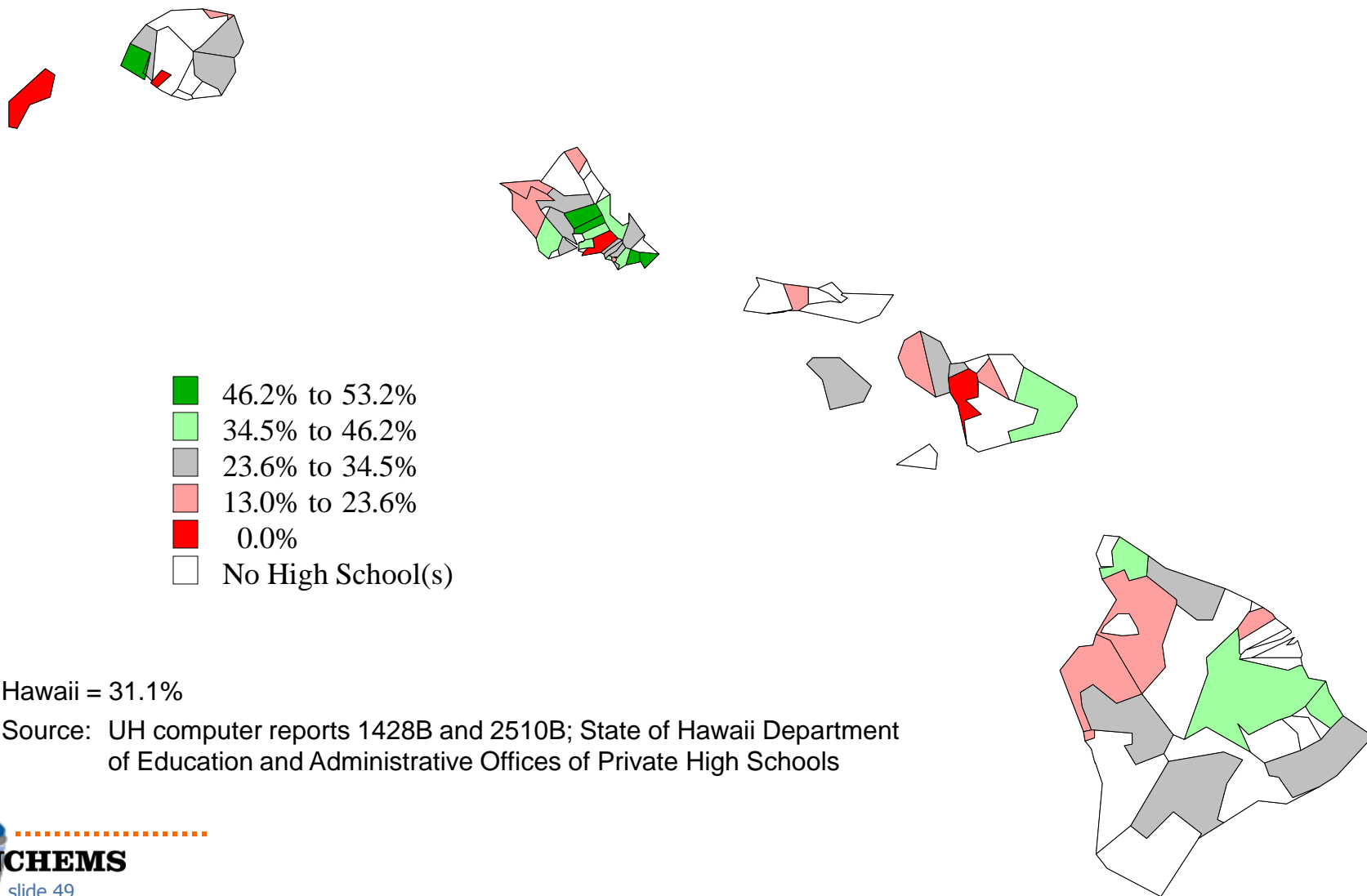
Note: Figures restricted to U.S. States and Title IV degree-granting institutions.

# Percent of First-Time Freshmen Who Attend College Within Their Reported State of Residence, Fall 2010

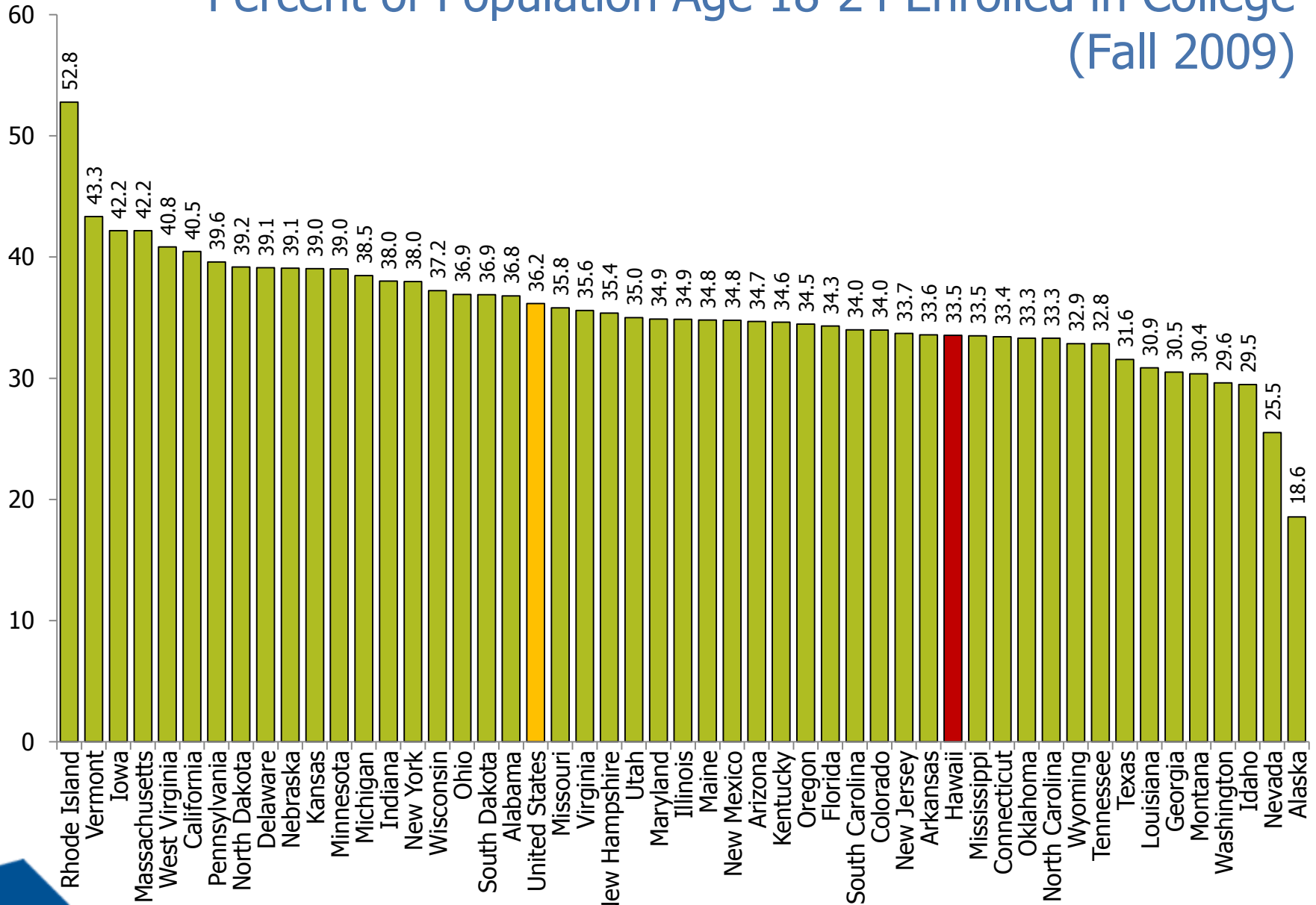


# University of Hawaii System First-Time Freshmen as a Percent of High School Graduates by Location of High School Graduation (Zip Code)

