

*Return on Investment for Virginia's  
Public Workforce Development  
Programs*

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June 24, 2014

# Purpose

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1. estimate the return on investment for public dollars expended on Virginia's workforce development participants and to
2. understand the specific contribution of various workforce services toward desired outcomes

# Research Questions

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- (1) What is the return on investment to government for providing public workforce development services to VA jobs seekers?
- (2) How does ROI differ across service levels, demographic groups, and LWIA?
- (3) What roles do demographic, service and economic factors play in employment and earnings outcomes for workforce program participants?

# Programs

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## Workforce Investment Act (WIA)

- Universal Access
- Serves adults, dislocated workers and youth
- Core services, intensive services and training

## Trade Adjustment Assistance (TAA)

- Specifically to assist trade-affected workers and firms
- Services: rapid response assistance, reemployment services job search and/or relocation allowances, training income support, training waivers, and a health coverage tax credit

## Wagner-Peyser Act (WP)

- Also referred to as the Employment Service (ES)
- Funds support the labor exchange program
- Job match process, the work test for Unemployment Insurance, and circulation of job-related information
- No Training

# Return on Investment (ROI)

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The purpose of the ROI calculation is to compare the costs of an intervention with the value of its results.

$$\text{ROI} = ((\text{Value} - \text{Costs}) / \text{Costs}) \times 100$$

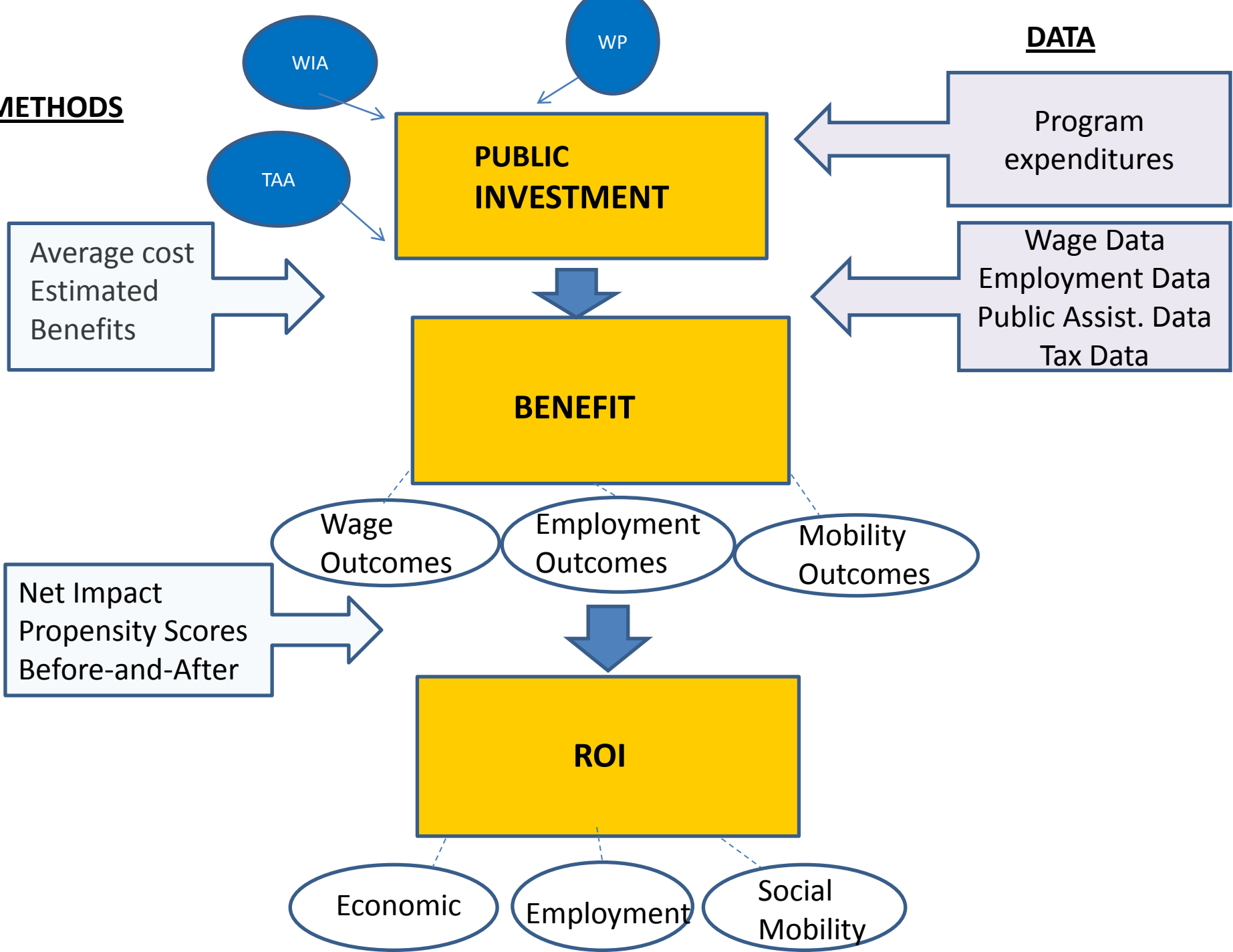
(percentage)

