

The Tapestry of Student Success

Weaving Together Disparate Datasets for Holistic Analyses of Post-College Outcomes

David Mahan & Navi Dhaliwal



 TAIR 2024 Annual Conference

March 28, 2024



The Research Institute at Dallas College

Mission



- **Produce** actionable research that informs and supports the postsecondary education needs of the Dallas College community
- **Inform** student-centered decision-making, internally and externally
- **Identify** student barriers to postsecondary success and strive for equitable opportunities and outcomes for all students
- **Collaborate** across the education-to-workforce pipeline to help Dallas College positively impact the Metroplex and to help North Texas reach state attainment goals

Research Agenda Highlights

Impact of Dallas College Dual Credit

(8-Year Longitudinal Outcomes of DFW High School Grads)

Return on Investment & Economic Mobility (with Harvard SDP)

Alumni Survey Pilot (with Strada)

Impact of Student Debt; Debt-to-Earnings

Student Melt & Retention Modeling (with RAND)

Adult Learners

Golden Data Set

Hispanic Student Profile Analysis

Data Literacy Across the Institution

Impact of AI on Research



Our Team



Executive Director

Data Science Analysts

Economic Analyst

Survey Research Analyst

Data Visualization Specialist

Technical Writer

Key Partnerships



Division of Student Success

Strategic Research & Analytics

Labor Market Intelligence Center



Motivating Questions

What qualifies as a “successful” post-college outcome?

What data sources can we use to measure post-college success? What are their pros and cons?

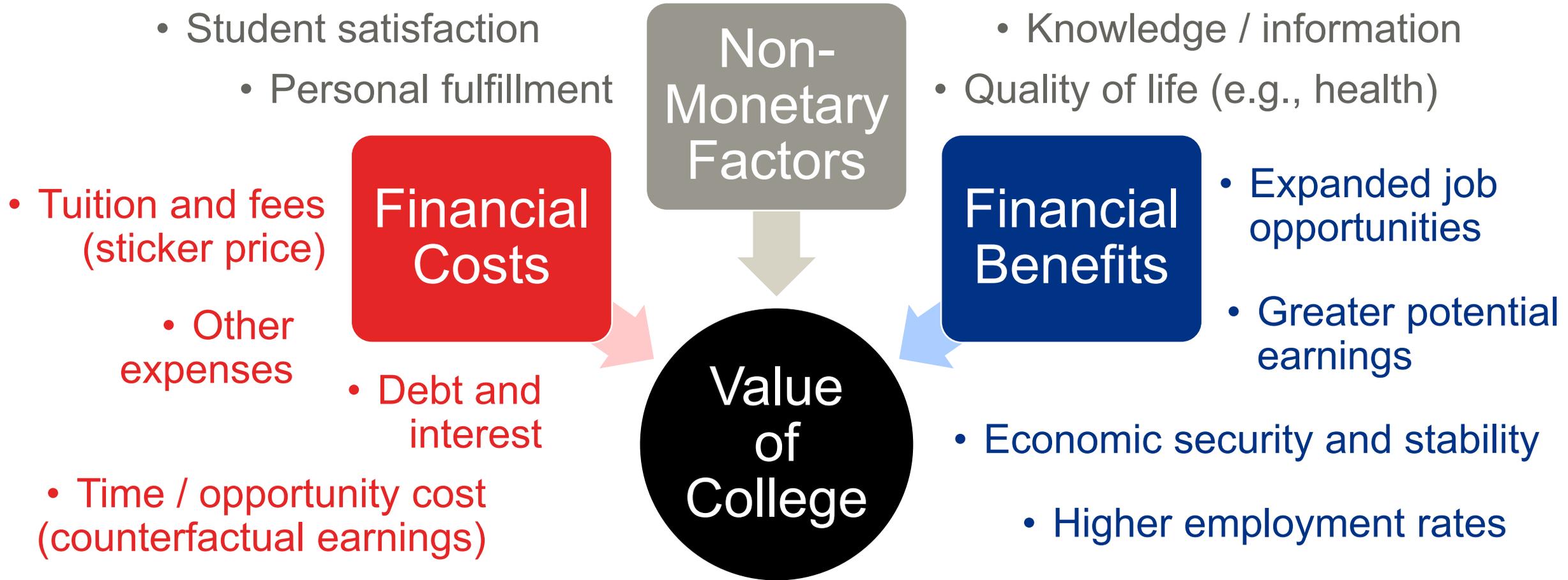
How can we integrate these data sources to enrich our understanding of student outcomes?

Presentation Outline



1. Defining post-college student success
2. Data sources on student outcomes
3. Audience discussion and Q&A

Assessing the Value of College



These factors will vary by individual student, demographics, fields, and institution.





How Do We Define Success?

Educational

- Traditional IPEDS Graduation Rate, Outcomes Measures
- Richmond Fed Success Rate (includes part-time, non-first time, and acknowledges non-credit awards, transfer without awards, and persistence as successes, within 4 years)

Employment and Earnings

- MIT Living Wage: \$43,514 in Texas for 1 adult, 0 children
- Postsecondary Value Commission Economic Value Thresholds
 - **Minimum Economic Return (T0)**: \$41,045 ≈ **THECB Credentials of Value**
 - **Earnings Premium (T1)**: \$44,965 – median earnings for associate holders within Texas
 - **Economic Mobility (T3)**: \$50,309 – 60th percentile earnings in Texas for any credential level
- Building a Talent Strong Texas: manageable debt (to earnings ratio)

Other Outcomes

- Student satisfaction, sentiment



Our Main Focus for Today: Earnings



Educational

- Traditional IPEDS Graduation Rate, Outcomes Measures
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Other Outcomes

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Data Sources on Student Outcomes



- College Scorecard / Treasury
- Post-Secondary Employment Outcomes (PSEO) / Census Bureau
- Texas Workforce Commission (TWC), via...
 - Texas Education Research Center (ERC)
 - Texas Higher Education Coordinating Board (THECB)
- Lightcast
- CollegeAPP / L-2 Data
- Payscale
- Community College Alumni Outcomes Survey / Strada
- First Destinations Survey
- Qualitative Data: interviews and focus groups



Piecing Together Outcomes Data

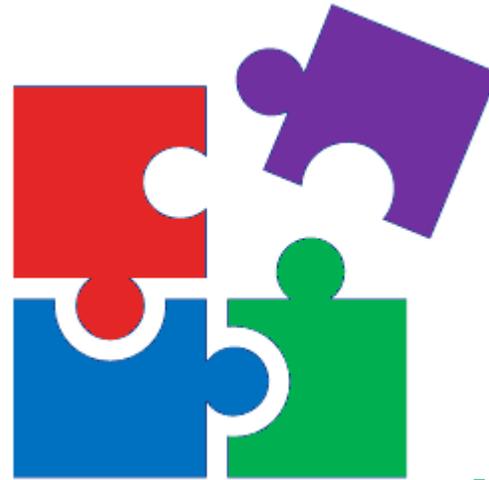


Federal Data

- College Scorecard (Treasury)
- PSEO (Census)

Survey Collections

- Payscale Salary Survey
- Strada Alumni Survey
- First Destination Survey



State Data

- TWC
- THECB

Web Scraping and Estimation

- Lightcast
- CollegeAPP / L-2 Data

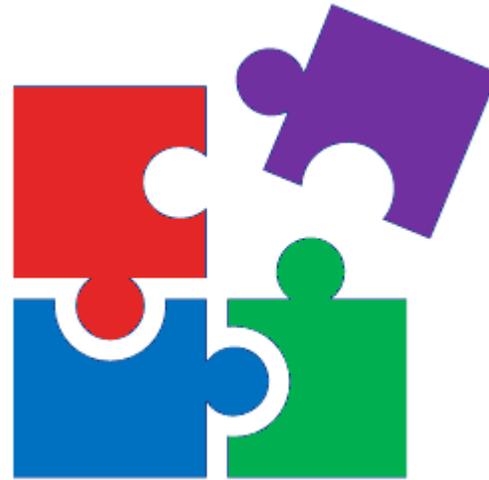


Piecing Together Outcomes Data



Federal Data

- College Scorecard (Treasury)
- PSEO (Census)



