# Between a Diploma and a Bachelor's Degree: The Effects of Sub-Baccalaureate Postsecondary Educational Attainment and Field of Training on Earnings

by Sarah R. Crissey and Kurt Bauman Housing and Household Economic Statistics Division, U.S. Census Bureau For presentation at the annual meeting of the Population Association of America Dallas, TX April 15-17, 2010

## Introduction

### Background

- Educational attainment is an important gateway to higher earnings
- General human capital benefits
- Training for specialized jobs with higher pay
- Increase in post-secondary schooling below bachelor's degrees
- Vocational certificates and degrees
- Associate's degrees
- Earnings higher for sub-baccalaureate degrees compared to high school graduate (but less than bachelor's and higher)
- But earnings can be highly varied
- Individual characteristics
- Level of degree
- Field of training
- Job related to field of training

### Data

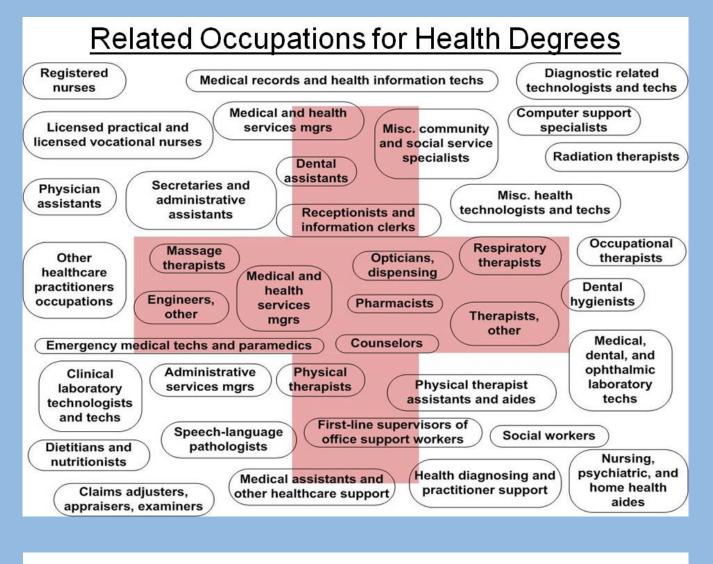
- Survey of Income and Program Participation (SIPP)
- Education and Training History Topical Module
- 2004 and 2001 Panels
- Contains information on educational attainment, field of highest degree, occupation and earnings