2004

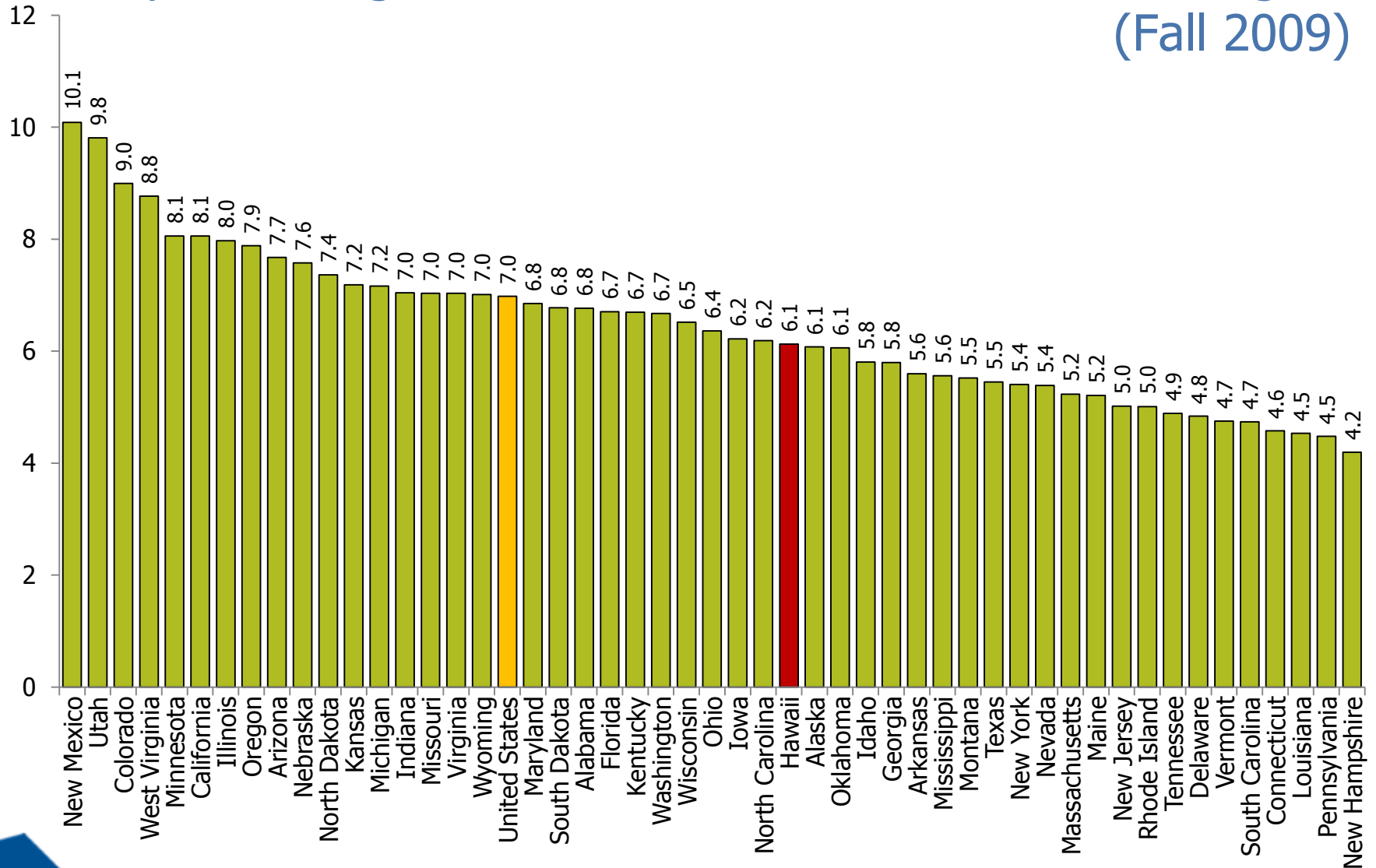


# Percent of Population Age 18-24 Enrolled in College (Fall 2009)

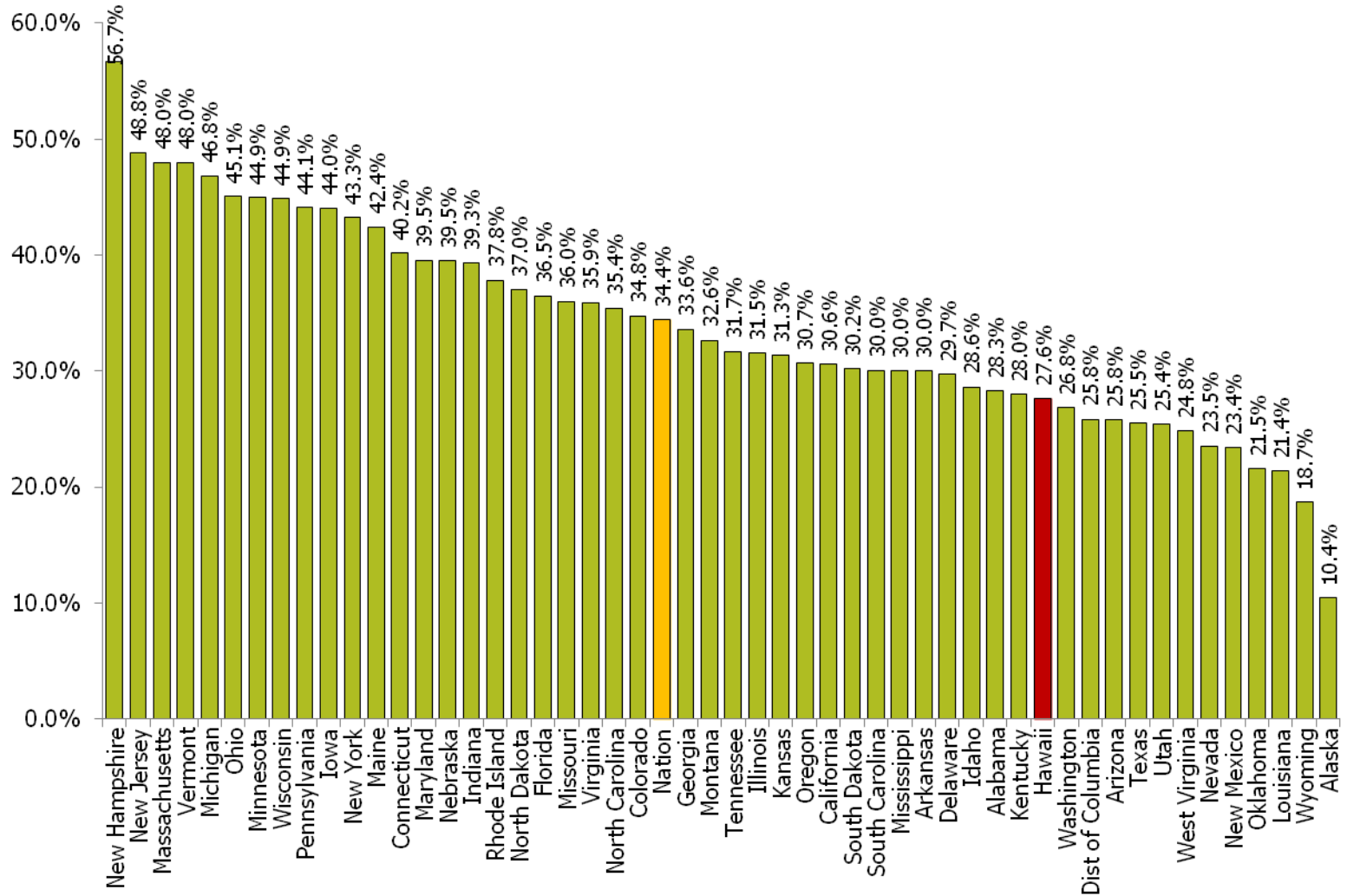


Source: NCES, IPEDS Enrollment Survey; U.S. Census Bureau Population Estimates

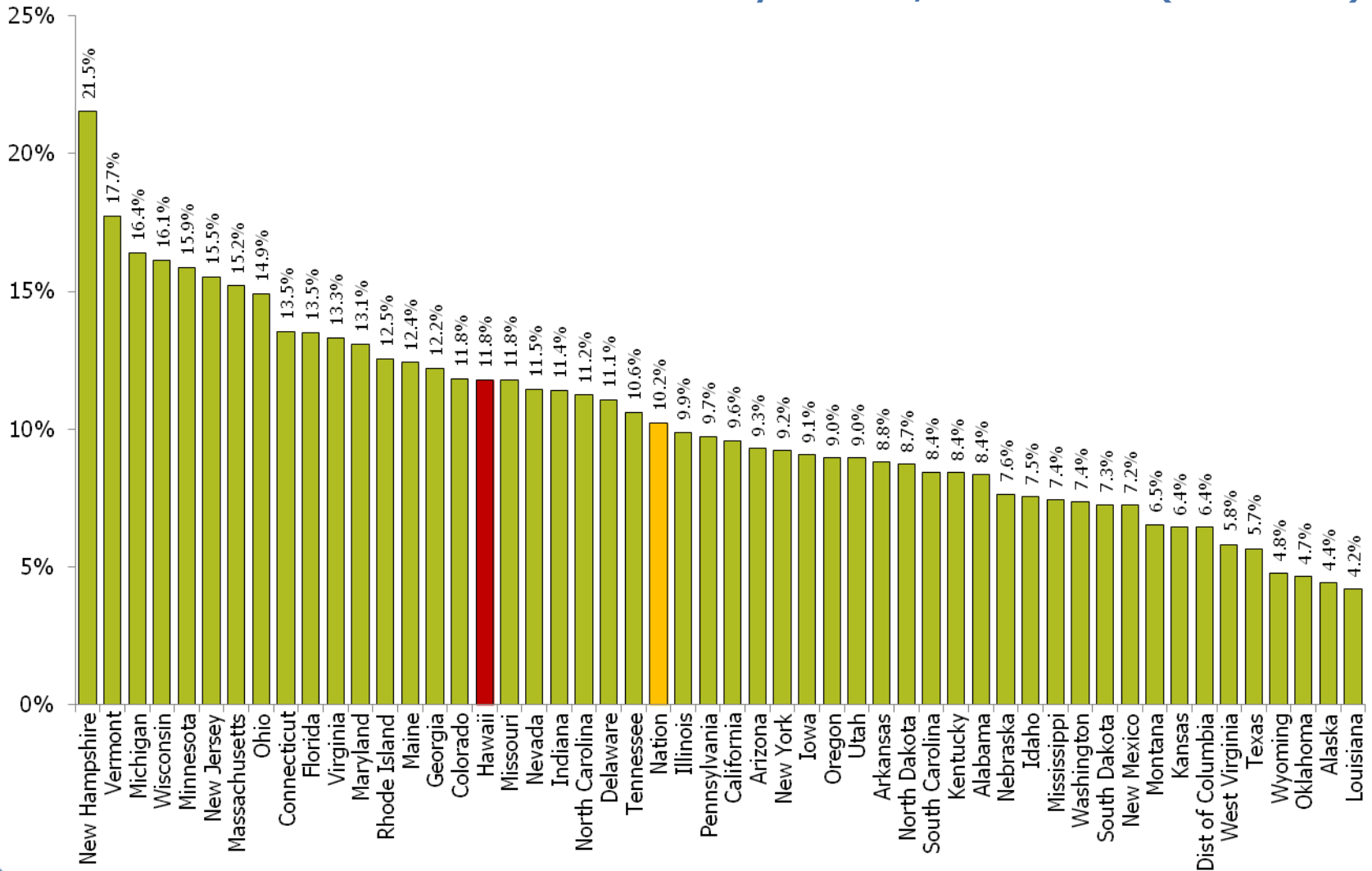
