



# Alignment of Postsecondary Education and Employment:

## Staff Briefing

### Legislative Program Review & Investigations Committee



October 6, 2009

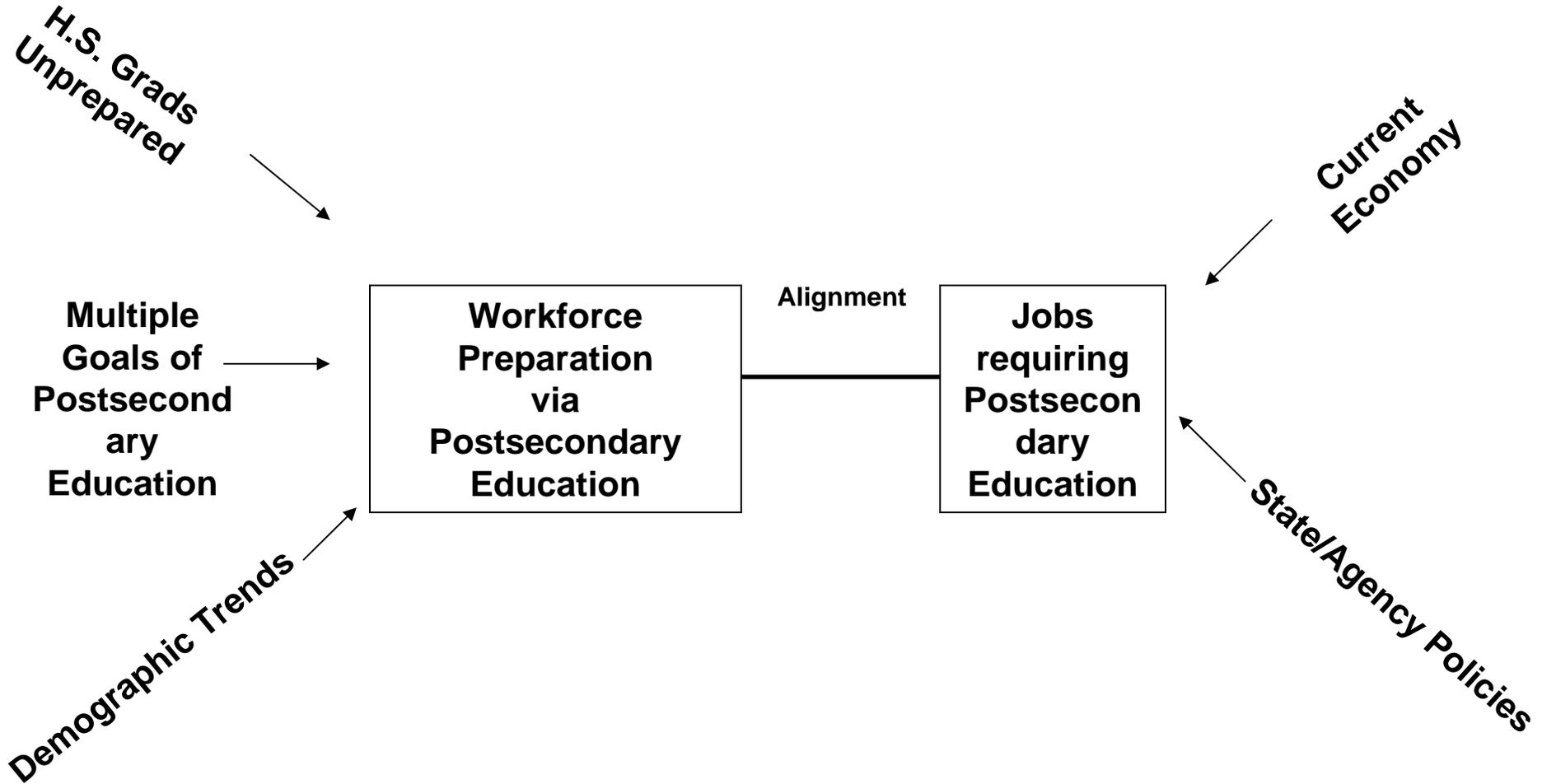
# Presentation Overview

- Purpose of Study
- Connecticut's Higher Education System and Alignment with Employer Need
- Connecticut's Workforce Supply and Alignment with Employer Demand
- Possible Barriers to Alignment
- Next Steps

# Study Purpose

- Examine whether mechanism exists to match graduates with workforce needs
  - Review state structure and policies to achieve this goal
  - Assess current workforce supply and workforce needs
- Review pathways for technical high school graduates to pursue postsecondary education