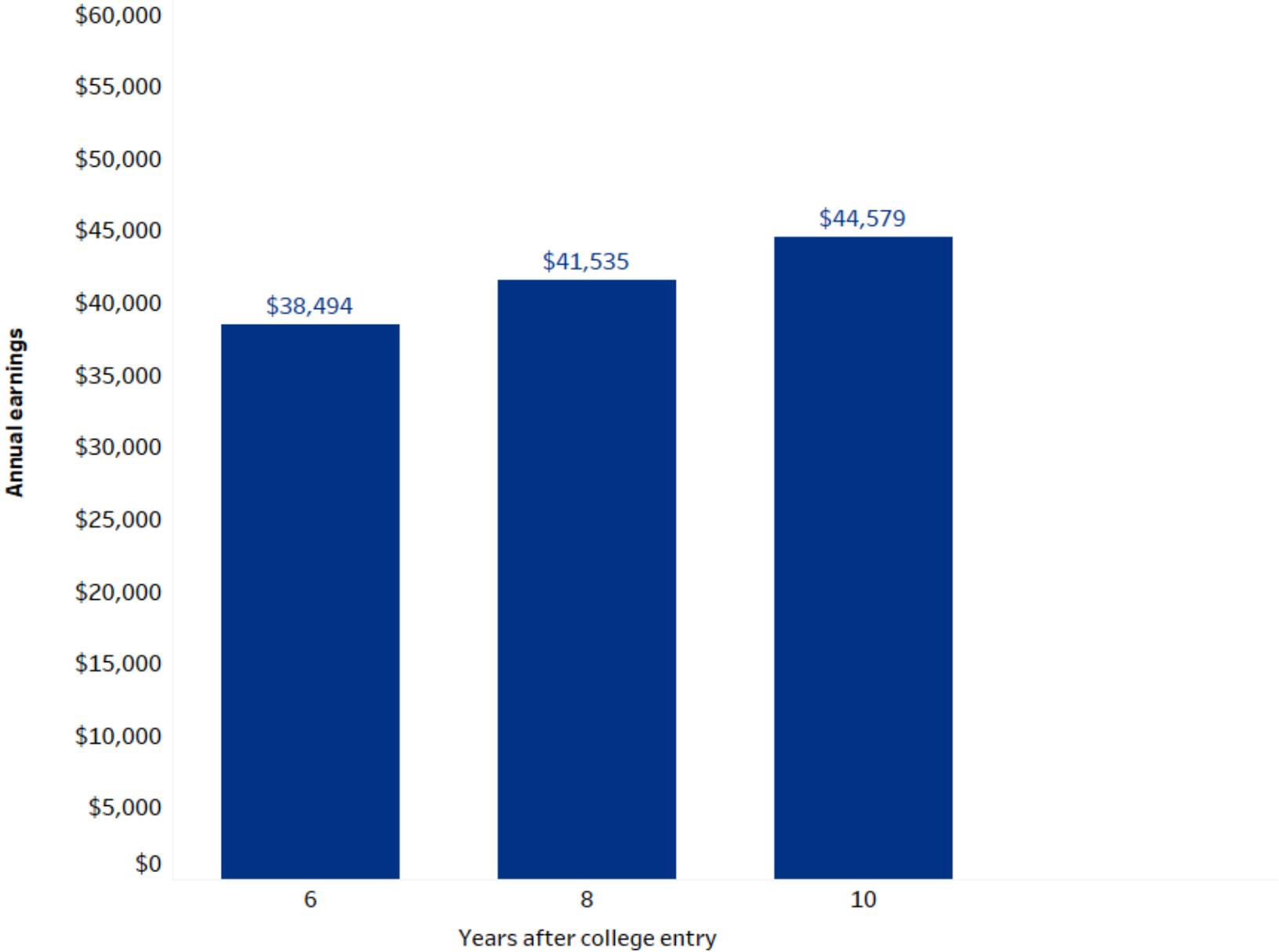
College Scorecard / Treasury



College Scorecard Data only include Title IV financial aid recipients.

- **Median earnings by institution** (measured in 2019 and 2020)
 - 6, 8, and 10 years after college entry (mix of completers and non-completers)
 - Entry cohorts: 08-09 & 09-10, 10-11 & 11-12, 12-13 & 13-14
 - Available overall, by gender, income level (high, middle, low), and independent status
 - 25th percentile and 75th percentile also available
 - 1 and 4 years after college completion
 - Exit cohorts: 14-15 & 15-16, 17-18 & 18-19
- **Median earnings by field of study** (measured in 2019 and 2020)
 - By 4-digit CIP code (Classification of Instructional Programs)
 - 1 and 4 years after college completion
 - Exit cohorts: 14-15 & 15-16, 17-18 & 18-19

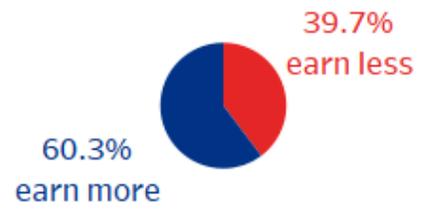




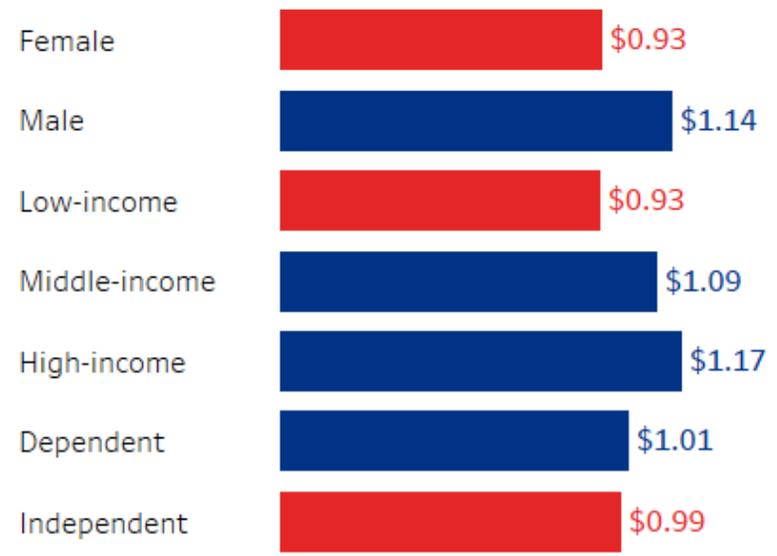
Ten years after enrolling, half of students earn between...



Relative to workers with only a high school diploma...



For each \$1 earned by all students, these groups earn...



Credential Level	Classification of Instructional Programs (4-Digit CIP Code)	← Median debt	Median earnings (one year after completing) →
Associate Degree	Accounting and Related Services (52.03)	\$18,453	\$37,865
	Agricultural and Domestic Animal Services (01.05)	\$12,958	\$24,735
	Agricultural Business and Management (01.01)	\$11,870	\$38,324
	Agricultural Mechanization (01.02)	\$13,498	\$60,253
	Agricultural Production Operations (01.03)	\$12,173	\$34,787
	Agriculture, General (01.00)	\$7,829	\$36,527
	Air Transportation (49.01)	\$17,504	\$54,095
	Allied Health and Medical Assisting Services (51.08)	\$18,746	\$38,598
	Allied Health Diagnostic, Intervention, and Treatment Professions (51.09)	\$17,555	\$54,124



Post-Secondary Employment Outcomes



PSEO Data only cover graduates with 3+ quarters of earnings / year.