# Population Age 25-49 Enrolled in College as a Percent of Population Age 25-49 with Less than a Bachelor's Degree (Fall 2009)



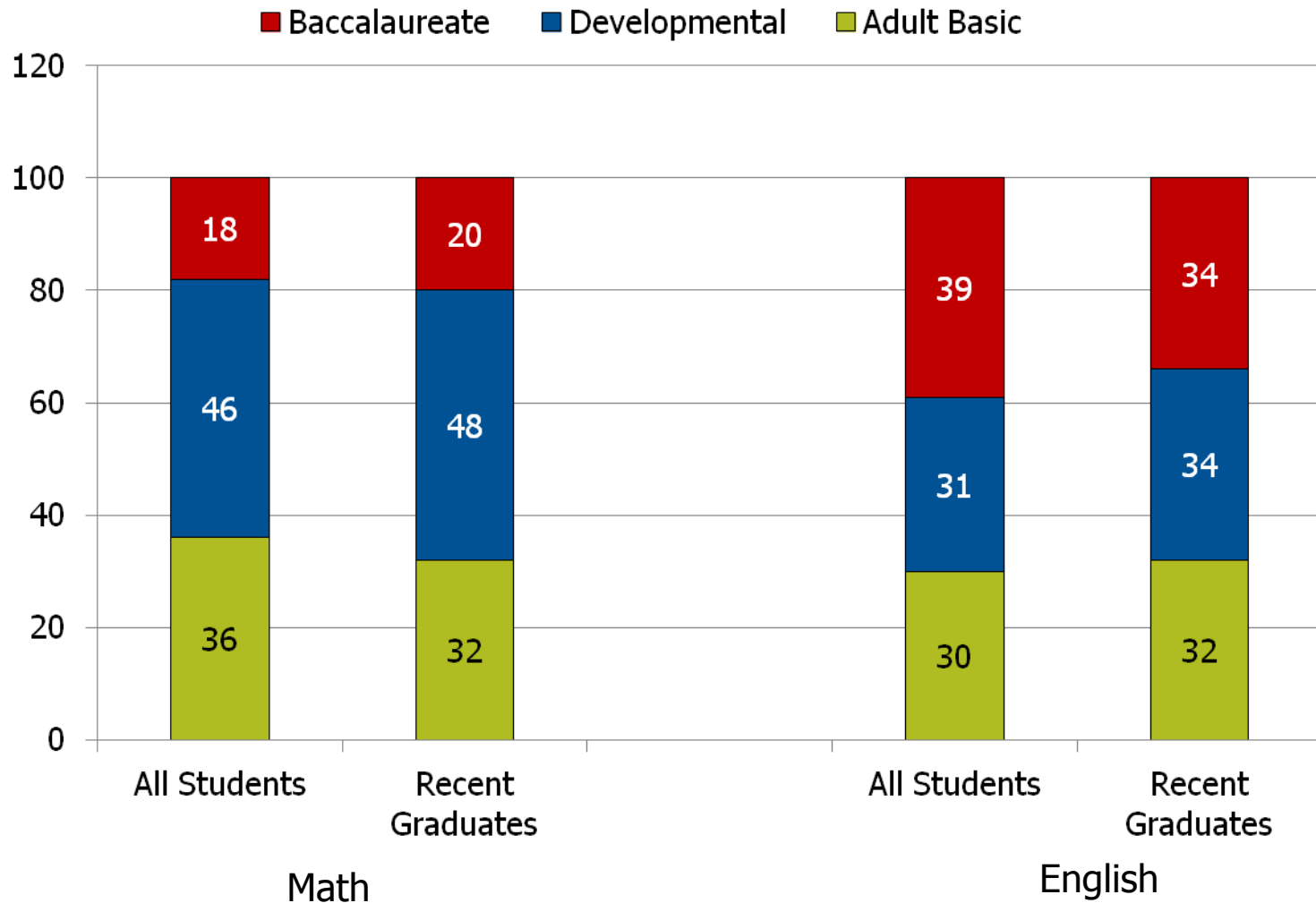
# College Participation Rates by State for Students from Low-Income Families, 2010