# Diagram Showing Alignment of Postsecondary Education and Employment



# CT's Higher Education System

- Board of Governors for Higher Education
  - Department of Higher Education
- Boards of Trustees:
  - University of Connecticut – almost 30,000 students
  - CT State University System – almost 36,000 students
  - CT Community College System – over 90,000 students
  - State Board for Academic Awards - 2,000 students

# Board of Governors for Higher Education

- Primarily viewed as coordinating body
- Approves new programs and elimination of programs for all colleges
- Submits consolidated budget for public higher education system
- Legislative appropriations made directly to constituent units
- DHE:
  - administers Minority Teacher Incentive Program

# State Efforts to Link Higher Education and Employer Need

- Initiatives to better coordinate postsecondary education with workforce development can be traced back to the early 1980s
- Several boards, commissions, councils existing and proposed
- Legislature created Blue Ribbon Task Force in 2007 but was never constituted
  - Major charge was to create strategic plan for higher education
  - Short and long-term goals were to be included, as well as benchmarks to measure progress in achieving goals

# Coordinating Bodies

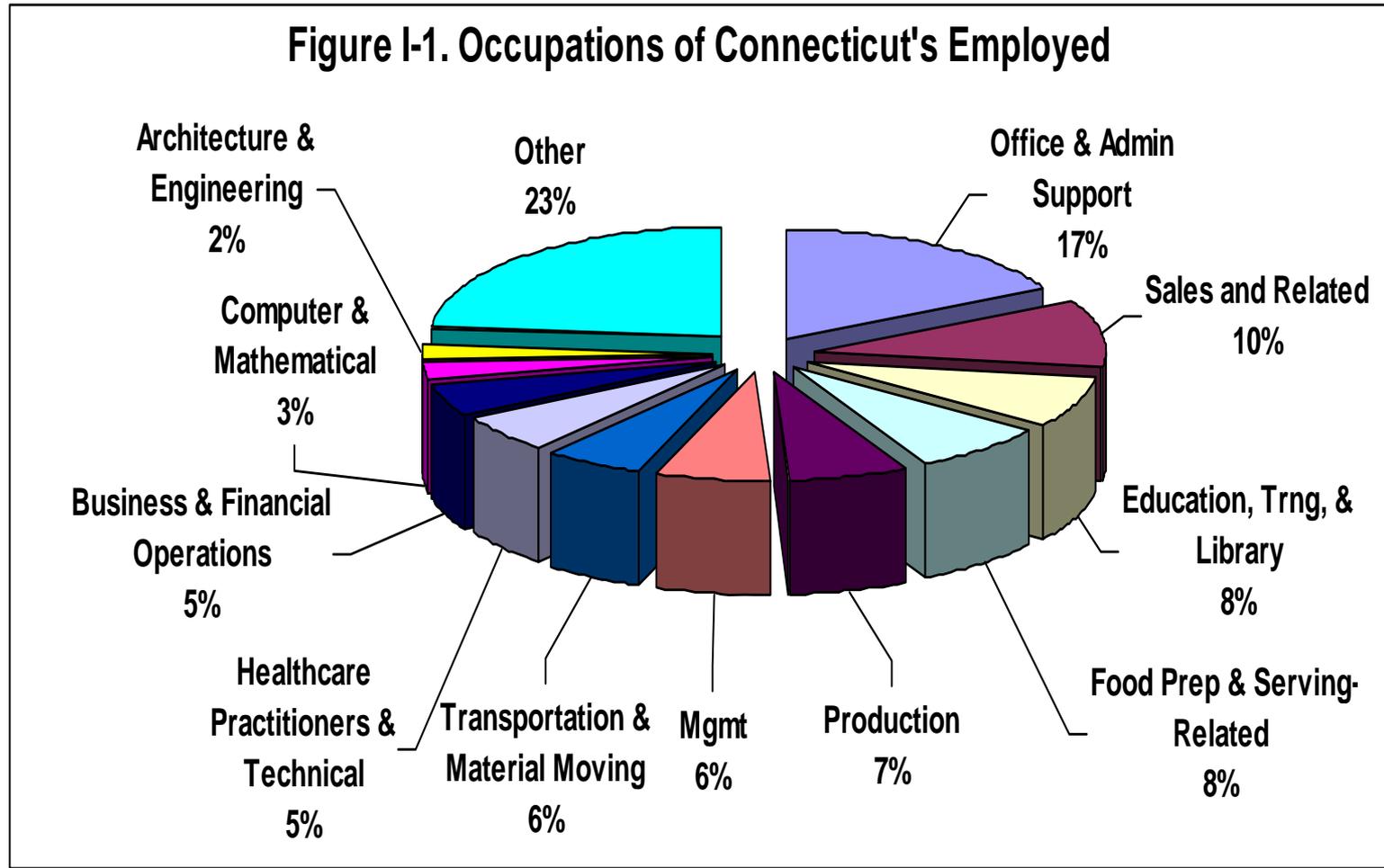
- Existing:
  - Connecticut Employment & Training Commission
  - Office of Workforce Competitiveness
  - P-20 Commission
- Eliminated:
  - Governor's JOBs Cabinet
- Proposed:
  - Blue Ribbon Task Force
  - Workforce and Education Cabinet
- Focus on coordination and cooperation since no single entity has authority to implement across-the-board strategies or programs