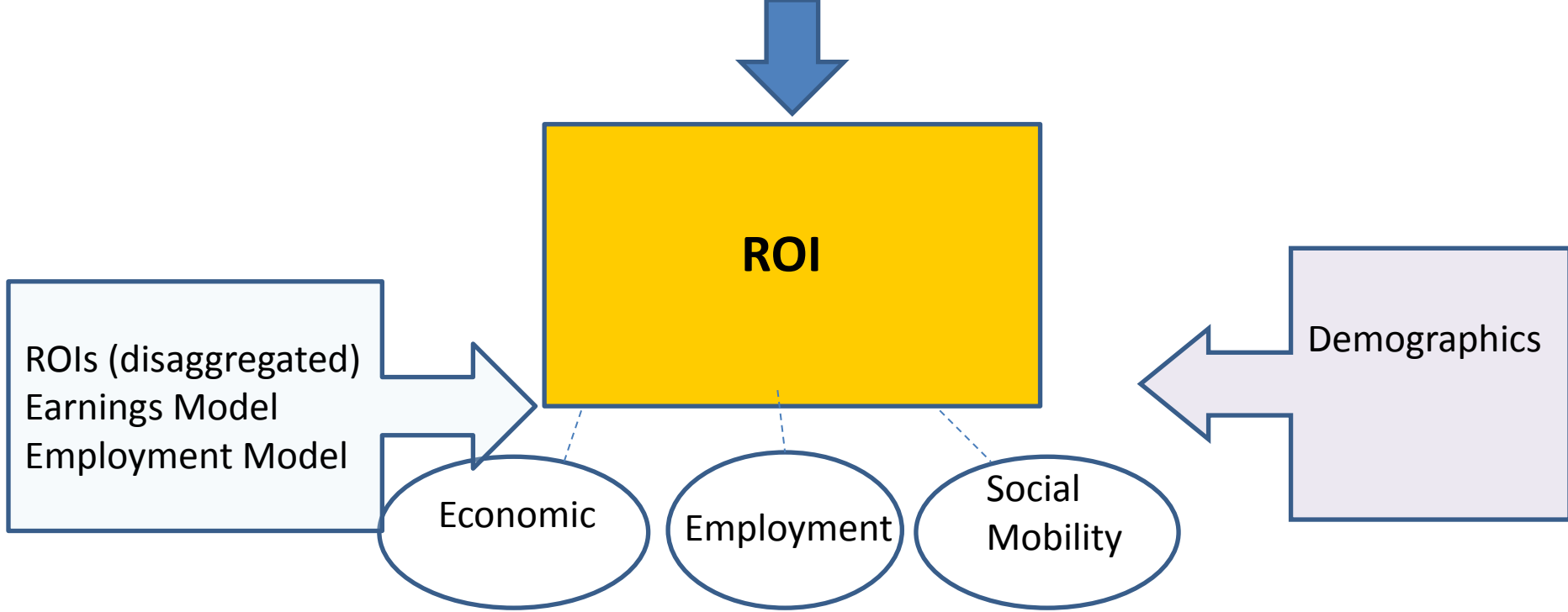
Value = program savings, additional tax revenue (based on earnings increase)

Costs = program costs, training costs

**METHODS**

**DATA**





- Program
- Region
- Service level
- Race
- Gender
- Education Level
- Age
- Disability Status

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**MODELS**

# Key Design Decisions

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1. Focus study on WIA, TAA and WP
2. Include ages 18 and older (adult and dislocated workers for WIA)
3. Exclude cases with missing or incomplete wage data
4. Use quarter prior to program and second quarter after exit
5. Discounted at 3% per year



**Table 3 : ROI Expenditures and Returns per Year by Program**

	WIA	TAA	WP
<b>Expenditures</b>			
<b>Avg. Costs</b>			
Program	\$643	\$374	\$41
Training	\$435	\$3,366	N/A
<b>Returns</b>			
<b>Taxes Rates</b>			
State and Local Income	9.70%	9.70%	9.70%
FICA	7.7%	7.7%	7.7%
Federal Income	5.0%	5.0%	5.0%
<b>Public Assistance Benefits</b>			
TANF +SNAP	\$5,436	\$5,436	
SSI + SNAP	\$10,872	\$10,872	
SNAP Only	\$3,432	\$3,432	
UI Only			\$2,082

## Why Calculate ROIs Using both Before-and-After and Propensity Score Matching Methods?

We calculate ROI using both methods because each has strengths and weaknesses. The table below summarizes the pros and cons of each.

	<i>Pros</i>	<i>Cons</i>
Before-and-After	<ul style="list-style-type: none"><li>• Straightforward/Easy to apply</li><li>• Uses all available cases in each dataset</li><li>• Reflects true population served by program</li></ul>	<ul style="list-style-type: none"><li>• No control group</li><li>• Possible internal validity issues</li></ul>
Propensity Matching	<ul style="list-style-type: none"><li>• Simulates random assignment</li><li>• Balances individual characteristics</li><li>• Commonly accepted method</li></ul>	<ul style="list-style-type: none"><li>• Limited to cases with matches</li><li>• Data does not reflect true population served</li><li>• Accuracy contingent on quality of matches</li><li>• Only looks at post-program results</li></ul>

# Before-and-After Method Example

Qtr. Wage before=	\$3,616 or \$14,164/yr.
Qtr. Wage after=	\$5,896 or \$23,584/yr.

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Difference	\$9,420
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Additional Taxes expected:

+ .0765 \* \$9,240 = \$707

+ .045 \* \$9,240 = \$416

Savings from TANF	+ \$3,289
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Total Benefits(Value)	\$4,412
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Cost	\$1,268
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1 Year ROI = (Value-Cost)/Cost \* 100

ROI = 247% or \$2.47 for each dollar invested



# Propensity Matching Method Example

Qtr. Wage WIA (treatment group) = \$3,616 or \$14,164/yr.  
Qtr. Wage WP (control group) = \$5,896 or \$23,584/yr.