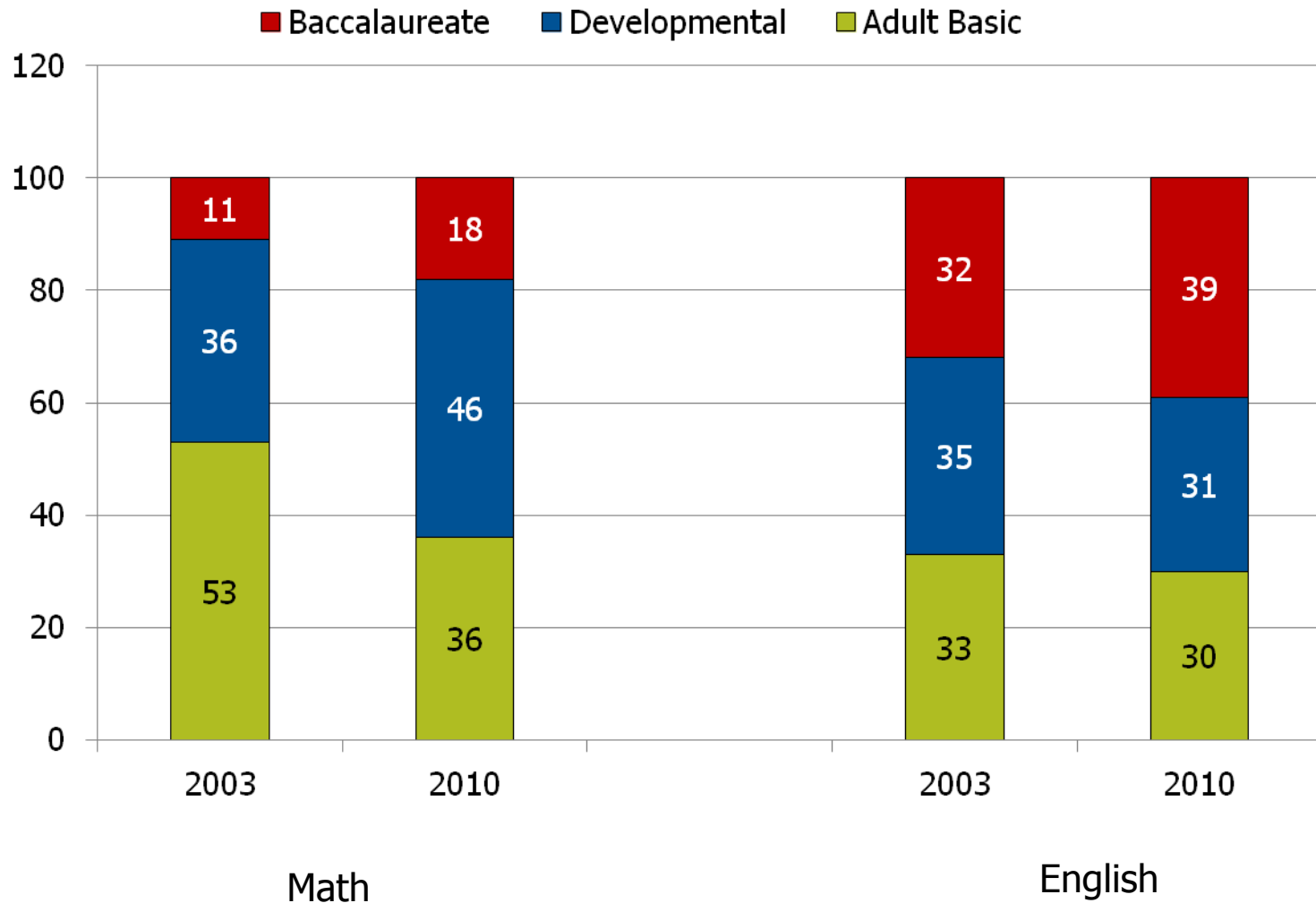
# Change in College Participation Rates for Students from Low-Income Families by State, 2007-10 (Percent)



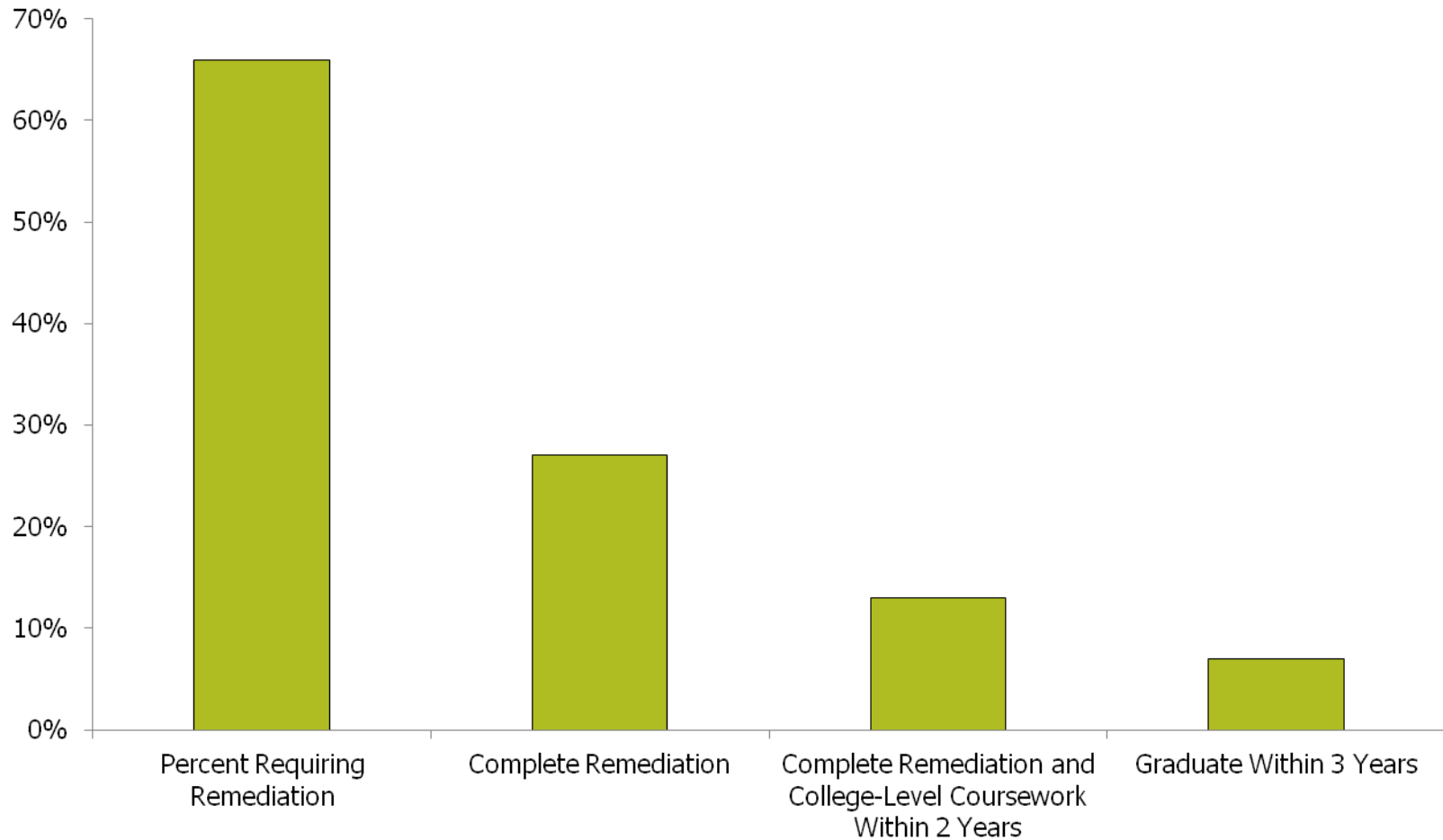
# University of Hawaii Community Colleges - Entering Student Placement, Fall 2010