# Office of Workforce Competitiveness

- Governor's principal policy advisor
- Administers pilot loan forgiveness programs aimed at worker shortage areas
- Chairs two committees
  - CT Career Ladder Advisory Committee
  - CT Allied Health Workforce Policy Board
- Member of P-20 Commission, Blue Ribbon Task Force, and Workforce and Education Cabinet
- Staffs CETC and P-20 Commission

# Current Workforce Supply

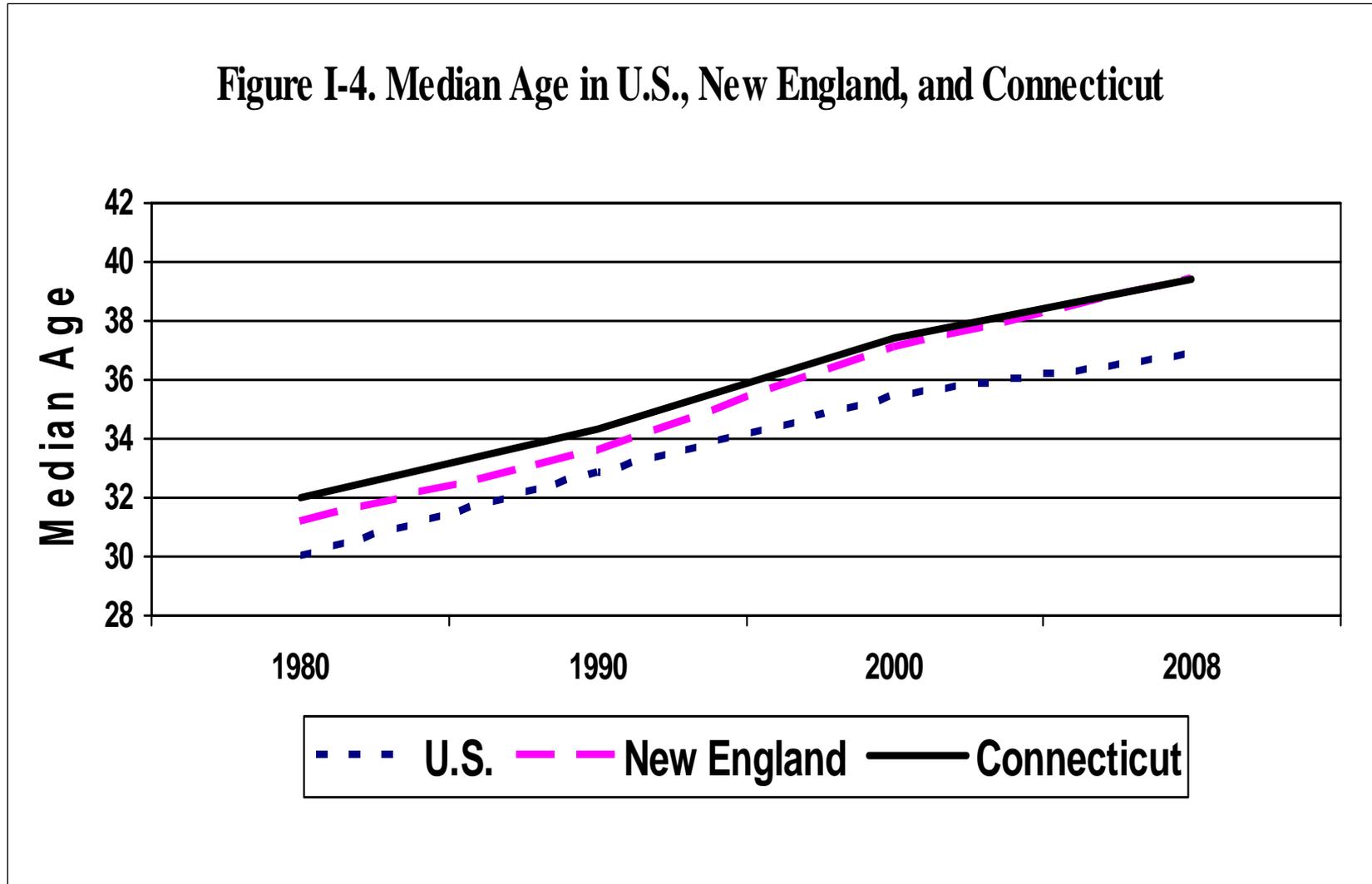
Just 5% are working in STEM occupations



# Workforce Supply Demographics

CT's population has been among the oldest for nearly 30 years

Figure I-4. Median Age in U.S., New England, and Connecticut



## Workforce Supply Education Level

CT is strong in the awarding of bachelor's degrees,  
but weaker on associate's degree side