- **Median earnings by institution, field** (measured through 2020)
 - 1, 5, and 10 years after college completion
 - Exit cohorts: 01-05, 06-10, and 11-15
 - Data provided overall, by 2-digit CIP code, and 4-digit CIP code
 - 25th and 75th percentile also available
- **Also included: flows of students into industries and states**
- **Underlying data source:** Census's Longitudinal Employer-Household Dynamics (LEHD) Program – covers about 96% of U.S. employment.



Data Type

Earnings
 Flows

State

Texas

Institution

Dallas College

Degree Level

Associates

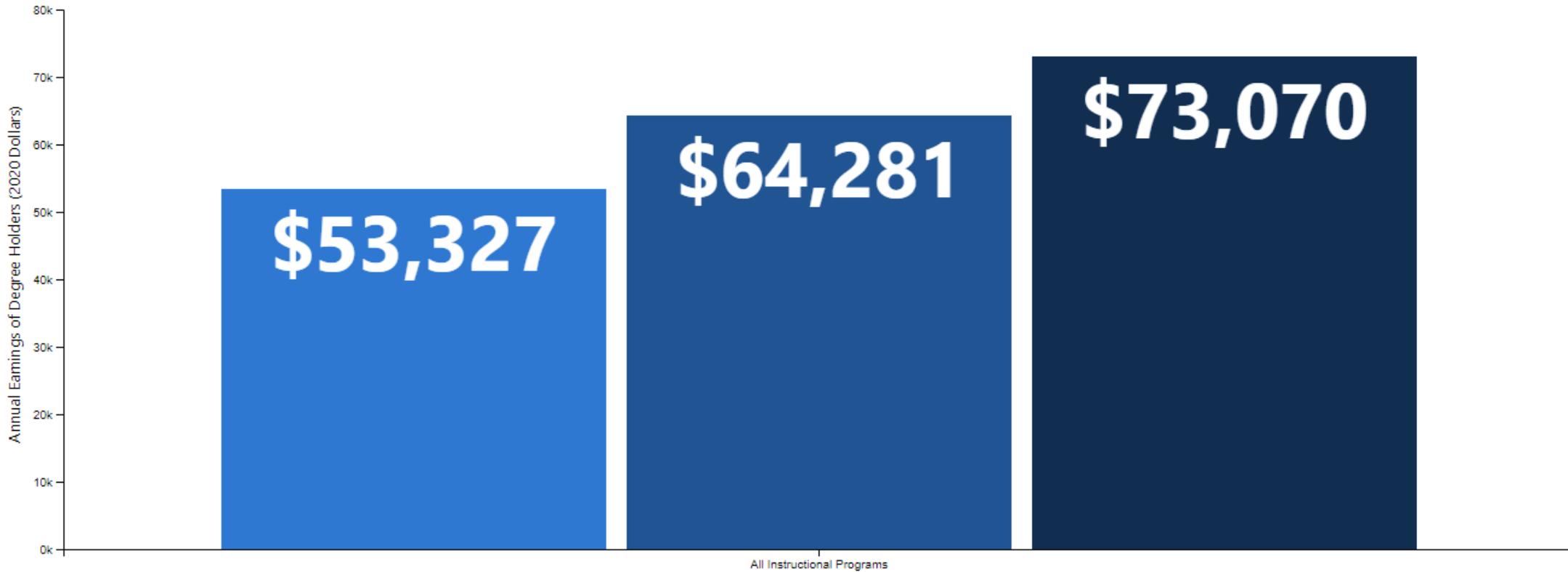
Graduation Cohort

All Cohorts

Search...

2001-2005
 2006-2010
 2011-2015
 All Cohorts

5 Years Postgrad
 10 Years Postgrad



Program Specificity

General
 Detailed

Sort Program List by

Size
 Name

Filter Degrees...

All Instructional Programs	Registered Nursing, Nursing Administration,...	Liberal Arts and Sciences, General Studies ...	Allied Health Diagnostic, Intervention, and T...	Legal Support Services
Culinary Arts and Related Services	Design and Applied Arts	Business Administration, Management and ...	Clinical/Medical Laboratory Science/Resear...	Accounting and Related Services
Teacher Education and Professional Develo...	Computer Systems Networking and Teleco...	Data Processing	Biology/Biotechnology Technologies/Techni...	Health and Medical Administrative Services