Difference \$9,420

Additional Taxes expected:

+ .0765 \* \$9,240 = \$707

+ .045 \* \$9,240 = \$416

Savings from TANF

+ 3,289

Total Benefits(Value)

\$4,412

Avg. Cost=

\$1,268

1 Year ROI = (Value-Cost)/Cost \* 100

ROI = 247% or \$2.47 for each dollar invested

# Study Limitations

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- UI Wage Record Limitations
  - Only 69% with data each quarter after exit
  - 9% WRIS Flag
- Data quality/reliability
  - Missing elements
  - Self-reported elements
  - Inconsistency across records

# Results

Finding 1:

**WIA AND WP POSITIVE ROI BUT  
TAA MIXED**

# WIA ROI Results

	Propensity Matching		Before-and-After	
	5 Year	10 Year	5 Year	10 Year
Average Cost	\$901		\$901	
Net Gain/Loss	\$2,386	\$6,110	\$1,544	\$3,249
Returns in Dollars	\$2.65	\$5.78	\$1.72	\$3.60

# WP ROI Results

	Before-and-After		
	5 Year	10 Year	
Average Cost	\$41		
Avg. Net Gain/Loss	\$2,150	\$3,647	
Returns in Dollars	\$62.75	\$106.74	



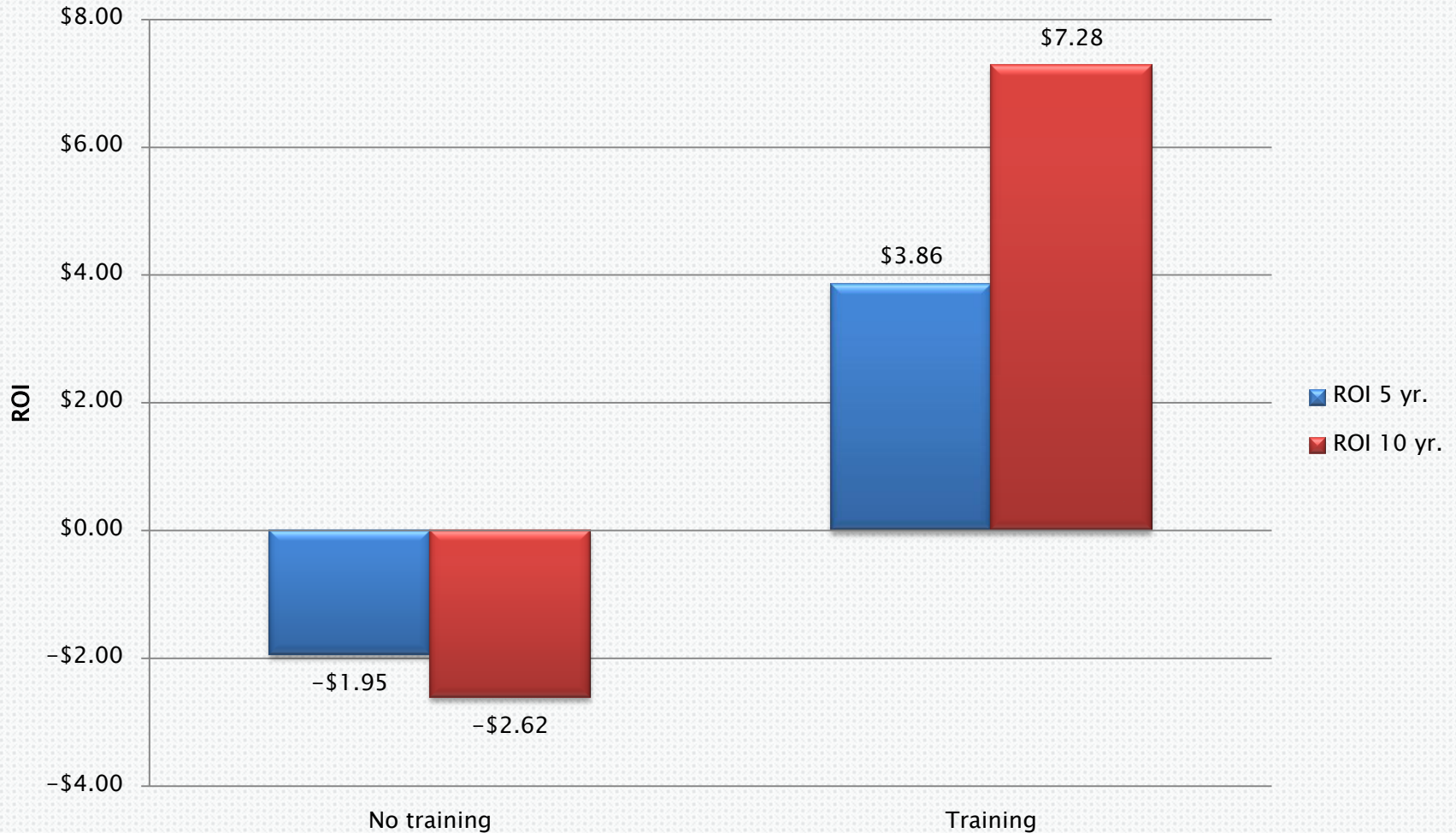
# TAA ROI Results

	Propensity Matching		Before-and-After	
	5 Year	10 Year	5 Year	10 Year
<b>Average Cost</b>	\$2,055		\$2,055	
<b>Net Gain/Loss</b>	\$3,111	\$7,547	-\$15,991	-\$27,904
<b>Returns per Dollar Invested</b>	\$1.51	\$3.67	-\$34.86	-\$63.94