- 34% of CT heads of households have at least 4 years of college
- This ranks CT 5<sup>th</sup> in the country
- CT awarded 27% more BA's from 2001-2006
- CT lagged behind the rest of the country in the awarding of Associate's degrees, and post BA-degrees
- CT awarded 14% more Associate's degrees (vs. the 23% increase nationally)

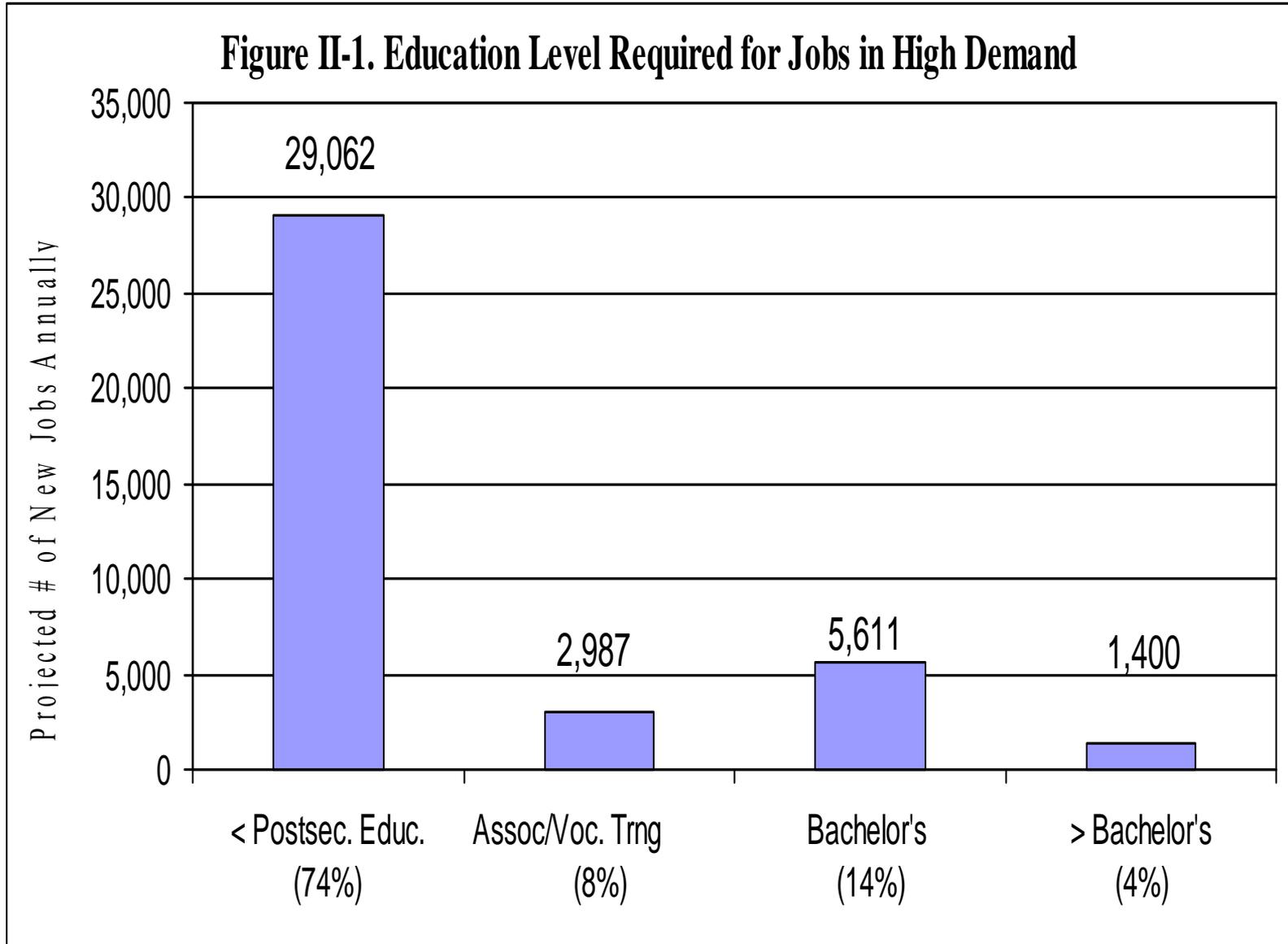
## Workforce Supply

In contrast, less than half of independent college grads are CT natives

<b>Table I-4. Statistics on 2008 Graduates from Connecticut Colleges</b>		
<b>Type of Postsecondary Educ. Institution</b>	<b># of 2008 Graduates</b>	<b>% Estimated to be CT Residents</b>
<b>Public:</b>	19,030	86%
CT Community College System	4,804	99%
CT State University System	6,870	91%
University of Connecticut	6,875	75%
Charter Oak State College	481	39%
<b>Independent:</b>	17,381	45%
National Independent Colleges	5,808	12%
Regional Independent Colleges	10,982	47%
Two-Year Independent Colleges	591	94%

## Employer Demand

Most jobs CT DOL projects will be in demand do not require postsecondary education



# Employer Demand

**Figure II-3. High Demand Occupations in CT Within the Major Occupational Groups**

## **Healthcare (2,445)**

RN • LP/ Vocational Nurses • Radiologic Tech • Dental Hygienists • Pharmacists

## **Computer/Math/Science (1,779)**

Systems Analysts • Software Engineers/Applications • Computer Support Specialists  
Network Systems/Data Communications Analysts • Network/Computer Systems Administrators

## **Business/Financial (1,763)**

Accountants/Auditors • Mgmt Analysts • Bus. Operations Specialists • Financial Analysts