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Data Type

Earnings
 Flows

State

Texas ▾

Institution

Dallas College ▾

Degree Level

Associates ▾

Graduation Cohort

All Cohorts ▾

Destination Flows

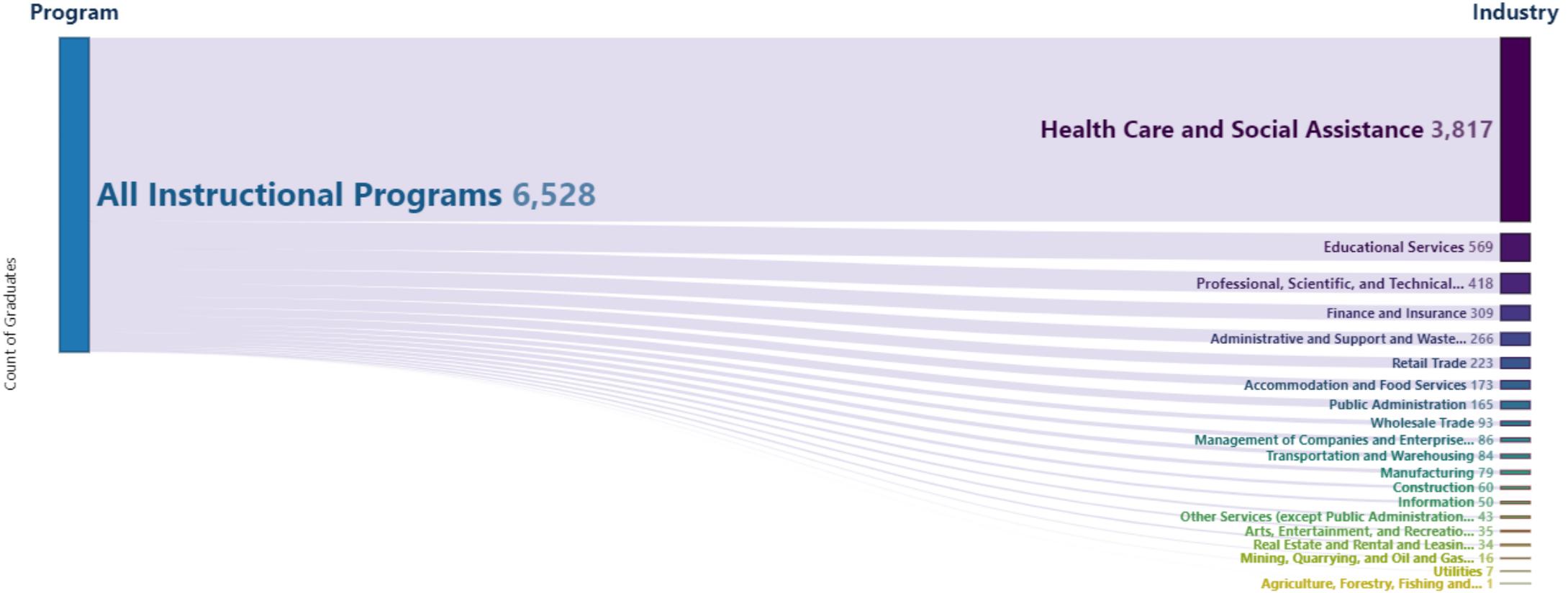
Industry
 Geo

Years-postgrad Filter

1
 5
 10

Display

Count
 Share



Program Specificity

General
 Detailed

Sort Program List by

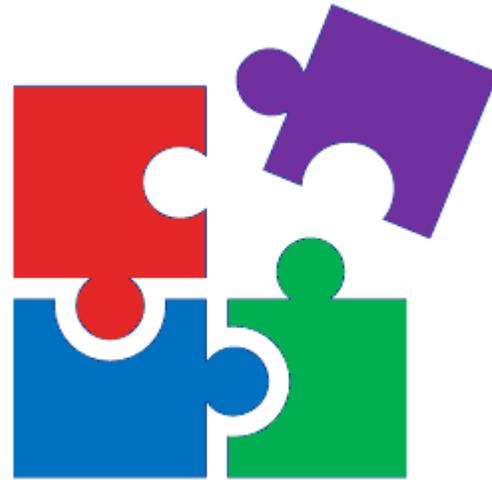
Size
 Name

All Instructional Programs	Health Professions and Related Programs	Liberal Arts and Sciences, General Studies ...	Legal Professions and Studies	Culinary, Entertainment, and Personal Servi...
Business, Management, Marketing, and Rel...	Visual and Performing Arts	Homeland Security, Law Enforcement, Firef...	Family and Consumer Sciences/Human Sci...	Education
Computer and Information Sciences and Su...				

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Piecing Together Outcomes Data



State Data

- TWC
- THECB



Texas Workforce Commission (TWC)



- **Individual quarterly wage data records matched to student ID**
 - Dallas College made a list of SSNs for TWC; TWC sent back ~1.4 million rows of wage data
 - List included credential completers from 2015 on, with wages returned from 2011-2021
 - Data include person ID and wages by quarter by employer
 - Employer details include ID, NAICS industry code, address, and telephone #
 - Update cadence and restrictions on use of this data are uncertain / pending; we were instructed not to publish data or use it for analysis.



State Data: TWC / Texas CREWS



School Profile - General Info - 2021



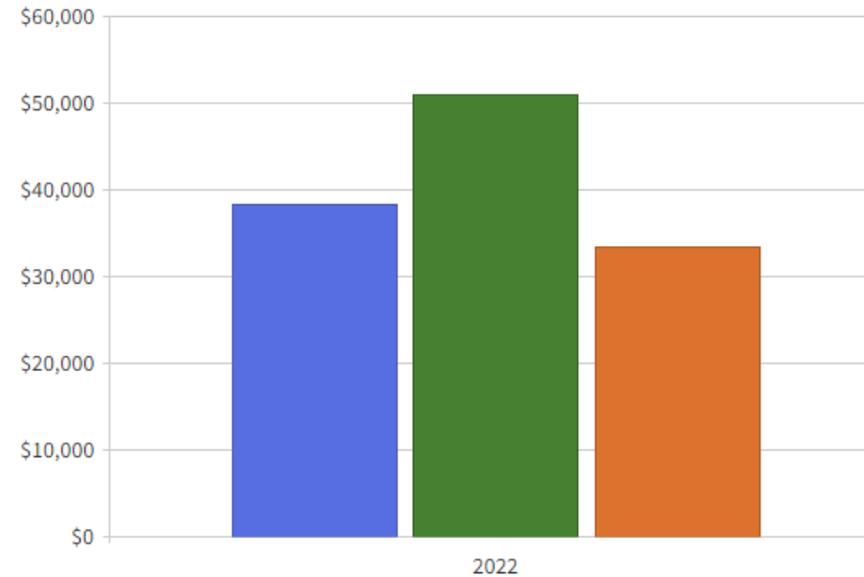
Type of Institution	2-Year Community College
Location	Dallas, TX
Average Tuition (Undergrad)	\$2,370 / year
Average Time to Degree (Undergrad)	3.74 years
SAT 25th - 75th Percentile Scores	Not applicable
Total Fall Enrollment	61,925
Graduation Rate*	30.3%
Percent of Graduates with Loans	25%
Average Loan Amount at Graduation	\$17,908
Median First Year Wages**	\$36,057
Loan as % of First Year Wages	31%
Texas Unemployment Rate	3.9%

Median First Year Wages by Degree Level - 2021 Graduates



Major: All Majors

Occupational Skills Award Certificate Associate Degree

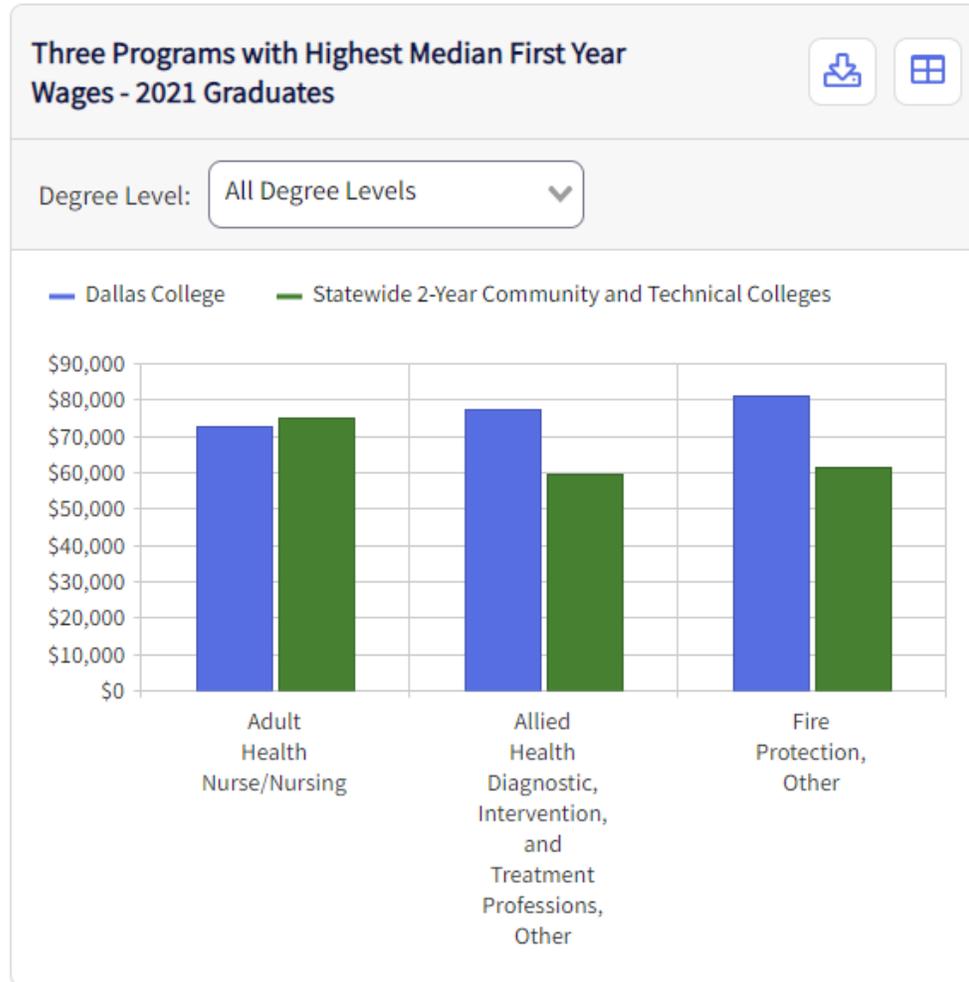


* Graduating within 6 years at 4-year school or 4 years at 2-year school.