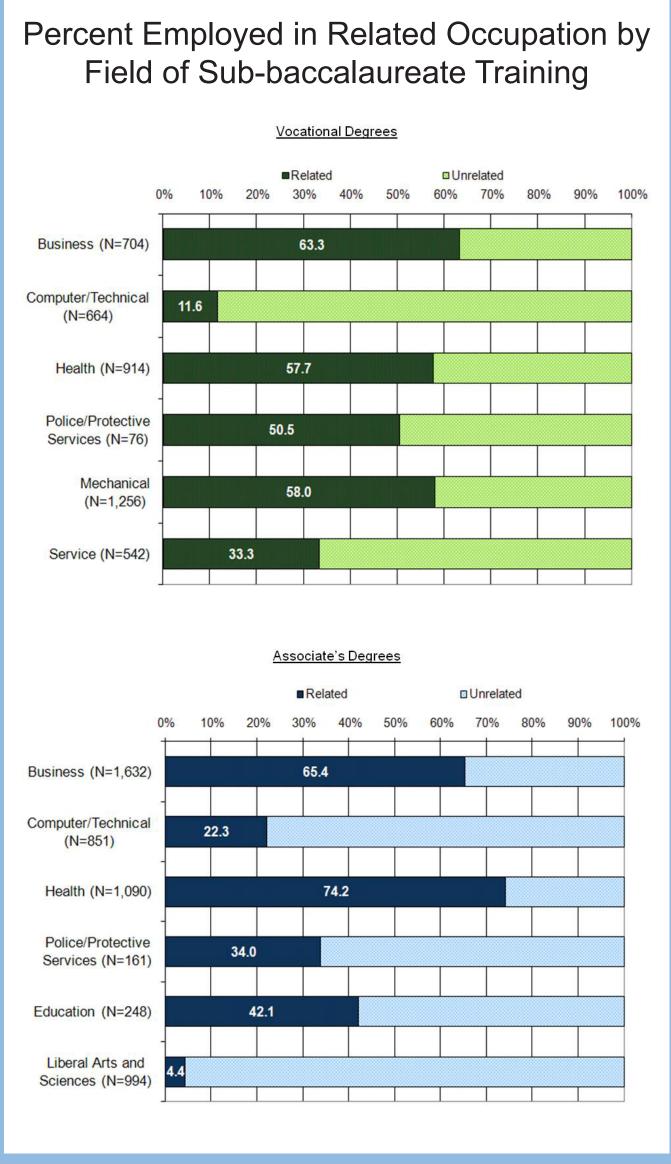
### Sample and Methods

- Analytical sample selection:
- High school or sub-baccalaureate degree
- Reported earnings in the 4-month reference period preceding interview
- ❖ Effective sample size of 37,513 adults
- Compare vocational and associate's degrees to high school degree
- Estimate effect of level, field, and employment in occupation related to field
- Regression estimates of log monthly earnings
- Controls for demographic and labor force characteristics
- Estimate models separately by panel and average coefficients

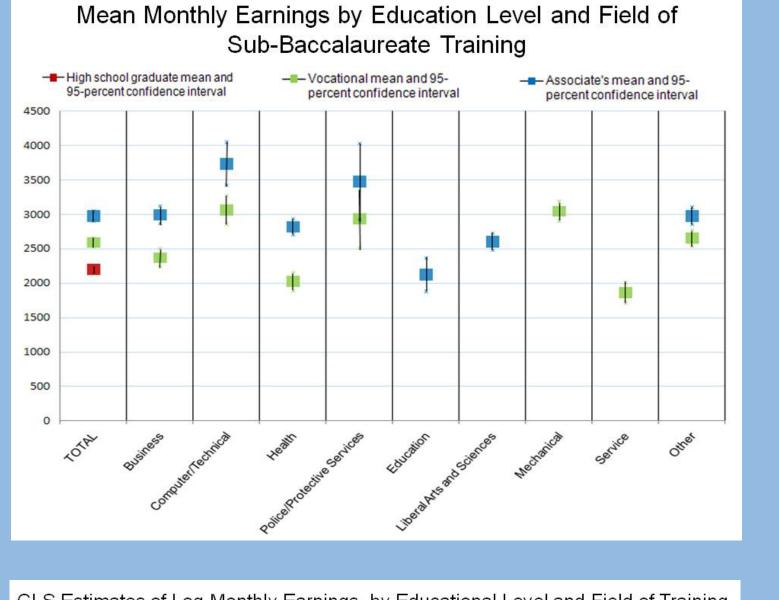
# Related Occupation Variable

- Based on crosswalk between Classification of Instructional Programs (CIP) and the Standard Occupational Classification (SOC)
- 'Related occupation' = person currently employed in one of the occupations associated with field of sub-baccalaureate training.