## **Management (1,293)**

General and Operations Managers • Financial Managers • Sales Managers

Computer/Information Systems Managers • Social/Community Service Managers

## **Community/Social Services (648)**

Rehabilitation Counselors • Child/Family/School Social Workers • Mental Health/Subs. Ab. Social  
Workers

Educational/Vocational/School Counselors • Mental Health Counselors

**Table II-5. Annual Teacher Shortage Areas**

Subject Certification Area	Shortage-Area Year					
	04-05	05-06	06-07	07-08	08-09	09-10
<b>Bilingual Education, Pre-K-12</b>	✓	✓	✓	✓	✓	✓
<b>Comprehensive Special Ed, 1-12</b>	✓	✓	✓	✓	✓	✓
<b>English, 7-12</b>	✓	✓	✓	✓	✓	✓
<b>Mathematics, 7-12</b>	✓	✓	✓	✓	✓	✓
<b>Science, 7-12</b>	✓	✓	✓	✓	✓	✓
<b>Speech and Lang. Pathology</b>	✓	✓	✓	✓	✓	✓
<b>World Languages, 7-12</b>	✓	✓	✓	✓	✓	✓
<b>Intermediate Administrator</b>		✓	✓	✓	✓	✓
<b>Music, PK-12</b>	✓		✓	✓		✓
<b>Library Media Specialist</b>				✓	✓	✓
<b>Technology Education, PK-12</b>	✓			✓	✓	
<b>Remedial Reading, PK-12</b>		✓	✓			
<b>TESOL, PK-12</b>		✓				

# How Do We Assess Alignment of Postsecondary Education and Employment?

- Match # of CT grads for a particular occupation with projected # of openings for that occupation
- Alignment = # of graduates are within 10% of projected # of openings
- Misalignment: Oversupply = More grads than openings
- Misalignment: Undersupply = More openings than grads

## Examples of Alignment

Occupation	Projected Need for 2008 (Demand)	Total Number Graduated in 2008 (Supply)	Shortfall	Number Graduated	
				Public vs. Independent	
Registered Nurses	1,114	1,109	-5	636	473
Occupational Therapists	47	47	0	0	47
Actuaries	42	44	+2	44	0