** Graduates may or may not work within their field of study.



State Data: TWC / Texas CREWS



State Data: TWC / Texas CREWS



Majors	# of Grads	% of Grads with Loans	Avg Loan Amount at Graduation	% Found with Wages	2022 Median Wages	Loan as % of Year 1 Wages
Academic Associate	6,785	25%	\$17,617	66%	\$29,962	33%
Accounting and Related Services, Other	209	28%	\$18,654	76%	\$44,211	34%
Administrative Assistant and Secretarial Science, General	35	17%	\$17,495	80%	\$43,312	28%
Adult Health Nurse/Nursing	187	43%	\$22,415	91%	\$72,795	21%
Allied Health and Medical Assisting Services, Other	38	21%	\$14,842	76%	\$34,501	28%
Allied Health Diagnostic, Intervention, and Treatment Professions, Other	206	32%	\$17,588	94%	\$77,388	18%
Apparel and Textiles, General	5	No data	No data	No data	No data	No data
Auctioneering	18	No data	No data	72%	\$44,980	No data
Audiovisual Communications Technologies/Technicians, Other	14	50%	\$24,779	71%	\$28,092	43%
Business Administration and Management, General	552	25%	\$20,168	77%	\$47,380	37%



- **Underlying source of wage data is typically the TWC**
- **Some data can be provided by THECB ad hoc via data request**
- **Numerous existing and forthcoming resources**
 - Tri-Agency Initiative (assessing current structures like ERC's and TPEIR)
 - HB8 – received relevant PDF reports last year, data portal announced
 - Texas Insights Accelerator – LMI and POET dashboards in development
 - Texas Public Education Information Resource (TPEIR)
 - Texas CREWS (Consumer Resource for Education and Workforce Statistics)



THECB Credentials of Value Reports



Credential of Value (Associate)

Dallas College District

Students meet this threshold if they earn at least as much as a high school graduate plus enough to recoup their total net price within ten years (median Texas high school earnings + total net price amortized over 10 years). Statewide comparisons are calculated at the Associate degree level for all community colleges.

Population Characteristics

Graduates: The completer population that was used for this metric includes **4,795** graduates from this institution who received an Associate degree in AY 2008 through AY 2010.

Gender	Institution	State	Race/Ethnicity	Institution	State	Pell Recipient	Institution	State
Female	58%	62%	African American	16.9%	9.2%	No	61%	48%
Male	42%	38%	Asian	8.2%	3.5%	Yes	39%	52%
			Hispanic	26.3%	33.8%			
			International	9.3%	2.6%			
			Other	3.5%	3.2%			
			White	35.8%	47.7%			

Found Working: **2,458** students (51%) of these graduates were found earning wages in Texas 10 years after they received their degree. Among all Texas community colleges, 52% of Associate graduates were found earning wages.

Gender	Institution	State	Race/Ethnicity	Institution	State	Pell Recipient	Institution	State
Female	57%	59%	African American	18.6%	9.0%	No	58%	46%
Male	43%	41%	Asian	7.2%	3.1%	Yes	42%	54%
			Hispanic	25.3%	31.8%			
			International	3.2%	0.7%			
			Other	3.7%	3.2%			
			White	42.1%	52.0%			

Passing Threshold: **2,081** graduates (85%) of the graduates with wages passed the threshold within 10 years after graduation. Among all Texas community colleges, 81% of Associate graduates with wages passed the threshold.

Population Breakdown			% Passing Threshold		
Gender	Institution	State	Gender	Institution	State
Female	57%	56%	Female	83.7%	77.6%
Male	43%	44%	Male	85.9%	86.7%

Population Breakdown			% Passing Threshold		
Race/Ethnicity	Institution	State	Race/Ethnicity	Institution	State
African American	18.6%	9.0%	African American	84.5%	81.0%
Asian	7.3%	3.2%	Asian	85.3%	82.1%
Hispanic	25.6%	30.6%	Hispanic	85.8%	78.4%
International	2.7%	0.7%	International	71.8%	77.4%
Other	3.4%	3.2%	Other	77.8%	80.9%
White	42.5%	53.3%	White	85.5%	83.3%

Population Breakdown			% Passing Threshold		
Pell Recipient	Institution	State	Pell Recipient	Institution	State
No	59%	48%	No	85.7%	83.6%
Yes	41%	52%	Yes	83.3%	79.4%

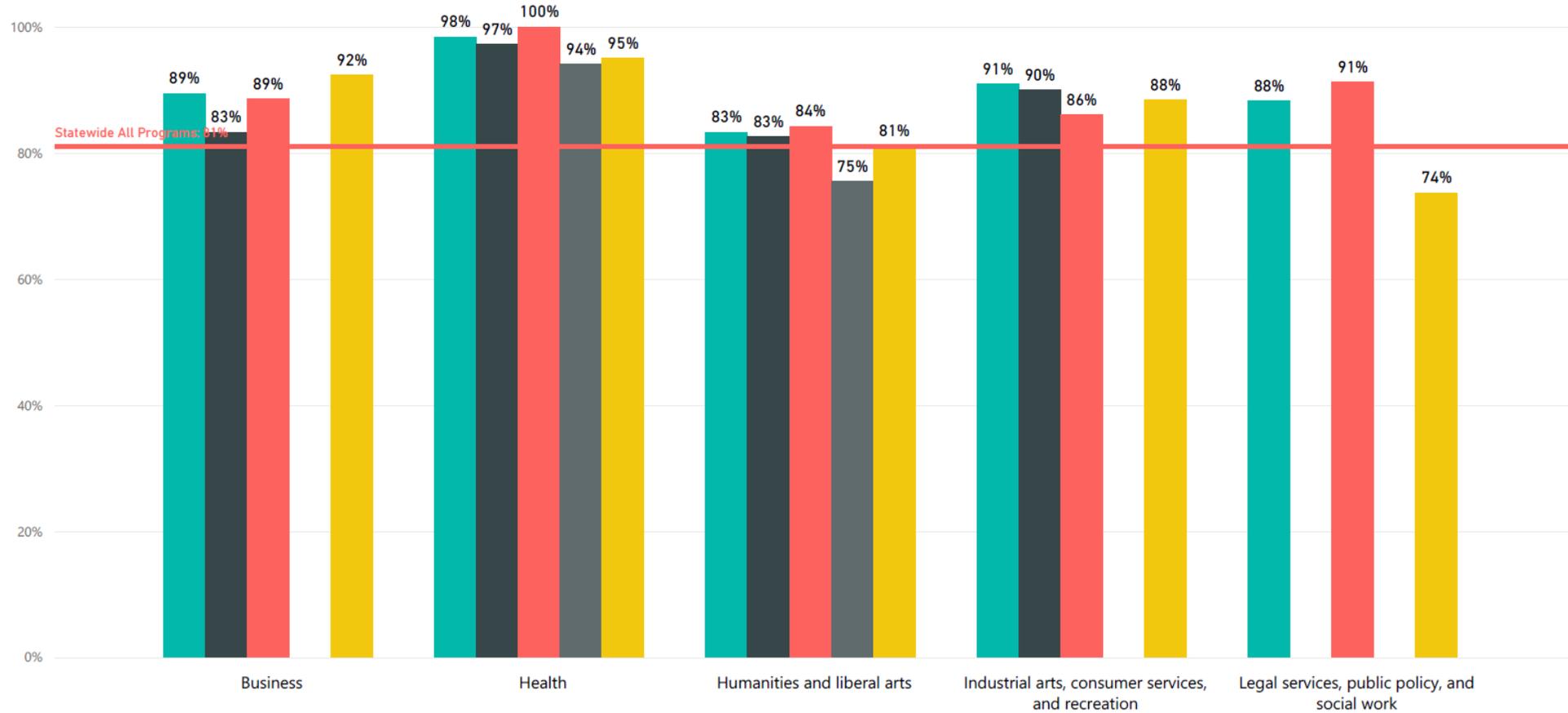


THECB Credentials of Value Reports



% Passing Minimum Value Threshold by Area of Study and Race/Ethnicity - Top 5 Areas by Number of Graduates

Race/Ethnicity ● African American ● Asian ● Hispanic ● Other ● White



Note: Missing bars indicate cell values less than 5.