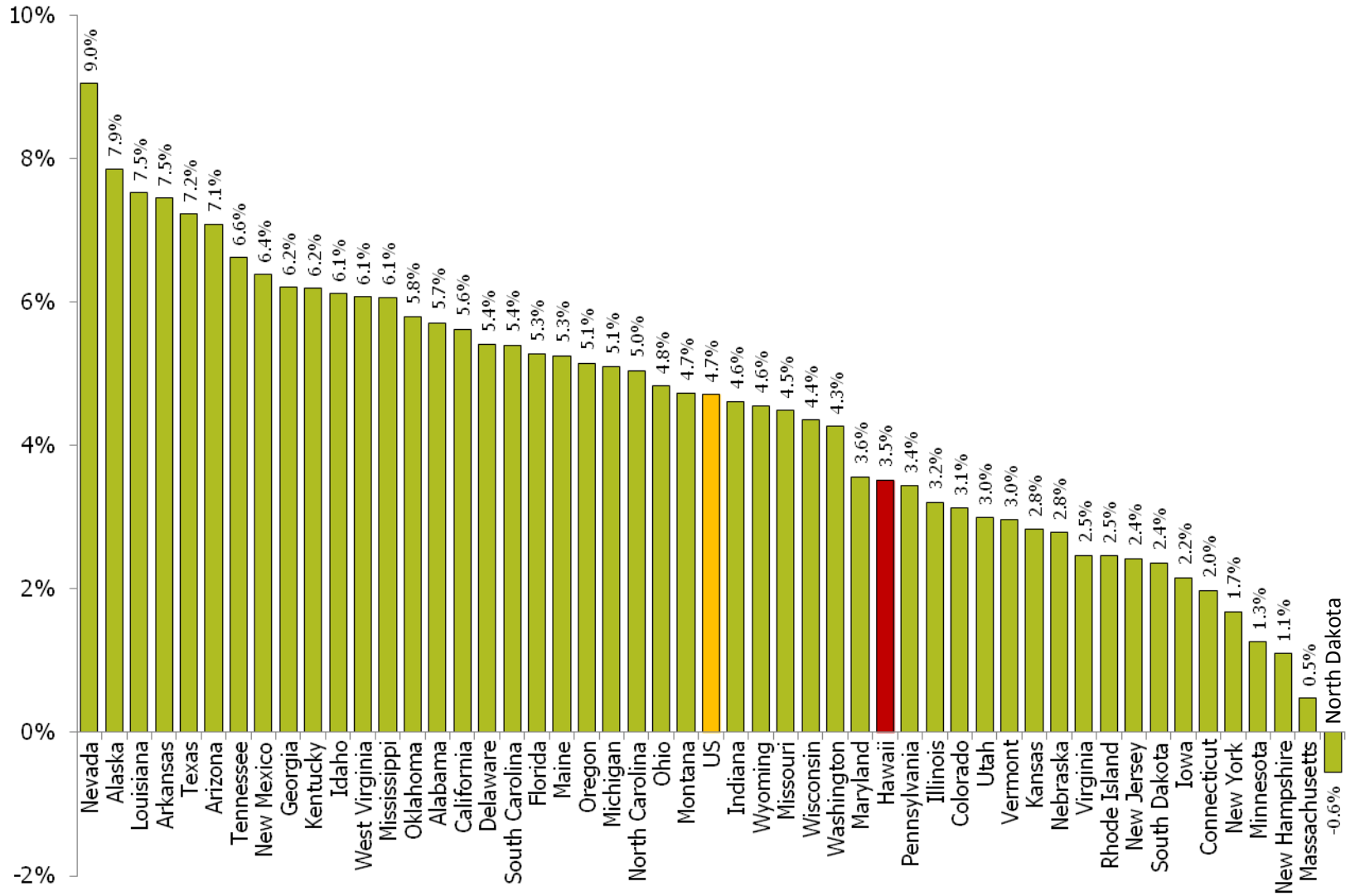
# University of Hawaii Community Colleges, Entering Student Placement, Fall 2003 versus Fall 2010



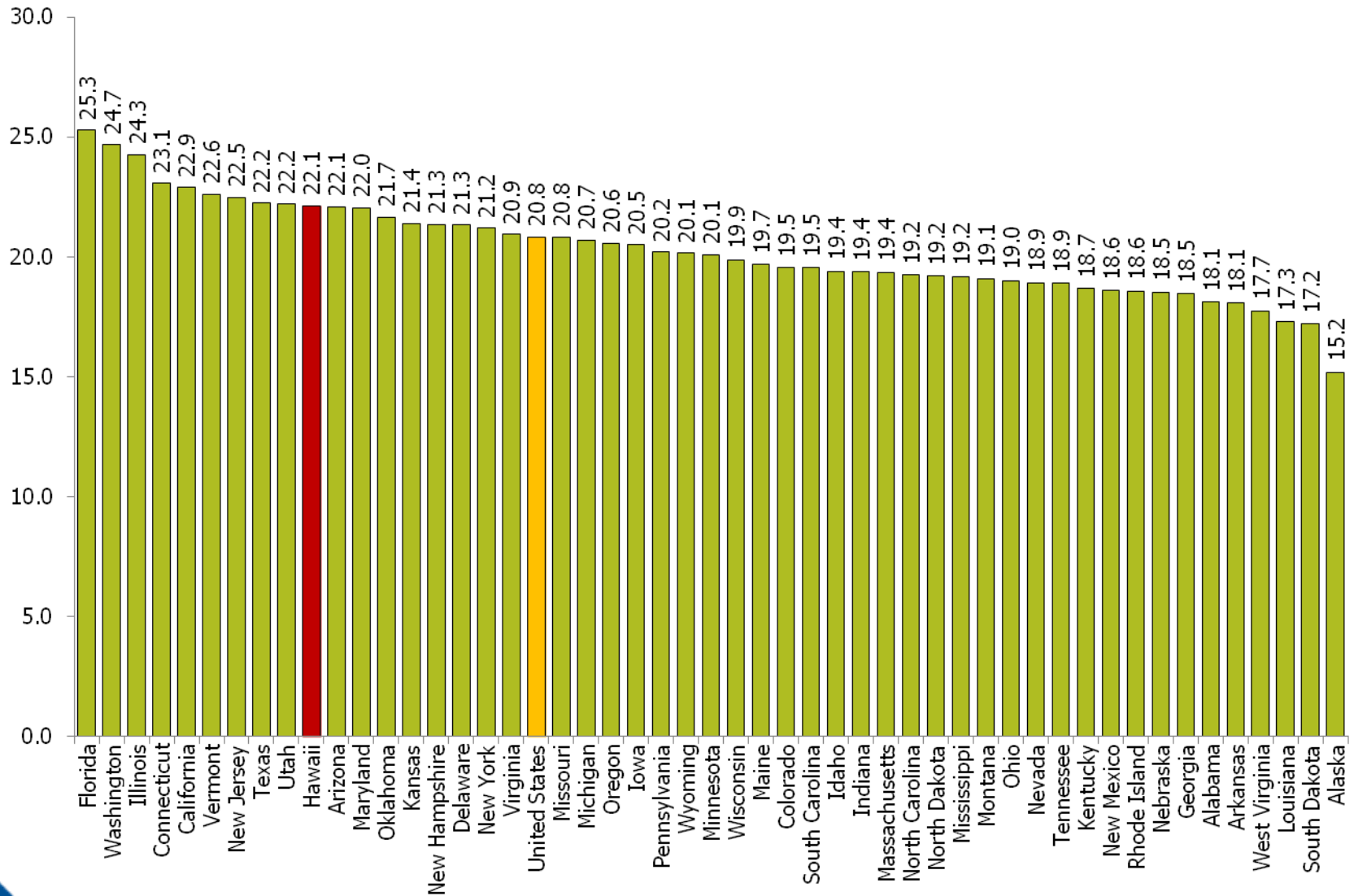
# Remediation in Hawaii's Community Colleges



