# *California's Career Education Programs and Their Long-Term Wage Outcomes*

*A Regional Examination*

PRESENTER:

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BACKGROUND:

Career education programs at California's community colleges provide a critical supply of middle-skilled workers to the state's labor market; not only improving their economic wellbeing, but also addresses employers' workforce needs. Some regions have greater demand for middle-skilled jobs than others which require at least a bachelor's degree, and high job growth does not always mean high earnings evenly across the state. How well do these credentials compare regionally?

METHODOLOGY

Using student-level longitudinal data combining California's community colleges with statewide earnings data and a multiple regression framework, we analyze returns to associate's degrees. We use student fixed effects to compare an individual's earnings before and after earning an award. This study also explores wage returns by region and program area to determine whether these returns differ within these subgroups.

The model for estimating wage returns is:

$$ln(wage_{it}) = \alpha_i + \gamma_t + \beta Enrolled_{it} + \Sigma_k \delta_k Postawardk_{it} + \Sigma_j \varphi_j (Age = j)_{it} + \varepsilon_{it}$$

where:

$i$ = individual; $t$ = year-quarter

$\delta$ = coefficient of interest, measures change in quarter earnings due to credential receipt

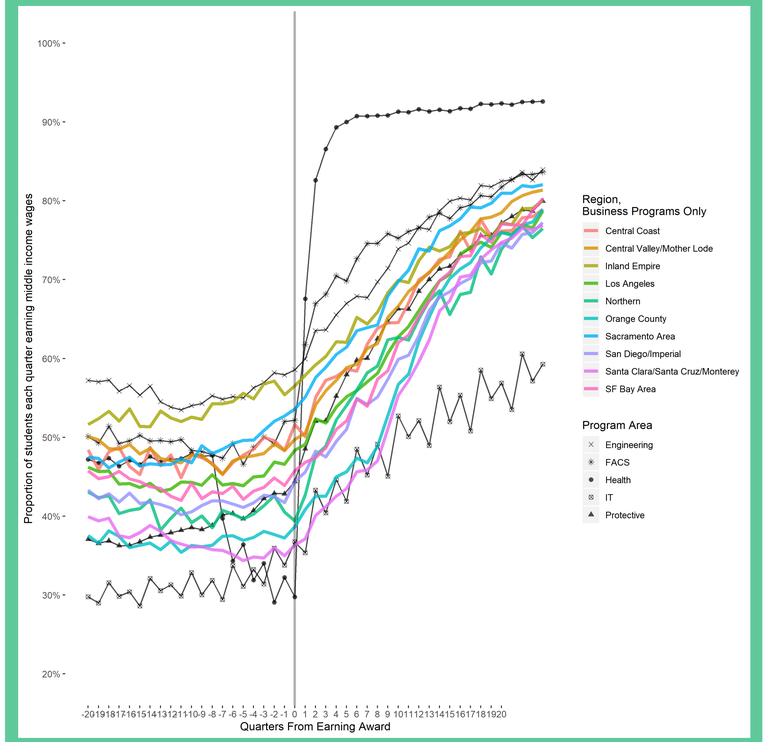
*Postawardk* = indicator variable for every quarter after the student receives a kth credential

$\alpha$ = student-level fixed effects; $\gamma$ = time effects

$\varphi$ = indicator variable for age

*Enrolled* = indicator variable if student enrolled during term $t$, controlling for depressed wages while in school

Wage outcomes vary more within program area than region where student earned their credential, and carry more weight in regions with greater middle skill demand.

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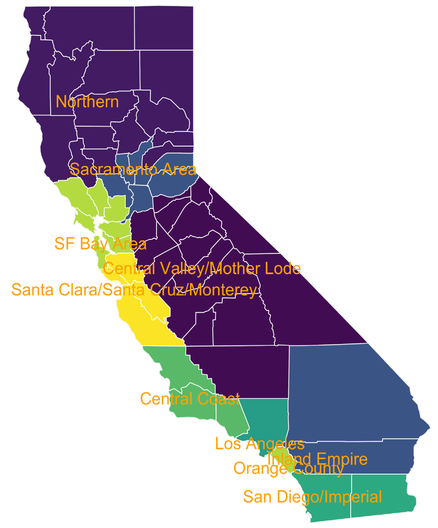
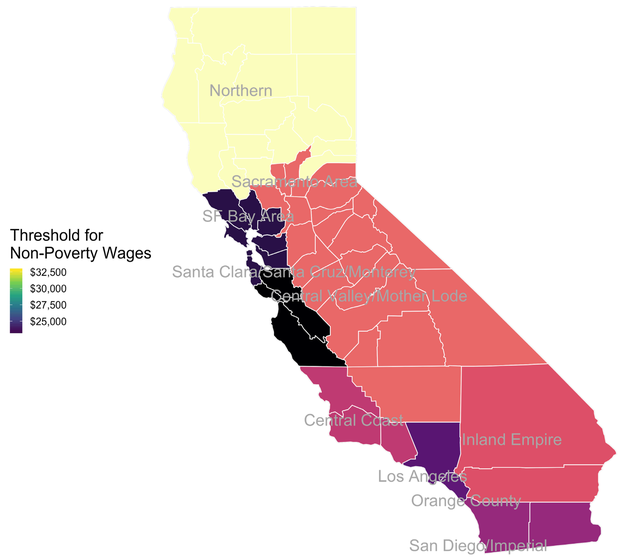
## California's Regions




## Wage Returns, by region and program area

| Region / Program Area | Business | Engineer-ing | Family & Consumer Sciences (FACS) | Health | IT | Protect-ive Services | Average Program in region |
|---|---|---|---|---|---|---|---|
| Northern | 2% | 8% | 9% | **171%** | **10%** | 1% | **47%** |
| Sacramento Area | **7%** | **8%** | **25%** | **142%** | **9%** | **6%** | **39%** |
| San Francisco Bay Area | **5%** | -3% | **15%** | **167%** | **16%** | **6%** | **55%** |
| Santa Clara/Santa Cruz/Monterey | 1% | -1% | 6% | **123%** | **17%** | 1% | **30%** |
| Central Valley/Mother Lode | 1% | 0% | **17%** | **176%** | **13%** | **8%** | **59%** |
| Central Coast | 5% | 4% | 0% | **142%** | **10%** | **11%** | **50%** |
| Los Angeles | 0% | -2% | **17%** | **121%** | **3%** | **4%** | **34%** |
| Inland Empire | 1% | **-8%** | **14%** | **134%** | **9%** | **7%** | **37%** |
| Orange County | 0% | 2% | **9%** | **133%** | **12%** | **13%** | **52%** |
| San Diego/Imperial | 3% | 2% | **5%** | **103%** | **5%** | **8%** | **32%** |
| Average for program area across all regions | **2.1%** | -1.0% | **14.2%** | **137.0%** | **8.9%** | **6.5%** | |

Note: bolded cells indicates significance at the 0.05 level

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