Credential of Value - Associate
Dallas College District



TX Education Research Center (ERC)



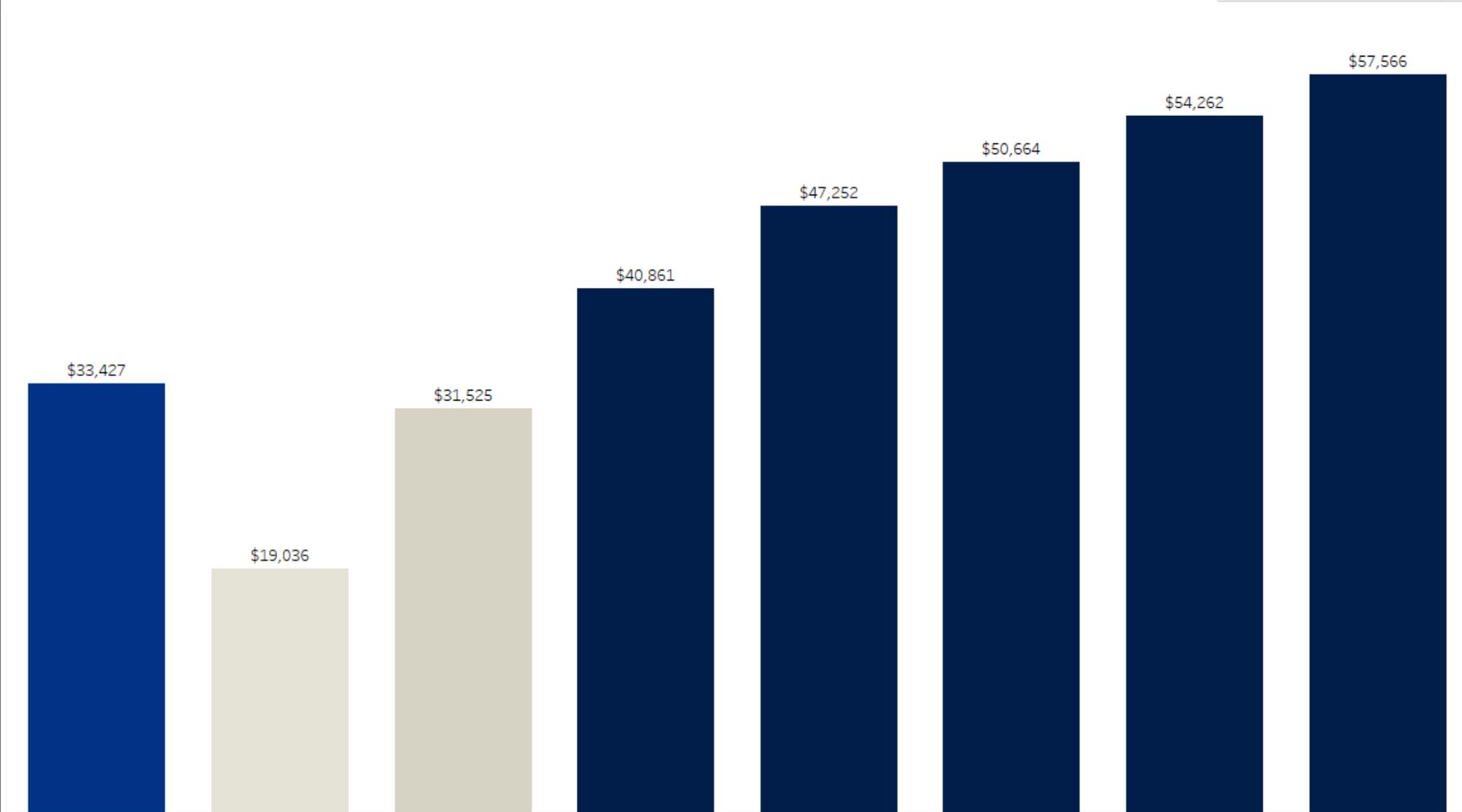
- **ERCs house longitudinal data with linked individual records**
 - Centers are located at UT Dallas, UT Austin, and University of Houston.
 - Data are linked from PK-12 (TEA) > Higher Ed (THECB) > Workforce (TWC).
 - Many school characteristics including free/reduced lunch status, LEP, etc.
 - Some NSC and FADS (financial aid) data are also included.
 - Access is granted on a project basis for approved research projects.
 - The Research Institute is currently working with UT Dallas studying dual credit.
- **The underlying source of wage data is TWC**
 - Quarterly wages
 - NAICS industry codes (though may not be the most reliable)
 - Latest data are through Q2 2021



Median Earnings of Dallas College Graduates Employed in Texas: Before, During, and After College

Display Earnings

Annual



Year Before College

Enrollment Year

Graduation Year

Year After College

2 Years After College

3 Years After College

4 Years After College

5 Years After College



Median Earnings by Credential and Program

Group Programs By

Dallas College Schools Of / Catalog

Time Horizon

Year After College

↓ Hover over column headers and use +/- buttons to expand or reduce scope. ↓

Dallas College School Of	Credential Type	Detailed Credential Type	Program Title	Median Earnings 1 Year After College
General Studies / Other	Associate Degree	Associate of Arts	Associate of Arts	\$36,685
		Associate of Science	Associate of Science	\$34,638
School of Business, Hospitality, and Global Trade	Associate Degree	Associate of Applied Science	Accounting	\$48,557
			BOSS - Executive Assistant	\$38,498
			Business Administration	\$47,470
			FHI - Bakery/Pastry	\$34,509
			FHI - Culinary Arts	\$37,639
			Management	\$58,136
			Marketing Careers - Fashion Marketing	\$30,384
			Associate of Science	AS - FOS in Business
	Certificate	Certificate 1	Accounting Assistant	\$44,308
		Accounting Clerk	\$41,958	
		BOSS - Office Assistant		

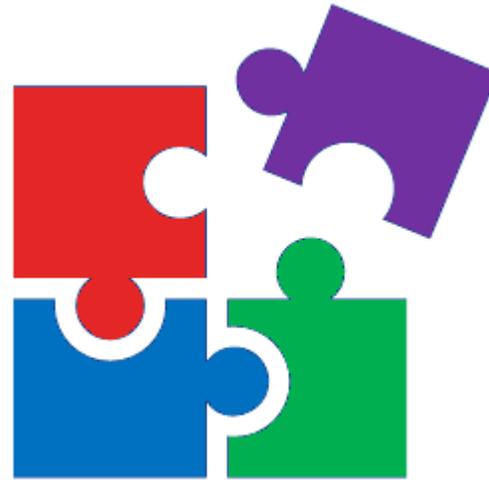


Piecing Together Outcomes Data



Survey Collections

- Payscale Salary Survey
- Strada Alumni Survey
- First Destination Survey



Payscale College Salary Report



Payscale Salary Survey Methodology



— COLLEGE SALARY REPORT — Updated for 2023

Best Community Colleges & 2-Year Degree Programs by Salary Potential

PayScale has ranked hundreds of two-year colleges by how much their alumni go on to earn. Find out which schools produce the highest-paid graduates.