# Closing the Gap: Annual Percent Increase in Credential Production Needed to get to 60% by 2025

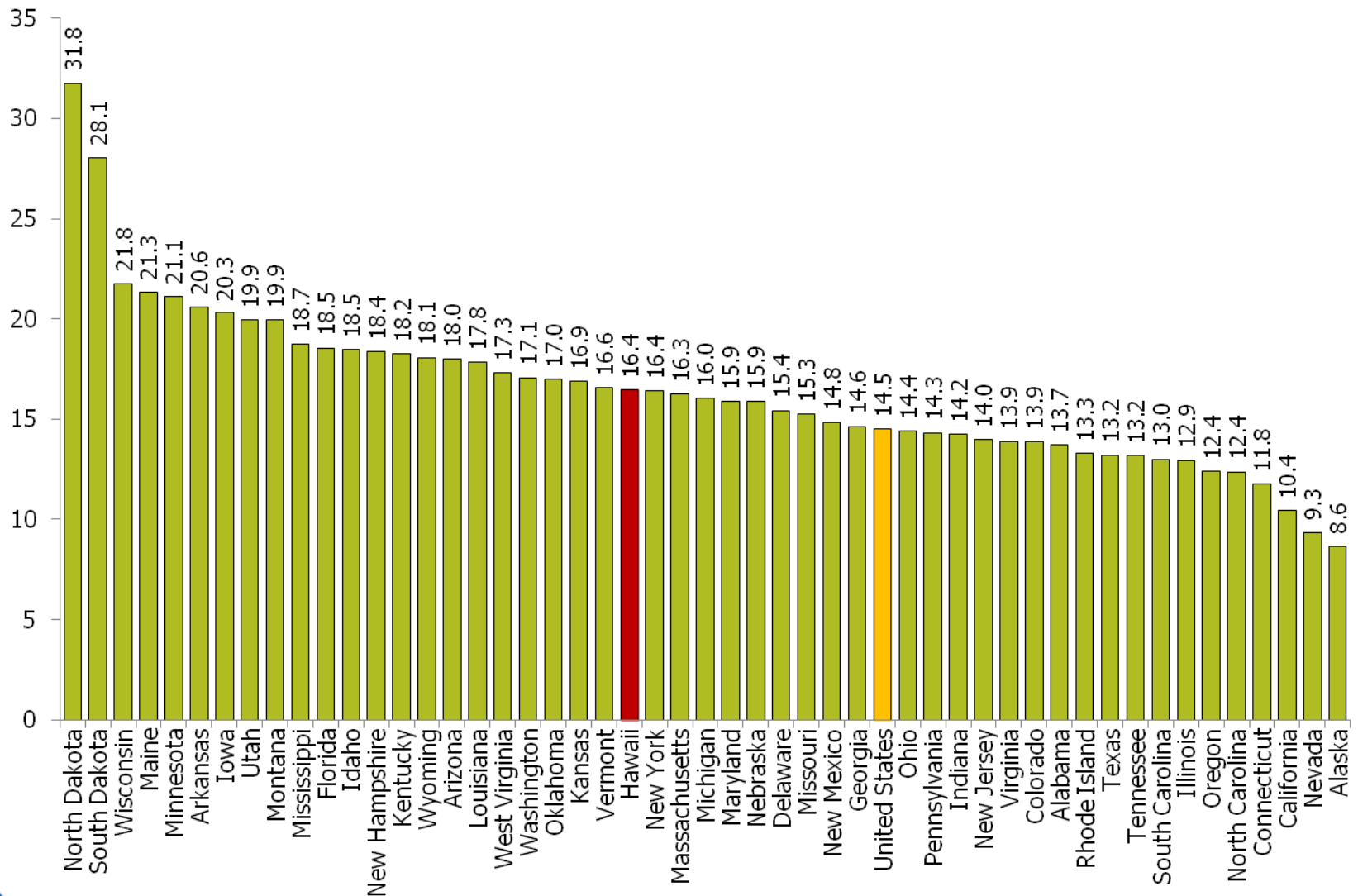


# Bachelor's Degrees Awarded per 100 FTE Students Public Four-Year (2008-09)



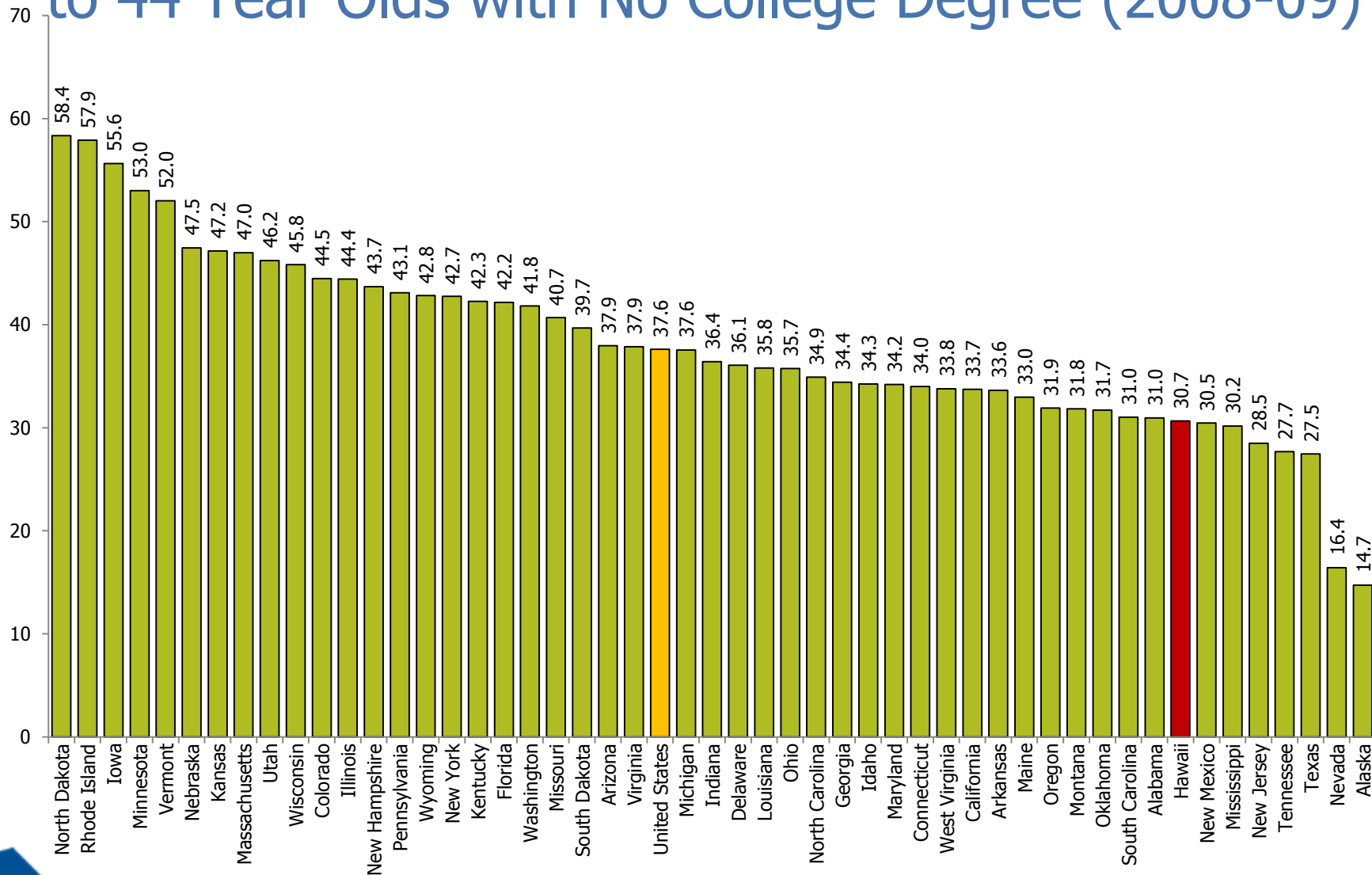
Source: NCES, IPEDS 2008-09 Completions File (c2009), Instructional Activity File (efia2009), Unduplicated Headcount File (effy2009), Enrollment File (ef2008a)