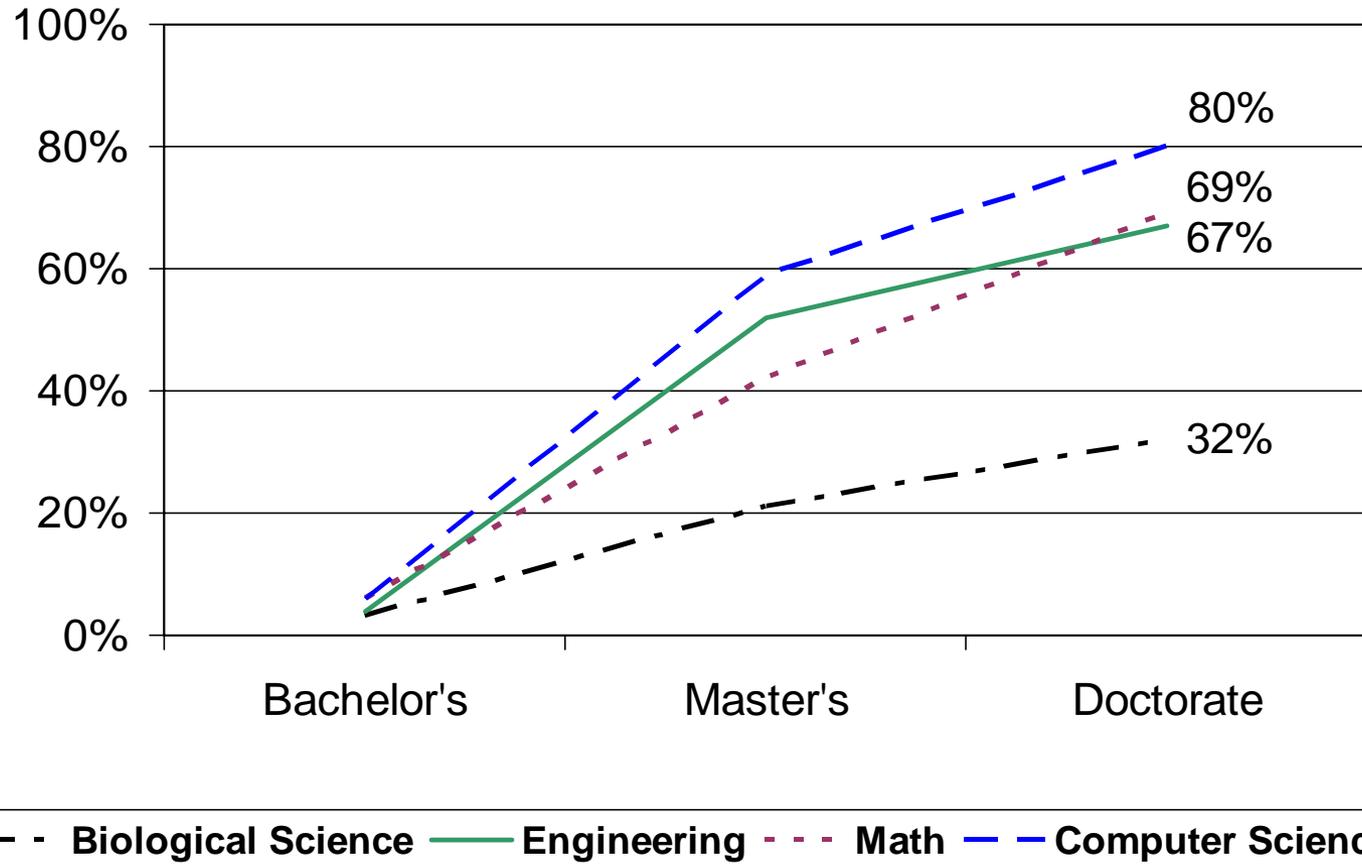
## Examples of Oversupply

Occupation	Projected Need for 2008 (Demand)	Total Number Graduated in 2008 (Supply)	Shortfall	Number Graduated	
				Public	Independent
Licensed Practical and Licensed Vocational Nurses	324	658	+334	No info	No info
Lawyers	271	513	+242	188	325
Elementary School Teachers	913	1,358 (1,927)	+1,014	536	822

## Examples of Undersupply

Occupation	Projected Need for 2008 (Demand)	Total Number Graduated in 2008 (Supply)	Shortfall	Number Graduated	
				Public	vs. Independent
Veterinary Technologists and Technicians	75	11	-64	11	0
Industrial Engineers	139	36	-103	12	24
Comprehensive Special Education, K-12	566	200 (340)	-226	129	71

**Figure III-1. Percent of International Students in STEM Fields**



# Conclusions About Alignment

- For some occupations, employer demand met by CT postsecondary institutions
- All CT employer needs do not have to be met by graduates from state postsecondary education institutions
- Awareness of occupational shortages *may* lead to more programs and graduates in a given area
- Awareness of occupational shortages *may not* lead to more programs and graduates if students do not enter field

## Conclusions About Alignment, contd.

**Increasing** percent of students who  
complete their **degrees and certificates**  
would **better meet** overall **employer demand**  
for a  
skilled and knowledgeable workforce

# Possible Barriers to Alignment

- Elementary and Secondary School Related
- Postsecondary Education Related
- Projecting Job Demand
- Current Economic Challenges
- State Agency Organization, Programs, and Policies