Dallas College

Rank ▲	School Name ↕	School Sector	Early Career Pay ⓘ ↕	Mid-Career Pay ⓘ ↕	% High Meaning ⓘ ↕	% STEM Degrees ⓘ ↕
190	 Dallas College	Public	\$55,400	\$78,600	57%	5%

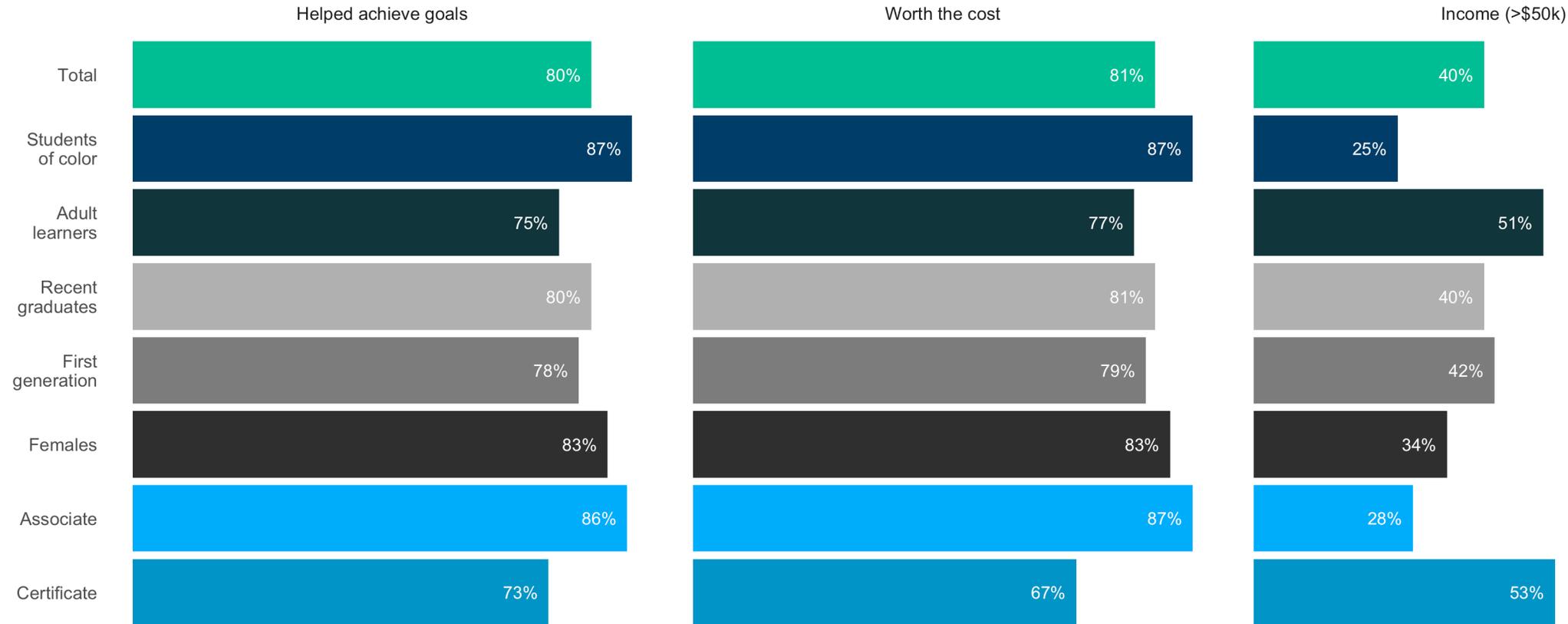
Early Career Pay = median salary for alumni with 0-5 years of experience

Mid-Career Pay = median salary for alumni with 10+ years of experience

% High Meaning = share of alumni who say their work makes the world a better place



Strada Alumni Outcomes Survey



[Strada National Findings](#)

[Dallas College Dashboard](#)

Dallas College participated in a pilot survey in Fall 2022. Alumni were invited to complete a 15-minute online survey. Respondents included 1,810 former Dallas College students who completed 12+ credit hours in the past 20 years (2002-2022). Of these, 1,553 responses were from 2012-2022.





NACE First Destination Survey

First Destination Survey Standard Questions

What are you primarily doing after graduation?

1. Working
2. Volunteering
3. Continuing Education
4. Military
5. Fellowship
6. Still Looking
7. Not Seeking



Working

1. How many hours per week are you working?
 - Over 30 Hours a week (Full Time)
 - Under 30 Hours a week (Part Time)
2. Type of employment
 - Organization/Company
 - Entrepreneur
 - Freelancer
 - Fellowship
 - Temporary/Contract Work Assignment
 - Faculty Tenure
 - Faculty Non-Tenure
3. What is your job?
 - Who is your employer?
 - What industry is your employer in?
 - What city is this position located in?
4. Tell us about your job?
 - What is your position?
 - Were you already working in this position during school?
 - Yes or No
 - Is this an internship?
 - Yes or No
 - Did you get this job through Handshake?
 - Yes or No
 - What is your job function?
5. How are you compensated?
 - Base Salary
 - Monthly Stipend
 - Hourly Wage
 - Annual Salary
 - Signing Bonus (not required)
 - Other guaranteed compensation (not required)
 - When did you get this offer?
 - yyyy-mm-dd
 - When did you accept it?
 - yyyy-mm-dd
 - When is your start date?
 - yyyy-mm-dd

Most immediate after-college outcomes data

Pilot: December 7, 2023 - May 9, 2024

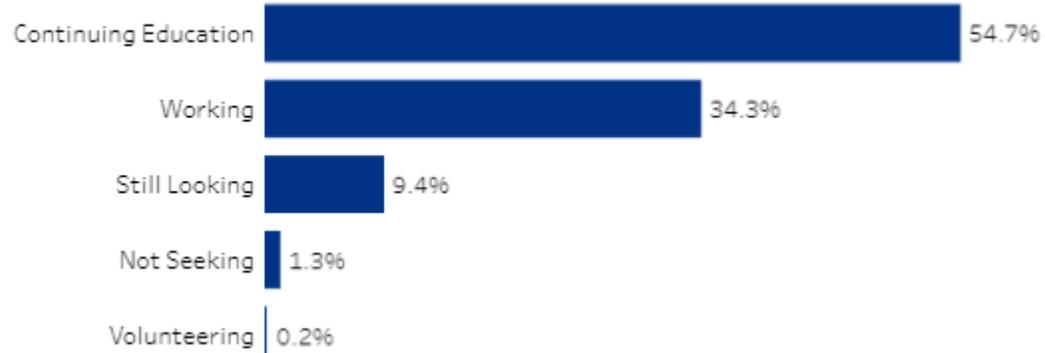
466 responses out of 3,823 recipients (12.7%)



First Destination Survey



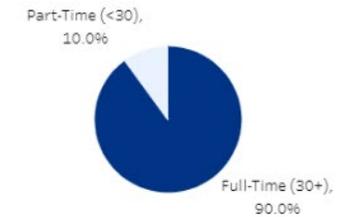
What are you primarily doing after graduation?



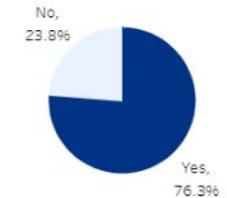
How are you compensated?



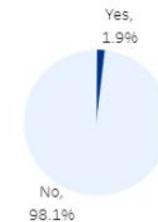
How many hours per week are you working?



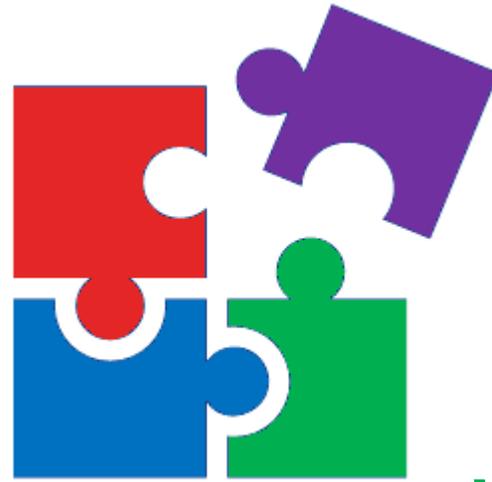
Were you already working in this position during school?