# Public Associate Colleges - Total Credentials Awarded (Less than Bachelors) per 100 FTE Undergraduates, 2008-09

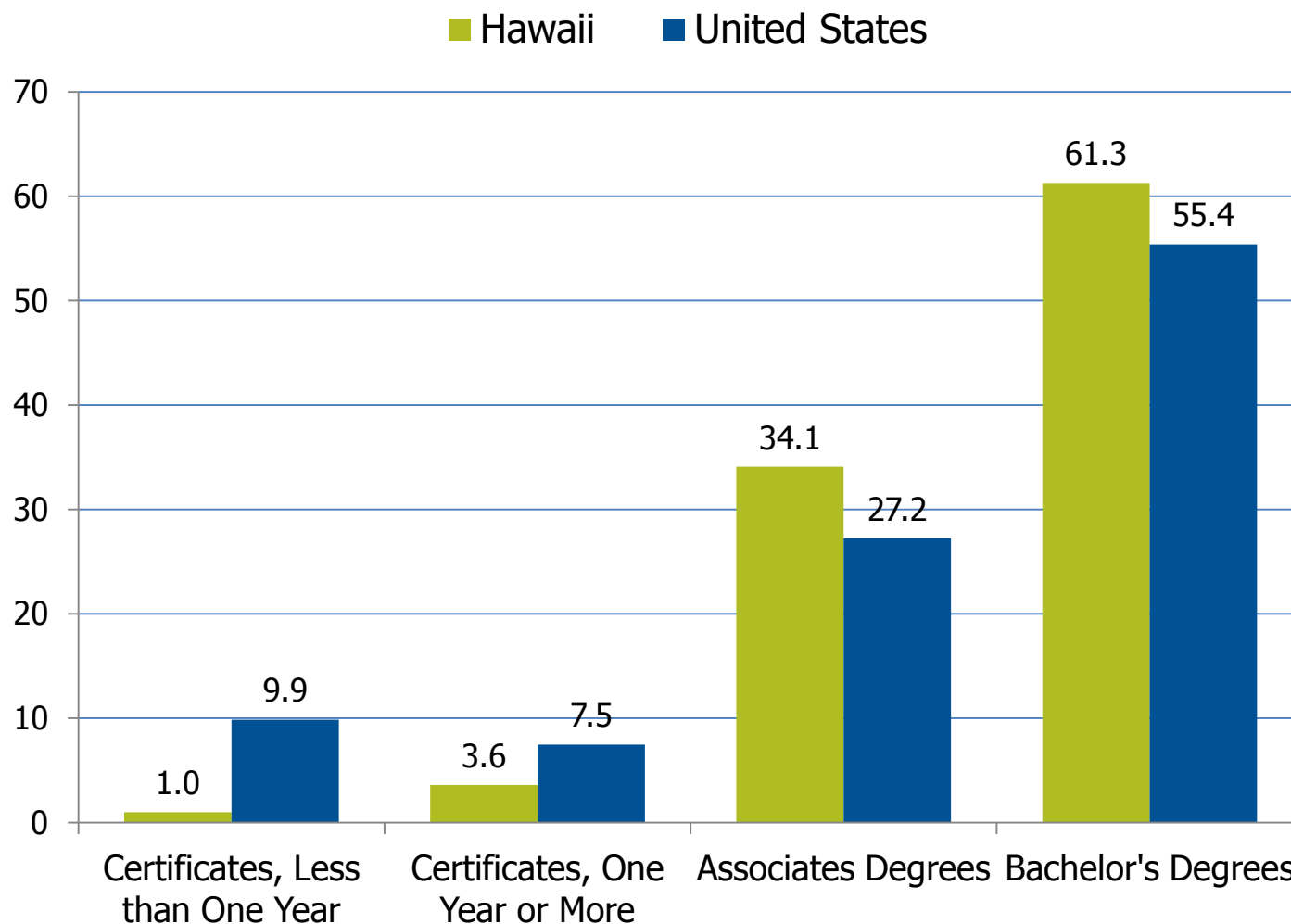


Source: NCES, IPEDS 2008-09 Completions File (c2009), Instructional Activity File (efia2009), Unduplicated Headcount File (effy2009), Enrollment File (ef2008a)

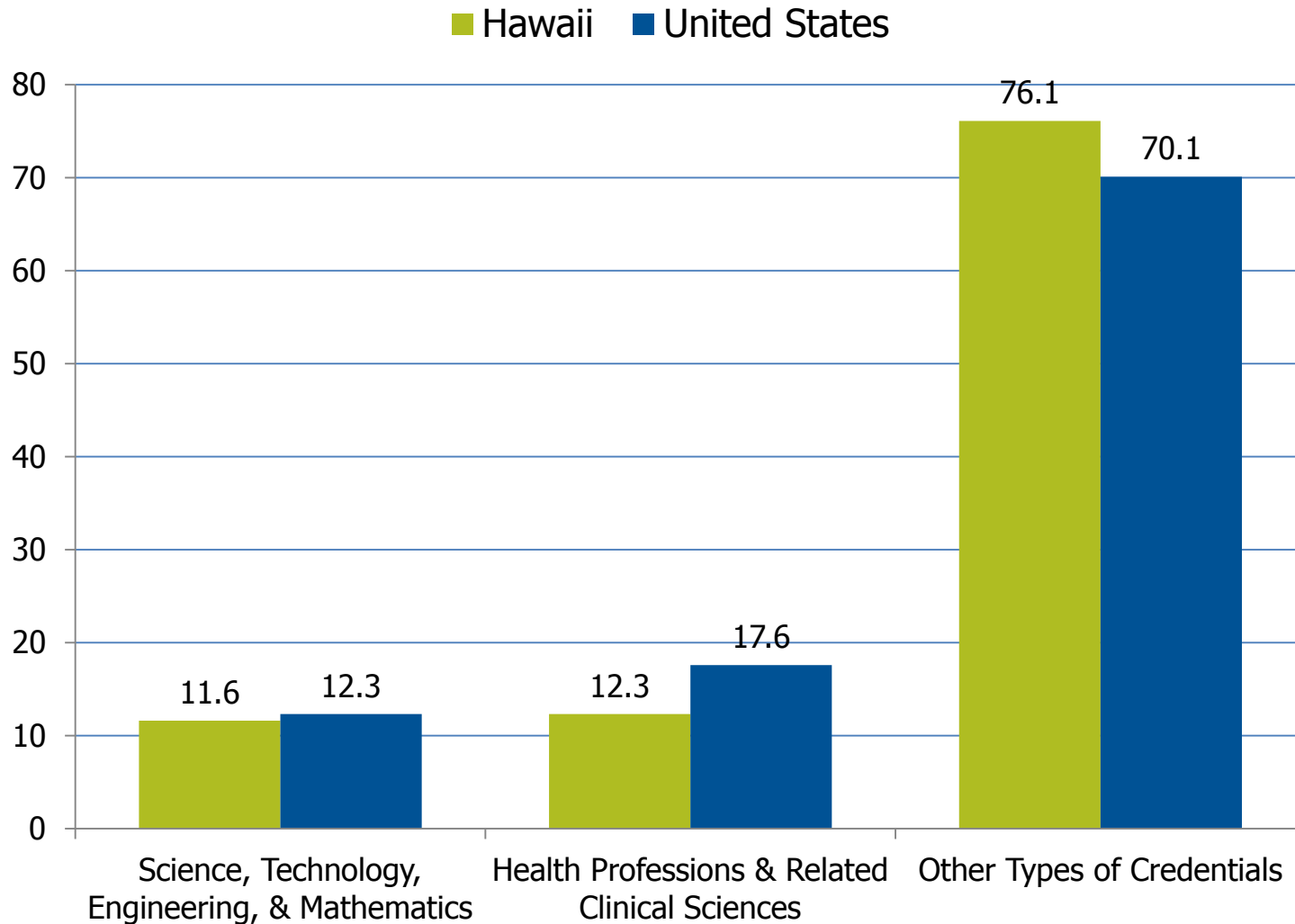
# Undergraduate Credentials Awarded per 1,000 18 to 44 Year Olds with No College Degree (2008-09)



