RETURNS TO COMMUNITY COLLEGE:
COMPLETION AND NON-COMPLETION

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A LITTLE ABOUT MY BACKGROUND

- Attended Solano Community College in Fairfield, California
  - Completed several associate degrees, including:
    - Water & Wastewater Technology
    - Chemistry
- Transferred to California State University Sacramento for a baccalaureate degree
- Worked full-time as an operator at a wastewater treatment plant for most of my undergraduate education
  - To this day, I still maintain my license to operate a wastewater treatment plant in California

LEST THERE BE ANY DOUBT…

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WASTEWATER LICENSE (CERTIFICATE)

State of California
State Water Resources Control Board

Certificate of Competence

This is to certify that pursuant to the provisions of Chapter 9, Division 7 of the California Water Code

Peter R. Bahr

has fulfilled the requirements for certification as a

Grade V

Wastewater Treatment Plant Operator
Certificate Number **8798**

Issued this October 21, 2016

Original Issue Date: 12/30/1998
Expiration Date: 12/31/2018

Felicia Marcus
Chair

This certificate is the property of the State of California and in the event of its suspension, revocation or invalidation for any reason, it must be returned to the State Water Resources Control Board upon demand.

KEY FINDINGS FROM TWO RELATED STUDIES

- *The Earnings of Community College Graduates in California*
- *The Labor Market Returns to a Community College Education for Non-Completing Students*

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WHY FOCUS ON THE RETURNS TO COMMUNITY COLLEGE?

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WHY FOCUS ON THE RETURNS TO CC?

- *Access* is not really access if few students succeed.
  - Most community college students leave without a credential and without transferring to a 4-year institution.
- *Success* is not really success if the credential has little value.
  - Significant growth in postsecondary certificates awarded, but the economic value was largely unknown.
- *Accountability*: Are taxpayers getting their money's worth from the public investment in community colleges?

RECENT FINDINGS

1. Associate degrees provide significant earnings gains.
   - Women tend to experience greater returns than do men.
2. Long-term postsecondary certificates provide smaller gains in earnings than do associate degrees.
   - Gender differences in returns are mixed.
3. Findings regarding the returns to short-term certificates are mixed and contradictory.
4. Returns to any type of community college credential are highly dependent on field of study.

ARE THERE ANY LIMITATIONS TO RECENT RESEARCH?

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LIMITATIONS OF RECENT RESEARCH

1. Minimal capacity to illuminate differences in the returns experienced by historically disadvantaged groups.
   - Samples composed largely of White students

   Yet…

   - HD groups rely disproportionately on community colleges for access to postsecondary education
   - HD groups have lower rates of college completion

LIMITATIONS OF RECENT RESEARCH

2. Uncertain returns to many programs of study
   - Cell sizes of 10 students often considered adequate
   - *Are the returns near zero or are there too few students for precise estimates?*
3. Returns to credentials assumed to be constant over time
   - Inconsistent with what we know about how education influences earnings
   - Makes it difficult to compare results for studies in which earnings are observed for different lengths of time

HOW DID I ADDRESS THESE LIMITATIONS?

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SAMPLE

- 1.1 million first-time CA community college students
  - Entered the CCC system between Fall 2002 and Summer 2008
  - Between 18 and 50 years old at college entry
  - Reported valid SSN
  - At least one UI earnings record before and after entering college
  - Observed postsecondary participation/outcomes through Fall 2013
- Two-thirds nonwhite (half are historically disadvantaged)
- Sample is sufficiently large for precise estimates of returns to credentials in less common fields of study
  - Minimum cell size of 100, instead of 10, when estimating returns to credentials by program of study

EARNINGS

- Observed earnings for 8-14 years, including 2.5 years before beginning college
  - 30,877,882 non-zero quarterly earnings records
  - Average of 28 quarterly earnings records per student

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RATE OF CHANGE IN EARNINGS

- Modeled the effect of credentials on the rate of change in students' earnings, and allowed for variation in rate over time
  - I am supposing that the observed return to a credential depends on *when* you look.
- Contrast this with the more common approach that imposes a simple time-invariant effect of credentials
  - Earnings are assumed to grow at the same rate, one quarter after the award was received, five years later, etc.

DO THE RETURNS TO CREDENTIALS VARY OVER TIME?

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EARNINGS GAINS

	Typical Model	Preferred Model			
	Average Quarterly Return	1 Year After Award	3 Years After Award	5 Years After Award	7 Years After Award
Low-Credit Awards	$850	$320	$830	$1,150	$1,300
Short-Term Certificates	$780	$330	$860	$1,230	$1,440
Long-Term Certificates	$1,000	$550	$1,340	$1,710	$1,660
Associate Degrees	$420	$140	$510	$1,020	$1,650

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TAKE-AWAY

- Earnings gains from credentials vary over time.

  What we observe depends on when & how long we look.

  "What are the earnings gains *at a particular point in time*?"

- Returns to associate degrees rise slowly but are more durable than returns to short-term credentials.