# Possible Barriers to Alignment: Elementary and Secondary School Related

**Table VI-3. State Ranking on Gap Between Higher- and Lower-Income Student Performance in 1996 and 2007**

State	Fourth Grade				Eighth Grade			
	Reading		Math		Reading		Math	
	1996	2007	1996 (N=44)	2007	1996	2007	1996 (N=41)	2007
<b>Connecticut</b>	<b>51</b>	<b>50</b>	<b>42</b>	<b>50</b>	<b>51</b>	<b>50</b>	<b>39</b>	<b>50</b>
Massachusetts	45	36	10	34	38	37	34	49
Rhode Island	34	40	28	38	43	47	27	44
Vermont	21	19	10	13	11	13	6	6
New Hampshire	13	15	-	4	5	6	-	13
Maine	6	7	5	7	1	1	5	3

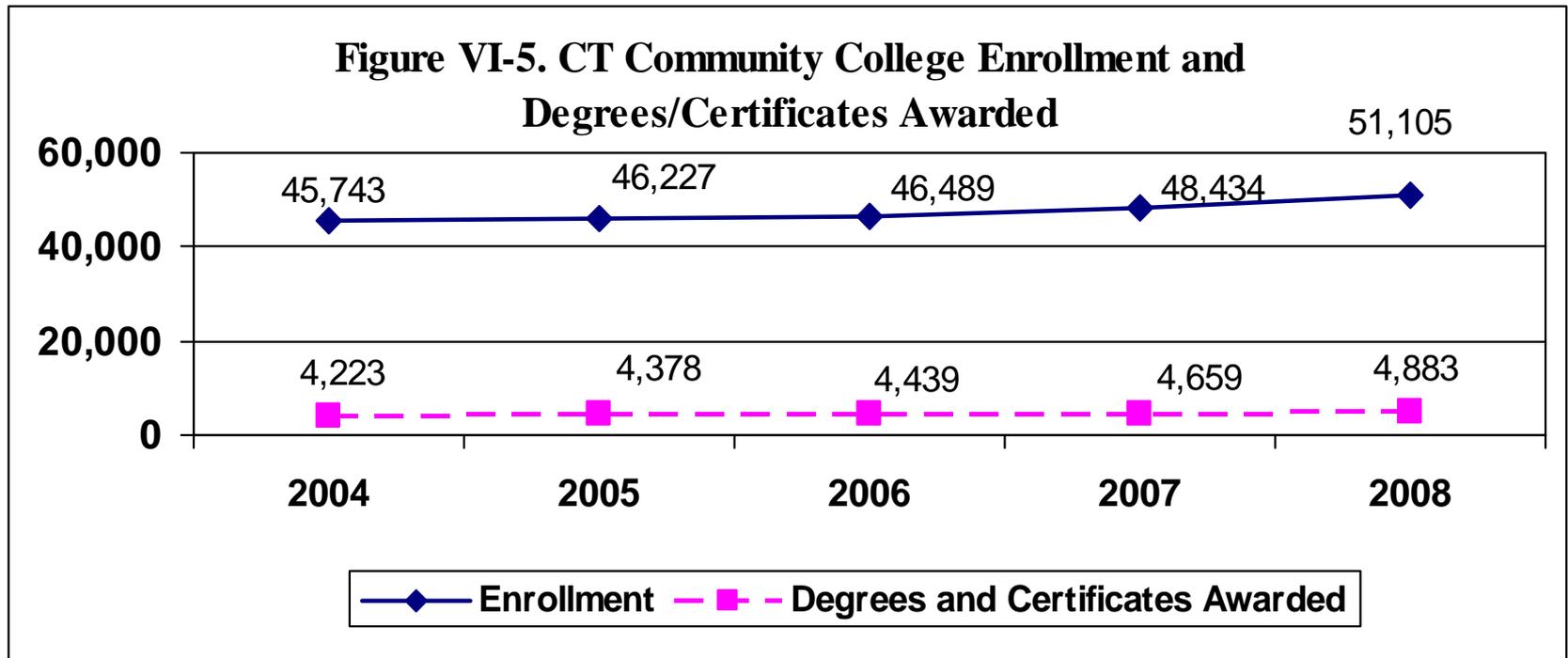
# Possible Barriers to Alignment: Elementary and Secondary School Related

Science performance of U.S.'s 15-year-olds is below average

- Finland (563)
- Hong Kong-China (542)
- Canada (534)
- Japan (531)
- Estonia (531)
- Australia (527)
- United Kingdom (515)
- Hungary (504)
- **United States (489)** (Average score = 500)