# Independent Effects of Educational Level, Field of Training, and Related Occupation on Earnings

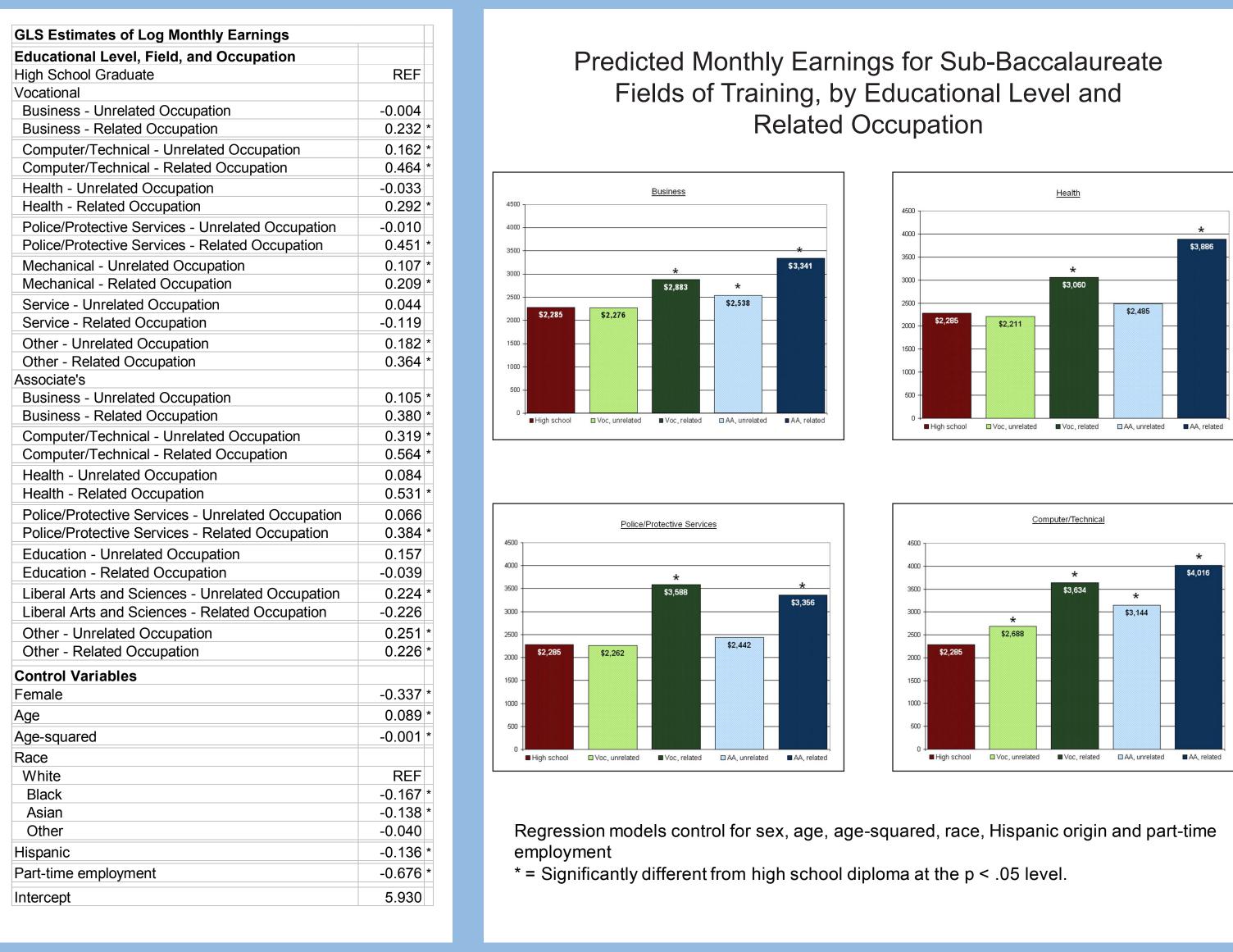


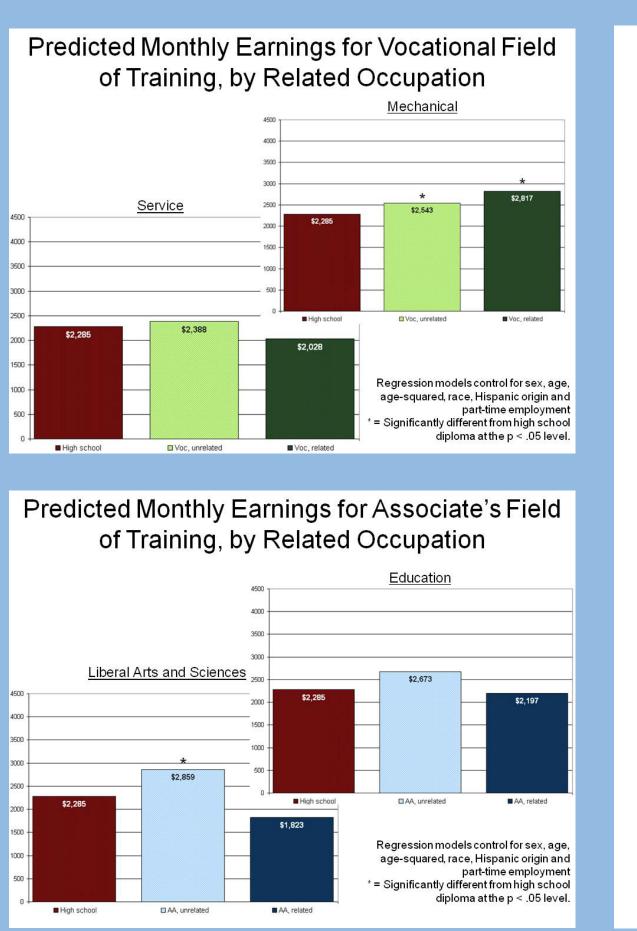
	Model 1		Model 2		Model 3	
ducational Level and Field						
ligh School Graduate	REF		REF		REF	
ocational Degree	0.154	*				
Business			0.144	*	0.027	
Computer/Technical			0.198	*	0.176	*
Health			0.164	*	0.054	
Police/Protective Services			0.218		0.128	
Mechanical			0.166	*	0.059	
Service			-0.017		-0.082	
Other			0.187	*	0.179	*
ssociate's Degree	0.281	*				
Business			0.284	*	0.162	*
Computer/Technical			0.374	*	0.333	*
Health			0.413	*	0.276	*
Police/Protective Services			0.182		0.118	
Education			0.064		-0.011	
Liberal Arts and Sciences			0.205	*	0.197	*
Other			0.248	*	0.239	*
Related occupation					0.187	*

# Findings ❖ Level of education matters ❖ Earnings for those with either a vocational or associate's degree were higher than those with a high school degree ❖ Field of training matters

- Most, but not all, sub-baccalaureate fields of study associated with higher earnings than high school diplomas
- Vocational: business, computer/technical, health, mechanical, and other were higher
- Associate's: business, computer/technical, health, liberal arts and sciences, and other were higher
- Related occupation positively associated with higher earnings, but doesn't explain all the effects of field of training

# Differences in the Effect of Field of Training on Earnings by Educational Level and Related Occupation





### Findings

- Effect of attainment level and field of training varies by related employment
- Fields with higher earnings than high school regardless of related employment:
- Vocational: computer / technical, mechanical, and other
- Associate's: business, computer/technical, other
   Fields with higher earnings than high school only when employed in related occupation:
- Vocational: business, health, police / protective services
- Associate's: health, police / protective services
  Earnings in some fields are never higher than high
- ❖ Vocational: service
- Associate's: education

## Conclusions

### Findings

- Educational attainment, field of training, and employment in a related occupation are all associated with earnings net of controls for demographic and work force characteristics
- But there are interaction effects between these three variables
- Persons with sub-baccalaureate degrees on average earn more than high school graduates, but varies by level, field, and related occupation.
- Computer/technical degrees associated with higher earnings than high school at both levels and in related and unrelated occupations.
- Degrees in health and police/protective pay off only when employed in a related occupation.
- ❖ Vocational degrees in service and associate's degrees in education were not associated with higher earnings than a high school diploma, even when employed in a related occupation.
- With increase in popularity and support for subbaccalaureate degrees, need to better understand the economic returns

### CONTACT INFORMATION

For more information, contact:

Sarah R. Crissey

Statistician, Education and Social Stratification Branch
Housing and Household Economic Statistics Division
U.S. Census Bureau

sarah.r.crissey@census.gov 301.763.2464

USCENSUSBUREAU