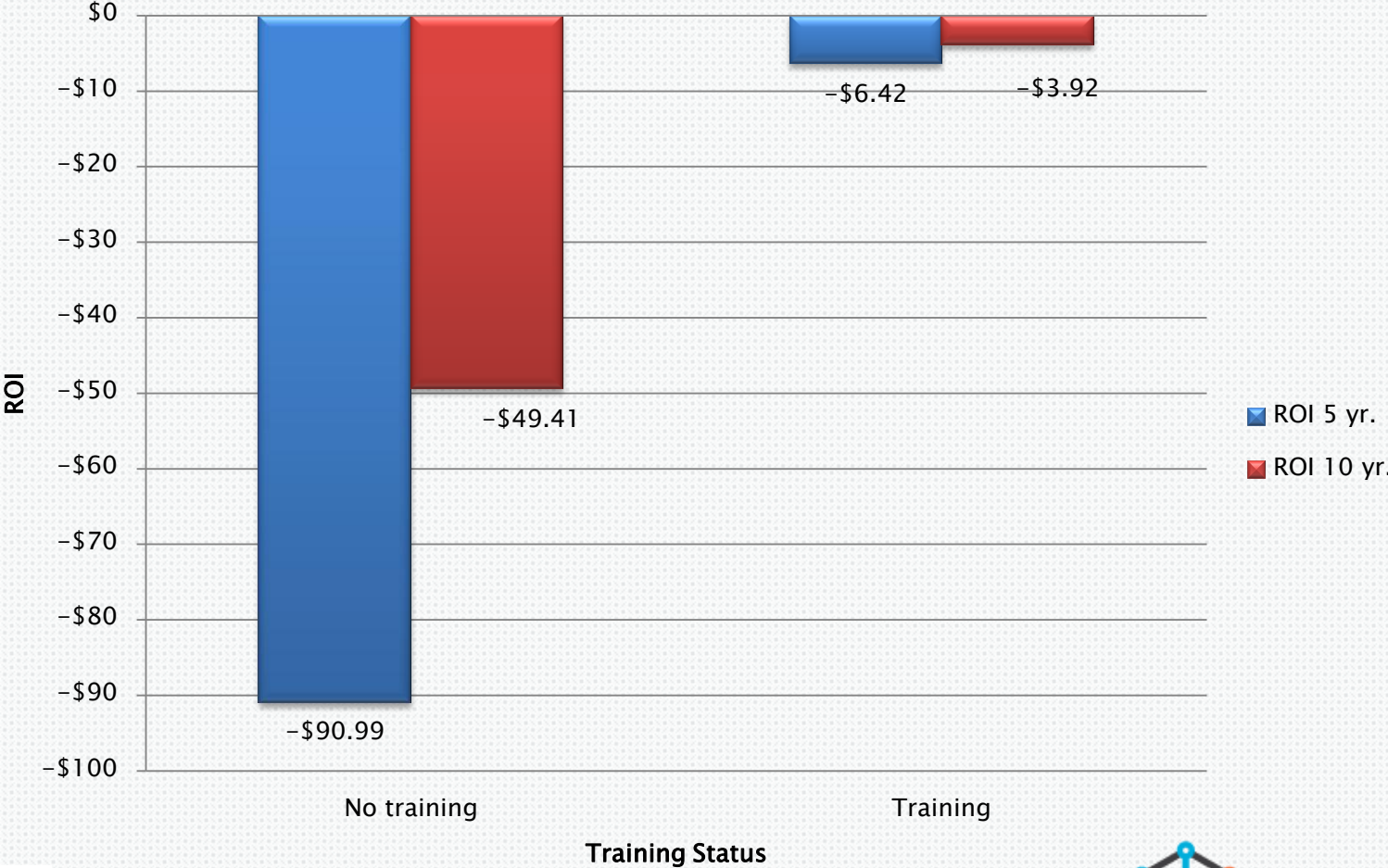
Finding #2:

# TRAINING MATTERS

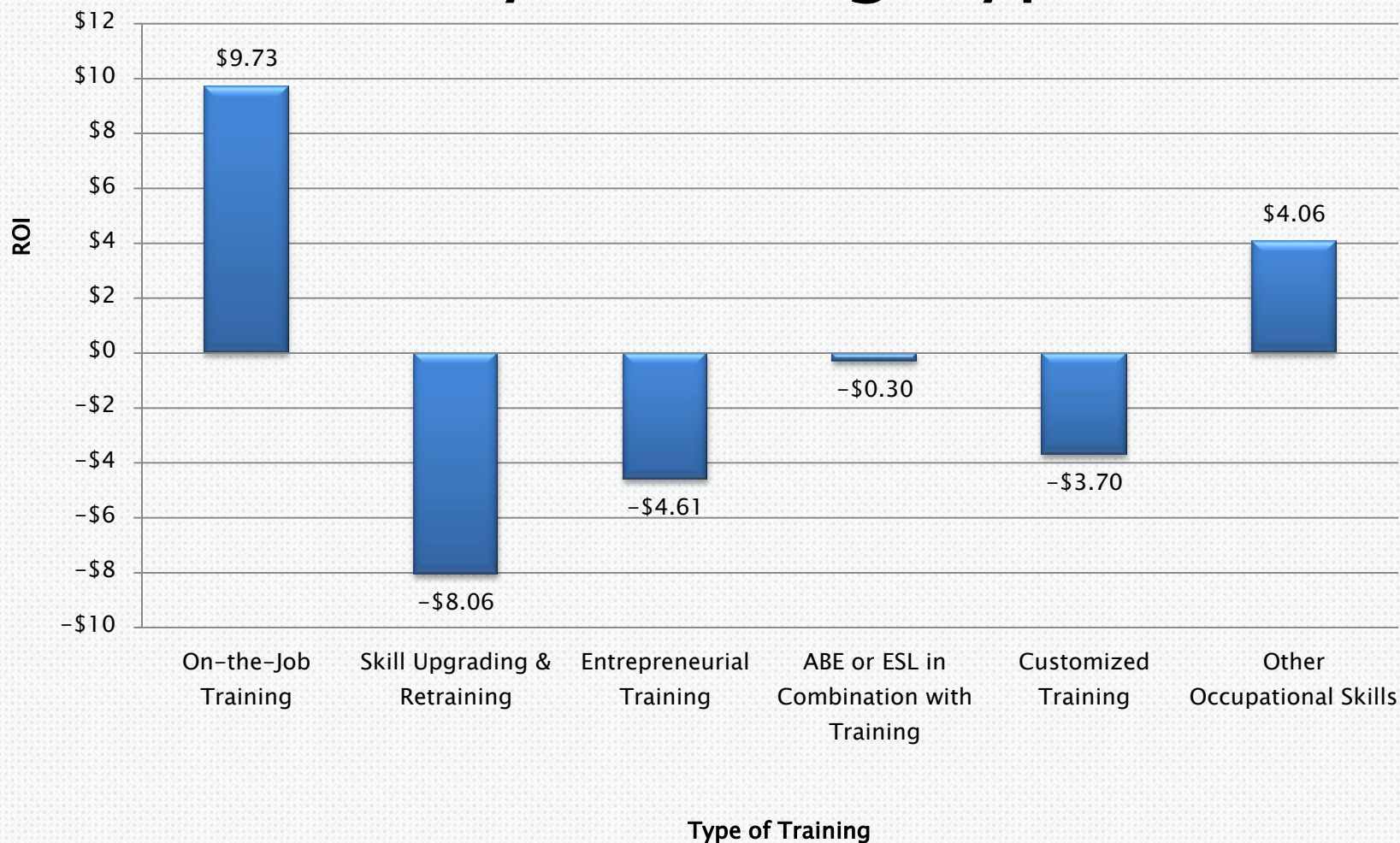
# WIA ROI by Training Status



# TAA ROI by Training Status



# WIA 5-Year ROI by Training Type



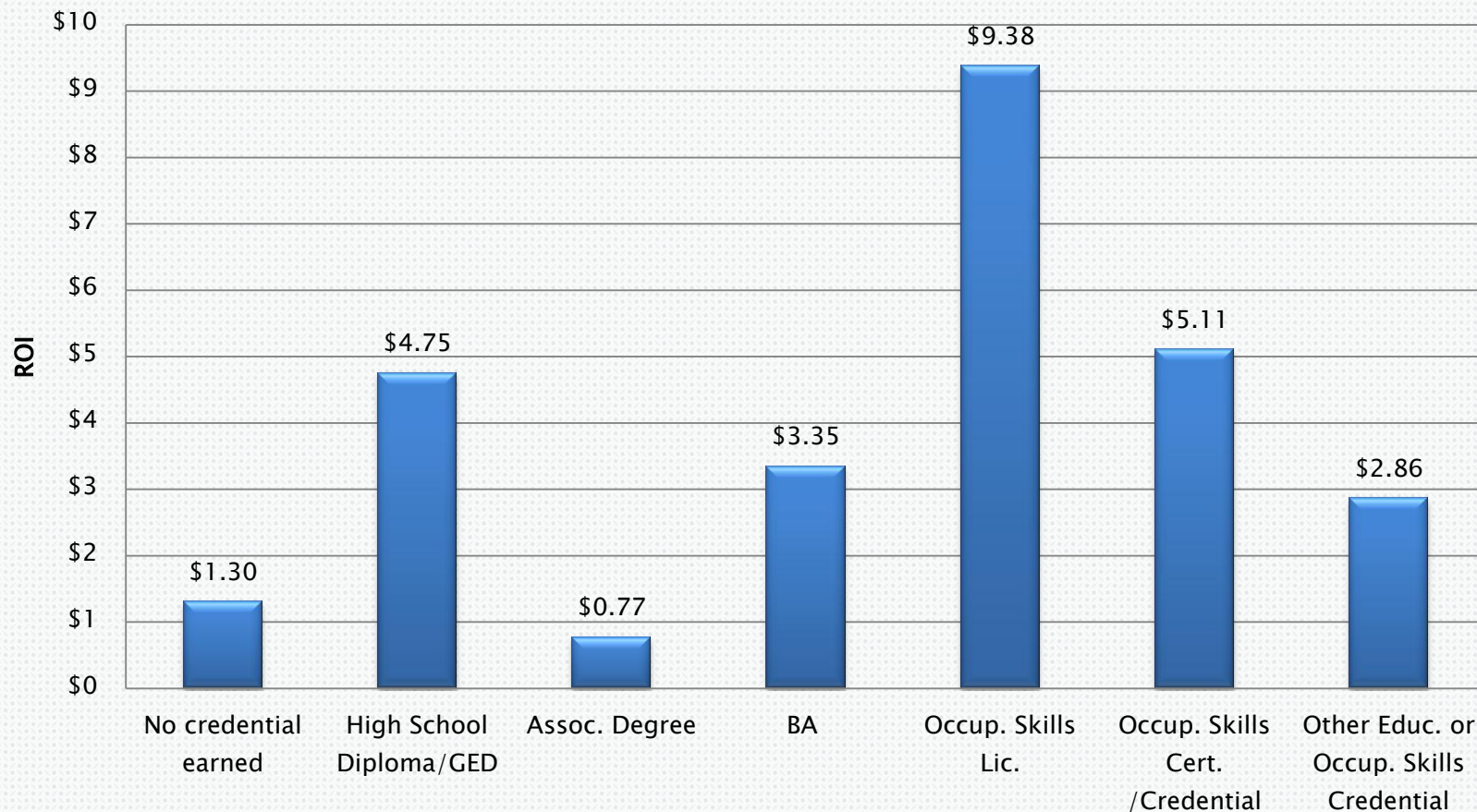
Finding #3:

# BEYOND TRAINING, CREDENTIALS MATTER

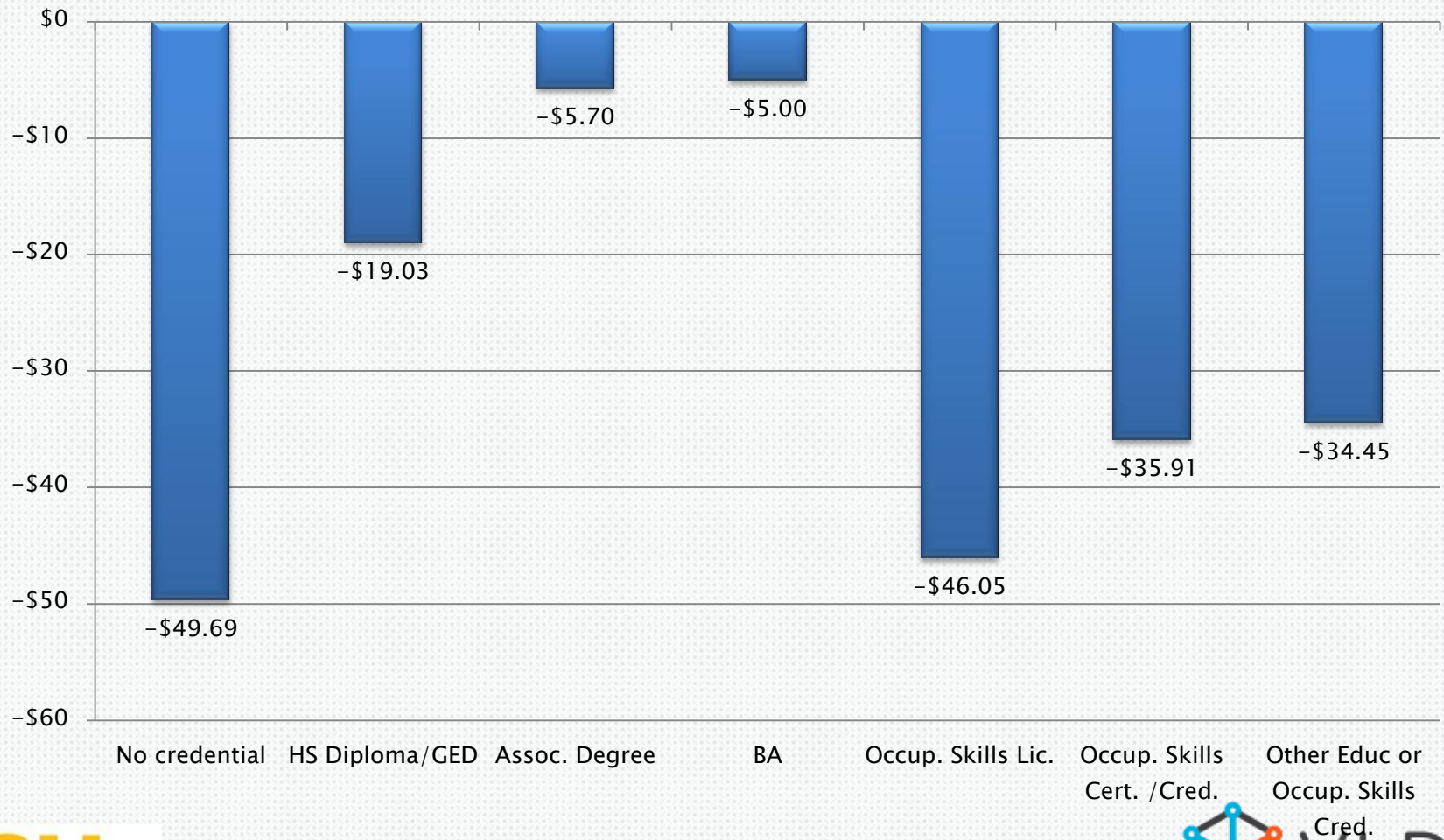
**VCU**  
VIRGINIA COMMONWEALTH UNIVERSITY



# WIA 5-Year ROI by Training Credential Earned



# TAA 5-Year ROI by Credential Earned





Finding #4:

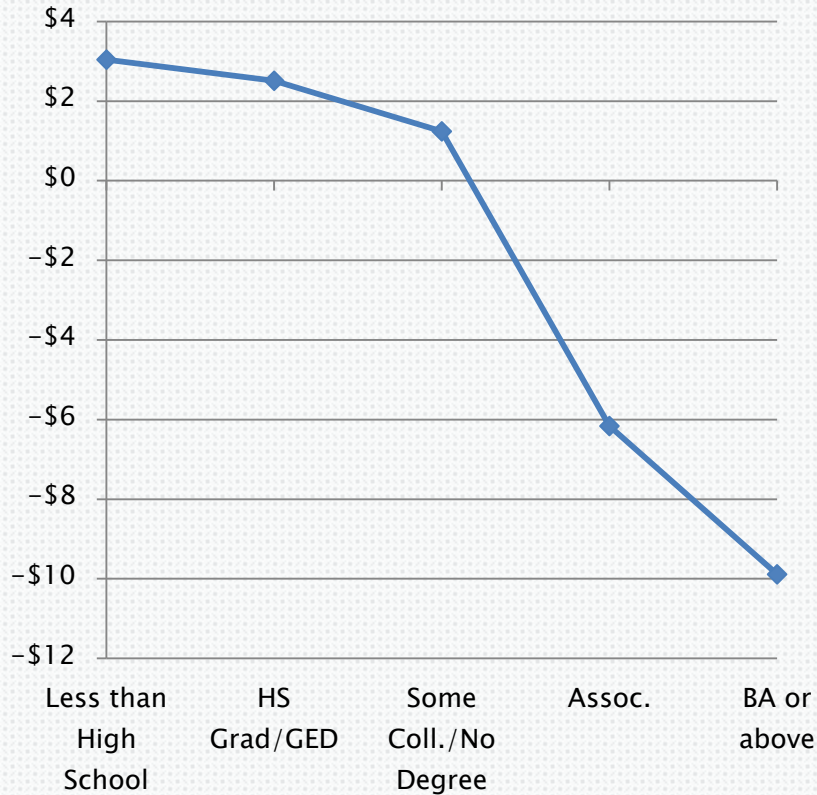
# HIGH ROI FOR DISADVANTAGED WIA & TAA

**VCU**

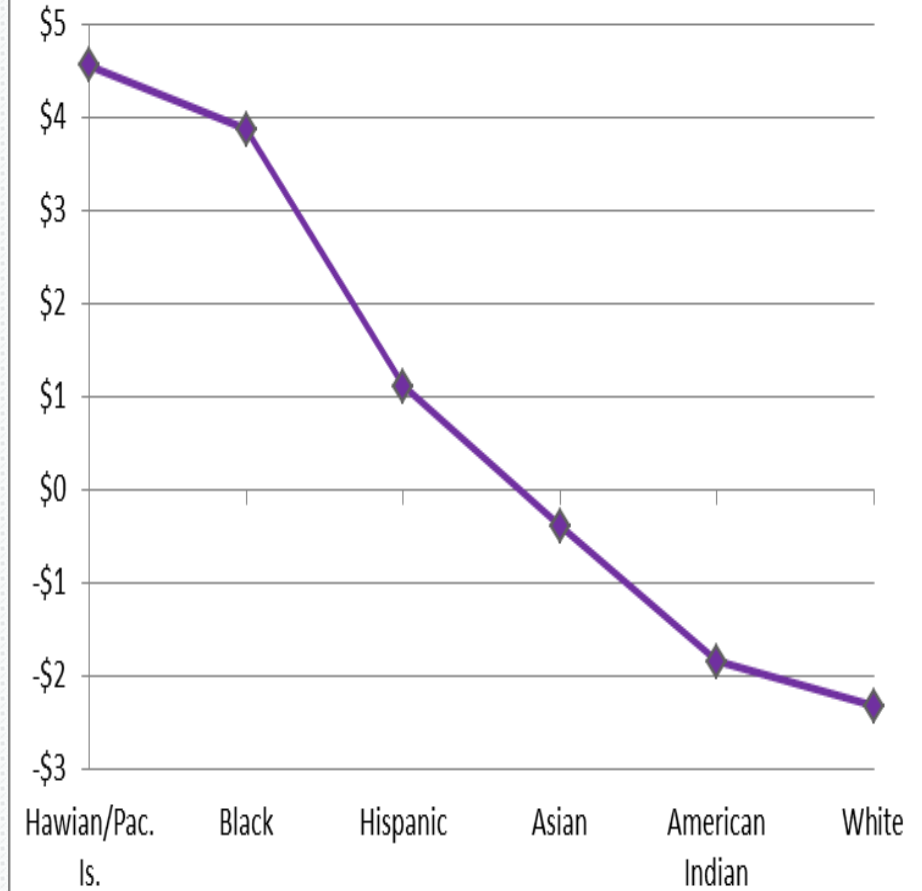
VIRGINIA COMMONWEALTH UNIVERSITY



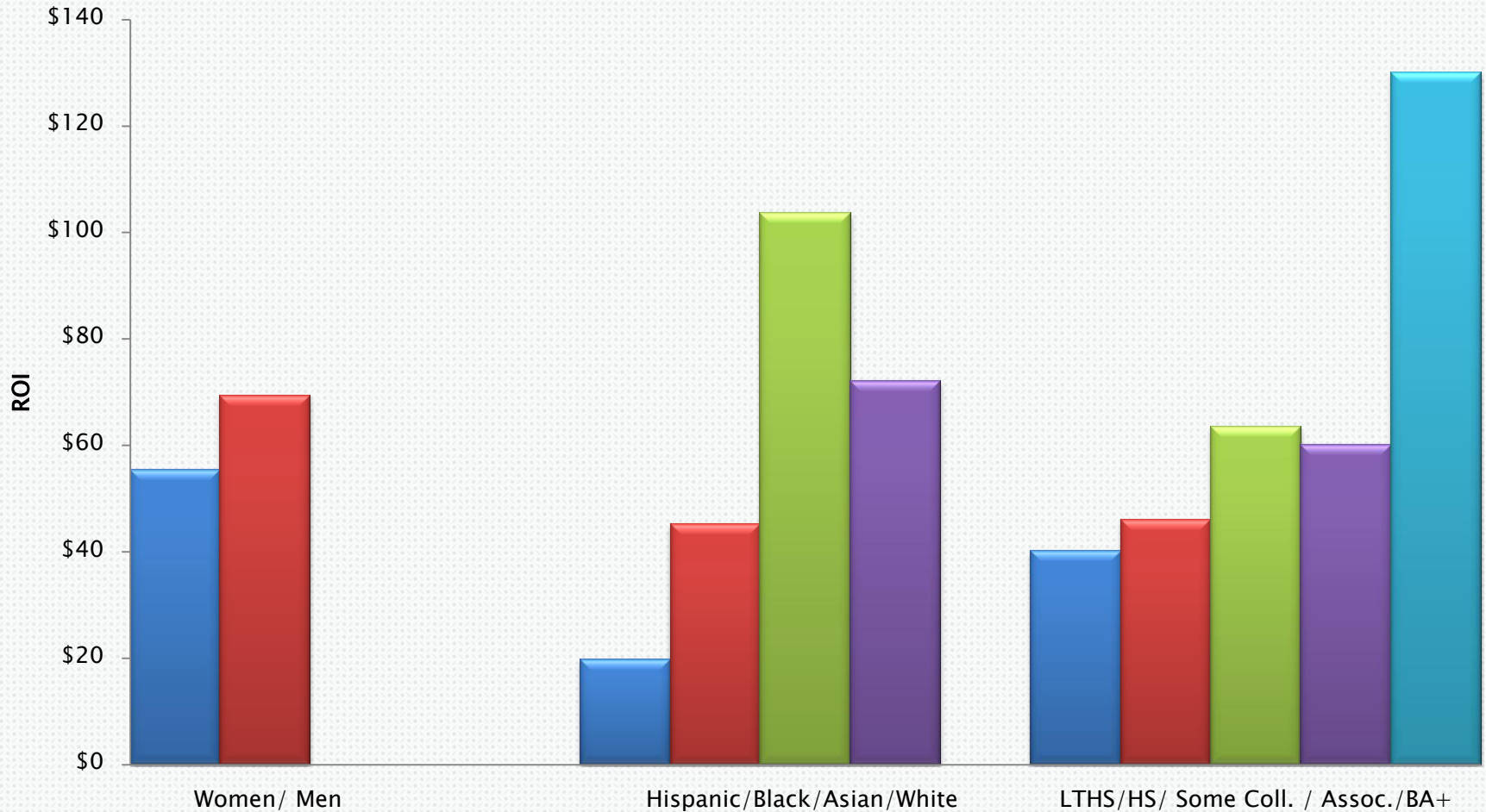
## WIA Education Prior to Prog.