# Possible Barriers to Alignment: Postsecondary Education Related

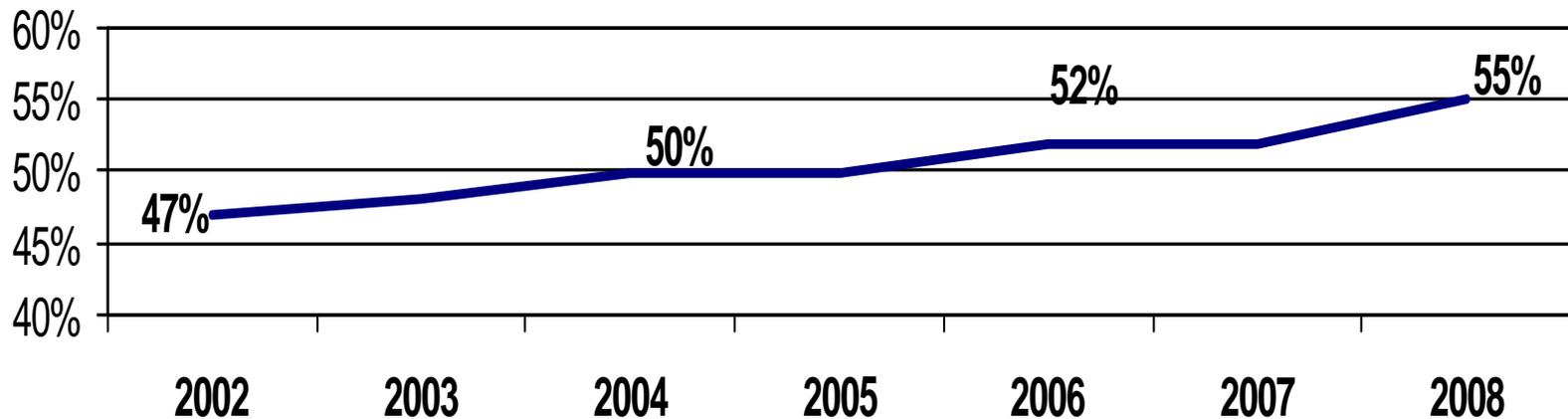
A fraction of community college students are earning degrees or certificates



# Possible Barriers to Alignment: Postsecondary Education Related

Many Community College Students Want to Earn  
an Associate's Degree

Figure VI-6. Percent of Connecticut College Students with the Primary  
Goal of Obtaining an Associate Degree



# Possible Barriers to Alignment: Projecting Job Demand

The ability to forecast job demand 10 years out is limited

Occupation	As projected in 1998	Actual # in 2008	Accuracy
Registered Nurses	34,502	35,370	↑2%
Licensed Practical Nurses	9,601	7,940	↓17%
Pharmacists	2,786	2,750	↓1%
Pharmacy Technicians	2,063	3,230	↑57%

# Possible Barriers to Alignment: Current Economic Challenges

- Over the past 5 years, college attendance has been increasing at all types of colleges
- Coinciding with economic downturn, more CT high school grads now choosing in-state colleges
- CT public community colleges and state universities report soaring enrollment
- This is good news for increasing CT's workforce supply

# Possible Barriers to Alignment: Current Economic Challenges

More with at least bachelor's degrees moving into CT than leaving CT

<b>Residents 25 years and over with at Least Bachelor's Degrees</b>				
<b>State</b>	<b>Migrating</b>		<b>% Change</b>	<b>Total Residents with at Least Bachelor's Degree</b>
	<b>Into CT</b>	<b>Out of CT</b>		
<b>Connecticut</b>	<b>29,877</b>	<b>26,904</b>	<b>0.37%</b>	<b>804,909 (34.3%)</b>
Massachusetts	56,276	55,007	0.08%	1,614,605 (37.0%)
Maine	9,878	7,495	1.0%	237,934 (25.9%)

## Possible Barriers to Alignment: State Agency Organization, Programs, and Policies

- Decentralized nature of public higher education system
  - Budgetary decisions made at constituent unit level
  - Funding driven by enrollment rather than outcomes
- High level of coordination needed:
  - Within education/higher education,
  - Among constituent units
  - Across education system, labor and workforce development, and economic development

## Possible Barriers to Alignment: State Agency Organization, Programs, and Policies

- Multiple loan incentive programs
  - Encourage students to enter critical shortage area
  - Usually piloted – no long-term funding available
- Student lack of knowledge about labor market and potential career ladders that would enforce benefits of certification or degree completion
- Social service needs of students not typically addressed – contributes to low completion rates

# Next Steps

- Gather more information on barriers to alignment, and propose possible solutions
- Examine the alignment of one established occupation in greater detail (Nursing?)
- Examine steps taken to align emerging field (Green Collar Jobs?)

# Public Hearing

**THIS AFTERNOON AT 3:00 pm**

**Legislative Office Building  
Room 2D**