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HOW DO STUDENTS OF HISTORICALLY DISADVANTAGED RACIAL/ETHNIC GROUPS FARE?

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MEN

	Quarterly Return 7 Years Post-Award			
	White	African American	Hispanic	Asian
Low-Credit Awards	$1,230	Not Sig	Not Sig	Not Sig
Short-Term Certificates	$3,190	$1,460	$2,350	$1,780
Long-Term Certificates	$2,350	$3,330	$1,480	$1,990
Associate Degrees	$1,580	$2,660	$1,740	Not Sig

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WOMEN

	Quarterly Return 7 Years Post-Award			
	White	African American	Hispanic	Asian
Low-Credit Awards	$1,560	Not Sig	$1,170	Not Sig
Short-Term Certificates	$490	Not Sig	$100	Not Sig
Long-Term Certificates	$860	$1,900	$1,310	$1,490
Associate Degrees	$1,470	$2,340	$1,840	$1,610

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TAKE-AWAY

- For the most part, African American and Hispanic students experience a stronger earnings boost from long-term credentials…

  …than do White and Asian students.

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HOW DO RETURNS FOR MEN AND WOMEN COMPARE?

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GENDER COMPARISON

		Quarterly Return 7 Years Post-Award			
		White	African American	Hispanic	Asian
Low-Credit Awards	Female	$1,560	Not Sig	$1,170	Not Sig
	Male	$1,230	Not Sig	Not Sig	Not Sig
Short-Term Certificates	Female	$490	Not Sig	$100	Not Sig
	Male	$3,190	$1,460	$2,350	$1,780

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GENDER COMPARISON

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	Male	$2,350	$3,330	$1,480	$1,990
Associate Degrees	Female	$1,470	$2,340	$1,840	$1,610
	Male	$1,580	$2,660	$1,740	Not Sig

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TAKE-AWAY

- Men experience a stronger earnings boost from both short- and long-term certificates than do women.
- The earnings gains from associate degrees are about equal.

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HOW DO RETURNS VARY ACROSS THE 24 FIELDS OF STUDY OFFERED IN CALIFORNIA?

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CONSISTENTLY POSITIVE RETURNS

28% of all credentials awarded

	Quarterly Return 7 Years Post-Award			
	LC Award	Short Cert	Long Cert	Assoc Degree
Biological Sciences	----------	$2,980	----------	$3,560
Engineering & Industrial Tech	NS	$1,460	$1,470	$2,450
Health	$1,100	$900	$2,830	$6,400
Law	----------	$830	$1,630	$990
Public & Protective Services	$760	$4,440	$2,770	$2,600

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CONSISTENTLY NEGATIVE OR NOT SIGNIFICANT

14% of all credentials awarded

Quarterly Return 7 Years Post-Award

	LC Award	Short Cert	Long Cert	Assoc Degre
Agriculture & Natural Resources	Not Sig	Not Sig	Not Sig	Not Sig
Media & Communications	----------	Not Sig	Not Sig	-$630
Fine & Applied Arts	----------	-$710	Not Sig	-$650
Family & Consumer Sciences	-$650	Not Sig	Not Sig	Not Sig
Humanities	----------	Not Sig	----------	-$200
Commercial Services	----------	-$550	-$840	Not Sig

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GAINS (OR LOSSES) RELATIVE TO WHO?

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NON-GRADUATING STUDENTS

- It is easy to lose sight of the comparison group…

  …which is non-graduating community college students.

- The boost of $2,450 in quarterly earnings for students who hold an associate's degree in engineering & industrial tech…

  …is relative to the average gain/loss of all students who did not graduate but are otherwise similar.

- However, non-graduating students are far from homogenous in their goals and how they use community colleges.

  Case in point, *skills builder students*.

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WHO ARE SKILLS BUILDERS?

- Highly successful in their coursework / high GPAs
- Take just a few courses, mostly in CTE fields
- Leave community college without a credential or transferring
- Disproportionately older and male

Shameless plug:

I am actively recruiting state partners for a multi-state study of skills builders.

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WHAT IS THE RETURN TO THE HUMAN CAPITAL ACQUIRED IN COMMUNITY COLLEGES?

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RETURNS TO CREDITS (PARSING OUT RETURNS TO CREDENTIALS)

	Quarterly Return		
	3 Credits (vs. 0)	6 Credits (vs. 0)	9 Credits (vs. 0)
Engineering & Industrial Tech	$210	$400	$580
Health	$10	$30	$60
Law	Not Sig	Not Sig	Not Sig
Public & Protective Services	$240	$490	$730
Business & Management	$110	$200	$280
Information Tech	$70	$130	$200

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TAKE-AWAY

- Even in the absence of a completed credential…

  …human capital acquired in coursework in non-credential intensive fields has significant labor market value.

- A postsecondary credential clearly is the preferred outcome…

  …providing stronger earnings gains and educational portability.

- However, non-completion is ***not*** synonymous with failure.

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