## WIA ROI by Race/ Ethnicity



# WP ROI by Gender, Race & Prior Education



# WIA 5-year ROI by Vulnerable Group

Barriers to LM	Non- Group Members	Group Members
Individual with Disability	\$0.47	\$6.53
Limited English	\$0.73	\$0.28
Basic skills deficient	\$0.27	\$8.81
Less than High School	\$0.31	\$3.04
Homeless	\$0.66	\$7.55
Offender	\$0.27	\$8.81
Low income	-\$7.77	\$13.23
Traditionally Disadvantaged		
Female	-\$4.09	\$4.19
Hispanic	\$0.71	\$1.12
Black	-\$1.87	\$3.87
Elderly	\$0.87	-\$18.52

Table H1: WIA ROI by LWIA

LWIA	5 Year	10 Year
Alexandria Arlington	\$1.44	\$3.16
Bay Consortium	\$9.79	\$17.37
Capital Region Workforce Partnership	-\$10.39	-\$16.98
Crater Area	\$6.24	\$11.32
Greater Peninsula	\$6.57	\$11.88
Hampton Roads	-\$6.72	-\$10.73
New River Mt Rogers	\$12.29	\$21.63
Northern Virginia	\$9.52	\$16.90
Piedmont Workforce Network	\$4.40	\$8.19
Region 2000 Central Virginia	\$10.51	\$18.59
Shenandoah Valley	\$0.97	\$2.35
South Central	\$4.86	\$8.97
Southwestern Virginia	\$6.11	\$11.11
West Piedmont	-\$1.75	-\$2.28

**Table H2: TAA ROI by Region**

<i>Region</i>	5 Year	10 Year
Northern Virginia Workforce Investment Board	-\$10.22	-\$18.14
Greater Peninsula Workforce Investment Board	-\$114.20	-\$211.41
Opportunity Inc.	-\$111.89	-\$207.12
Southwest Virginia Workforce Investment Board	-\$9.63	-\$17.05
New River/Mt. Rogers WIB	\$11.55	\$22.32
Piedmont Workforce Network	-\$33.03	-\$60.53
Bay Consortium Workforce Investment Board, Inc.	-\$83.05	-\$153.51
Western Virginia Workforce Development Board	-\$22.14	-\$40.29
Crater Regional Workforce Investment Group	-\$52.35	-\$96.45
State Funded (1)	-\$24.79	-\$45.22
Region 2000 Workforce Investment Board	-\$11.15	-\$19.87
State Funded (2)	-\$16.19	-\$29.24
Shenandoah Valley Workforce Investment Board	-\$33.04	-\$60.56
Capital Region Workforce Partnership	-\$59.40	-\$109.55

# Regression Results: Demographics

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- Low levels of education (less than high school); disability and gender (female compared to male) all have negative impacts on earnings that are statistically significant across all programs
- Higher levels of education all have increasingly large and positive impacts on earnings that are statistically significant across all program
- Demographic impacts on employment were mixed

# Conclusions

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1. WIA and WP show positive ROIs across both methods of calculation while TAA results are mixed
2. ROI results for WIA and TAA are vastly improved with training compared to not training.
3. Earning a credential as a result of training improves ROIs for both TAA and WIA over training but not earning a credential.
4. Participation by demographic groups that have traditionally been disadvantaged in the labor market yielded higher returns than non-disadvantaged groups in WIA and TAA.
5. Despite higher ROIs, earnings and employment outcomes for participants from certain racial groups, lower education levels, women and disabled people are still significantly less favorable than their counterparts.



# 1. Capitalize on what is already working

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- Strategically align workforce training opportunities with credentials and credential pathways.
- Ensure that program performance information is both available and understandable to participants by creating easily accessible and user-friendly mechanisms such as social media pages
- Outreach to traditionally disadvantaged groups
- Understand best practices and examine why certain types of training programs are yielding better results than others

## 2. Integrate ROI into the broader Virginia workforce performance measurement system

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- ROI results should be coupled with other types of performance metrics especially ones that place the ROI outcomes in context
- Policy makers should strive to create innovative performance metrics including enhanced ROI models to account for economic and demographic context of the programs being assessed.

### 3. Improve data collection and data quality for more robust ROI outcomes

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- Take steps to minimize the number of assumptions underlying ROI (and other performance measures) by utilizing more data points (including both quantitative and qualitative).
- Supplement quantitative data on returns on investment with qualitative process data

# Implications

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- Understanding ROI is critical for continued federal, state and local support of public workforce programs
- Knowledge of the specific programmatic factors contributing to greater ROI can help program administrators prioritize resource distribution for maximum effectiveness and efficiency
- Continuously improving the quality of VA workforce is crucial for maintaining a strong and growing economy

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# Thank You!

**Table G1: Five Year Net Returns on Investment from WIA using Propensity Matching  
Taxpayer Perspective (3% Discount Rate)**

	Program Year	Year 1	Year 2	Year 3	Year 4	Year 5	Five Year total Benefits
Wage diff	\$844						
<b>Expenditures/Government</b>							
Average Program Cost	\$901						\$901
<b>Returns</b>							
State and local	\$82						
Federal Income	\$42						
FICA	\$65						
Total Additional Tax	\$189						
Welfare Savings(TANF, SNAP and SSI)	\$531						
	\$720	\$698	\$677	\$657	\$637	\$618	
Total five Year Benefits(PV)							\$3,287
Net Return							\$2,386
ROI							265%
							\$2.65

\*All Estimates based on matched dataset