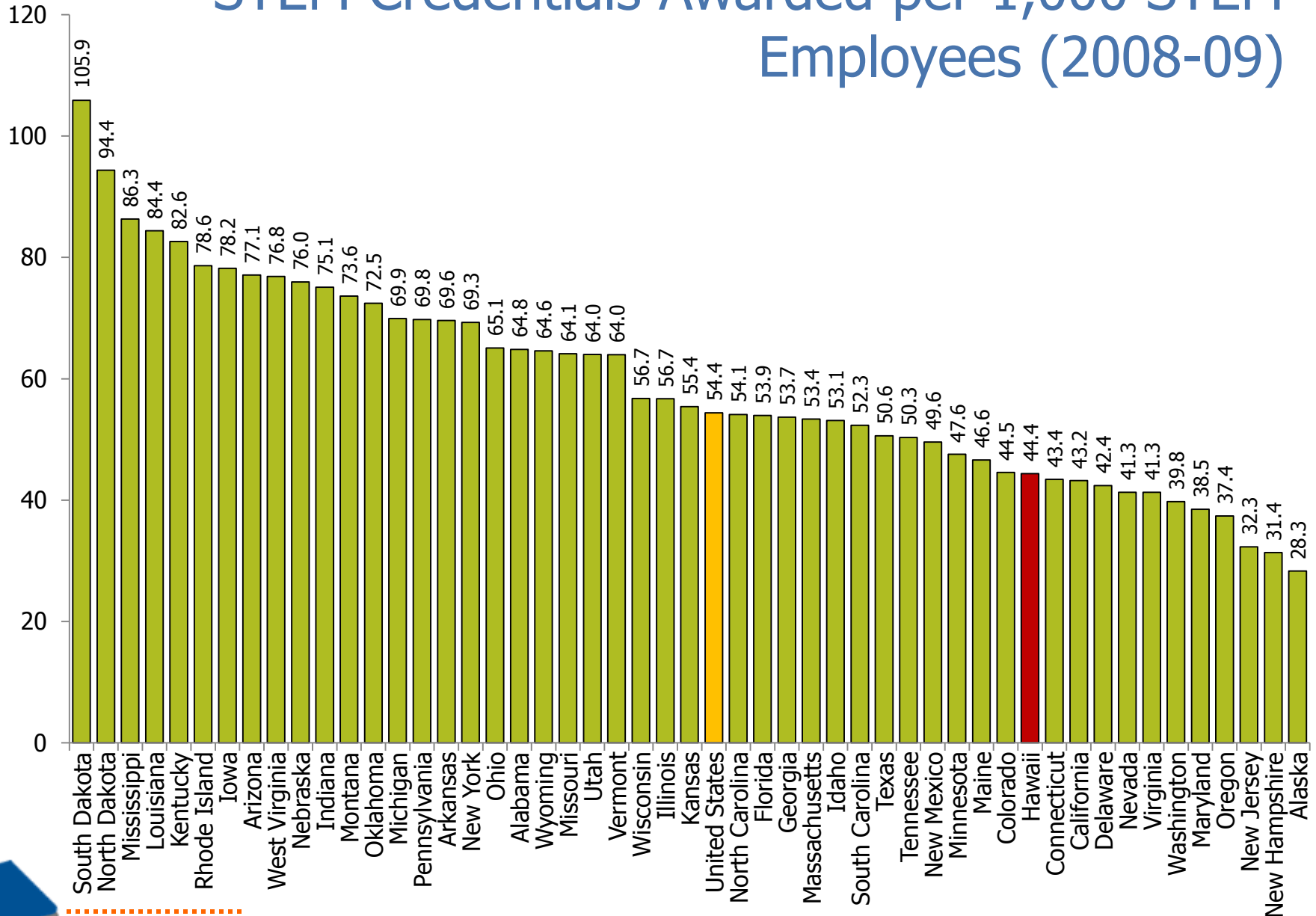
# Proportion (%) of Undergraduate Awards by Level (2008-09)



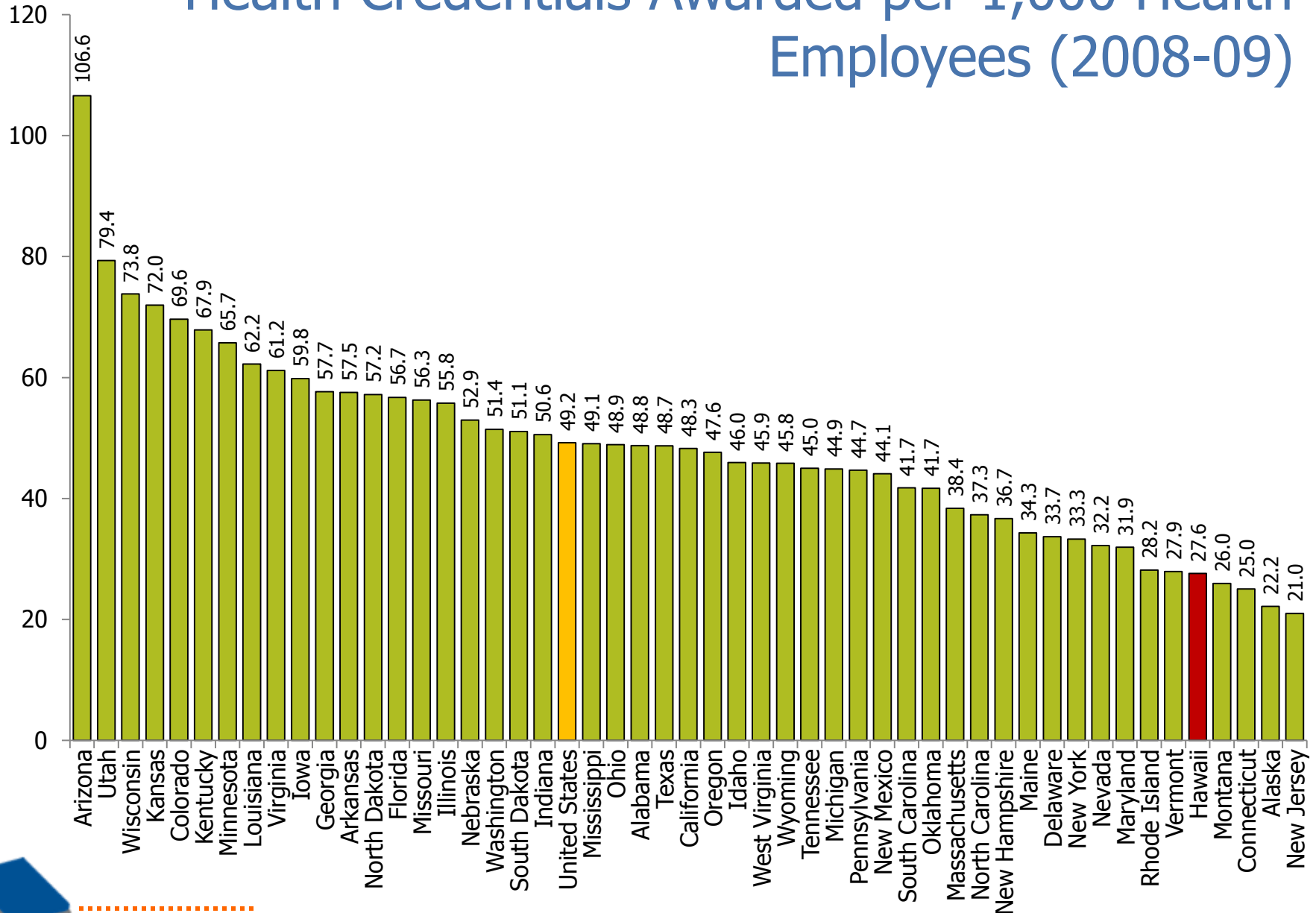
# Proportion (%) of Undergraduate Credentials Awarded by Type - STEM, Health, and Other (2008-09)



# STEM Credentials Awarded per 1,000 STEM Employees (2008-09)



# Health Credentials Awarded per 1,000 Health Employees (2008-09)



# Summary

- Hawaii outperforms the nation and many states in the percentage of its adult workforce with college degrees.
- There are sizable gaps in college attainment between Whites and minorities. Notably, minorities outperform whites in attainment of associates degrees in Hawaii.
- Rates of college participation are just below the U.S. average when compared to other states. However, there is a fairly small proportion of Hawaii's workforce who have not completed college and are struggling to earn a living wage – the 7th lowest proportion in the U.S.
- Rates of college completion in Hawaii are mixed –in terms of credentials awarded relative to the number of students enrolled, Hawaii does well, while credentials awarded relative to the state's population in need lags behind the national average.

## Summary (Continued)

- Hawaii awards very few credentials in the STEM and health fields to related employees. Hawaii also has some of the fewest numbers of college-educated workers (compared to the U.S. average) employed in management and professional, and high tech occupations.
- Although a low percentage of the workforce in Hawaii is earning low wages, workers in Hawaii earn less than the U.S. average at higher stages of education completed. The largest gaps are among those with bachelor's degree and higher. This is likely due to the mix of job demands and skills necessary for jobs in Hawaii.
- The personal income per capita has increased over the past few years, but has not recovered completely from a dramatic drop between 1995 and 2000.
- Unlike some states, Hawaii is attracting college-educated residents from out-of-state, but also attracts substantial numbers of residents with no college degree. Overall, the number of college-educated residents imported outweigh those imported without a college education.
- Hawaii ranks among the bottom states on the State New Economy Index – the degree to which state economies are knowledge-based, globalized, entrepreneurial, IT-driven, and innovation-based. States that have strong economies by this measure also have highly educated workforces, and high personal incomes per capita.

# It's not just education for education's sake!

## More college graduates in Hawaii's workforce would:

- Generate additional income for individuals and the state – in terms of increased earnings and tax revenues.
- Attract more competitive business and industry into the state – providing more high-end jobs to Hawaii residents.
- Foster more entrepreneurial activity – creating business and job opportunities from within the state.
- Lead to better lives for Hawaii residents – better health, reduced costs for healthcare, lower incidences of crime and incarceration, and greater civic engagement.

*The best predictor of all of the above is the education levels of the state's working-aged population.*