Did you get this job through Handshake?



Piecing Together Outcomes Data



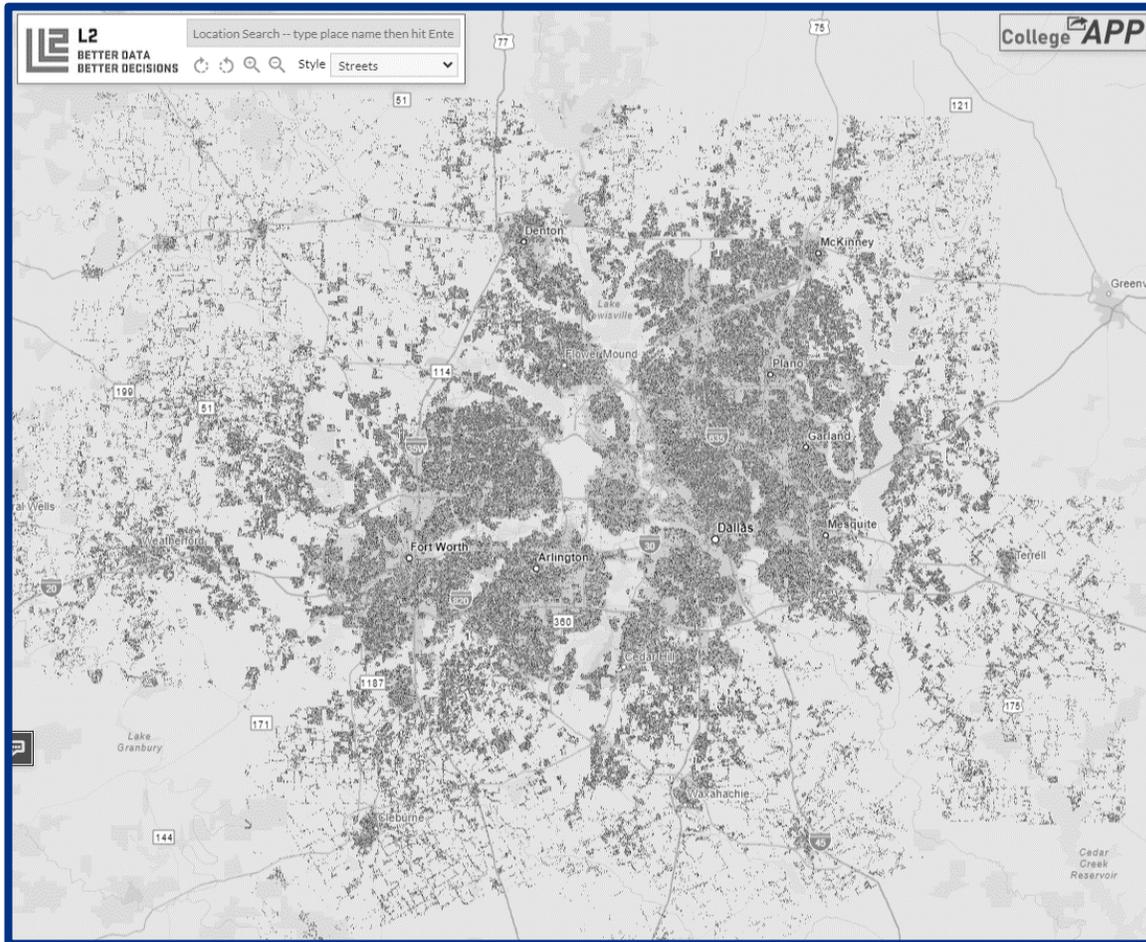
Web Scraping and Estimation

- Lightcast
- CollegeAPP / L-2 Data



CollegeAPP / L-2 Data

CollegeAPP



Consumer and voter database with unique data elements for alumni, but low precision and many unknowns

Data Element	Dallas College Alumni	High School Diploma or Less
N in Dallas County	35,410	340,932
Positive Net Worth	88%	42%
Household Income	\$74K	\$27K
Home Value	\$339K	\$244K
Registered to Vote	81%	41%
Charitable Donors	28%	21%
Credit Score	650	618
Hold Investments	19%	12%

~45K alumni matched in DFW

Note: Values are estimates with some elements modeled by L-2.



Lightcast



- **Alumni data were scraped from online profiles (e.g., LinkedIn).**
 - 2021 wages are estimated by the job title and county of each matched person
 - ~19K clean records, ~7K from 2015-2020, all with student ID as a primary key
 - Around 20% match rate for alumni in Alumni Pathways database
 - Students found in Lightcast web-scraping have ~15% higher TWC wages
- **Lightcast wage estimates by occupation (at the median and the 10th percentile / entry level) are also used in Dallas College tools.**
 - Career Coach
 - Program Inventory – internal Dallas College tool



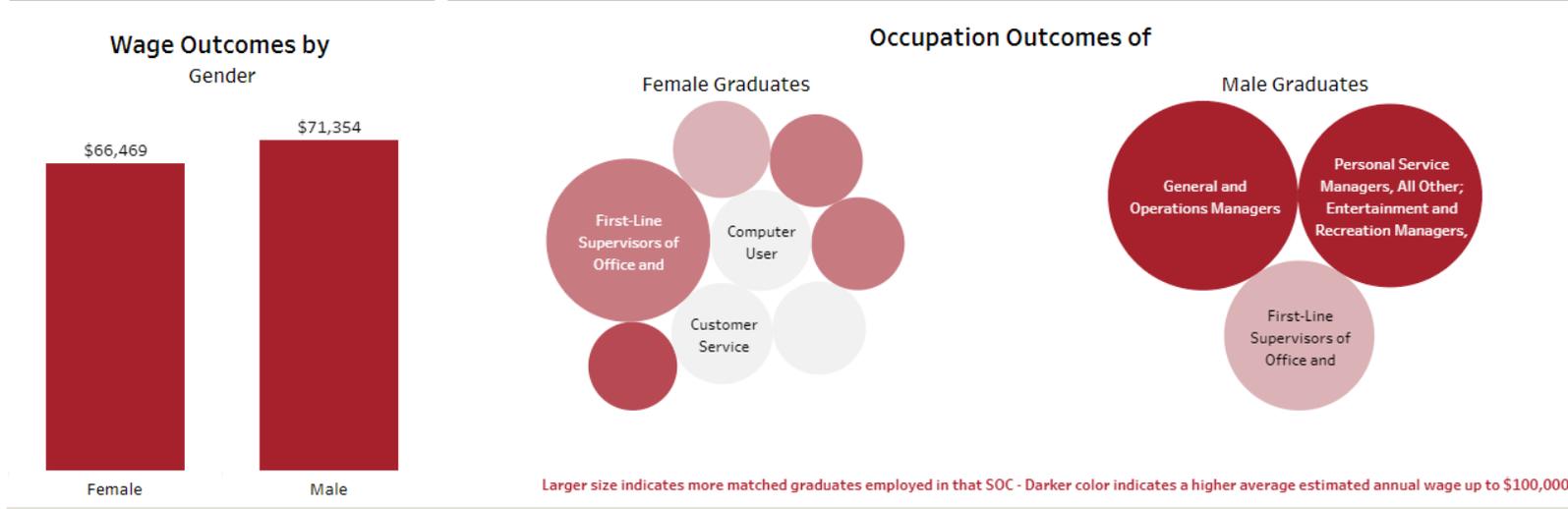
Program: Business Administration and Management (N = 516)

Wage Gaps by Demographic Group



Job placement and associated wages by demographic measure

Demographic Group: View occupation outcomes as:

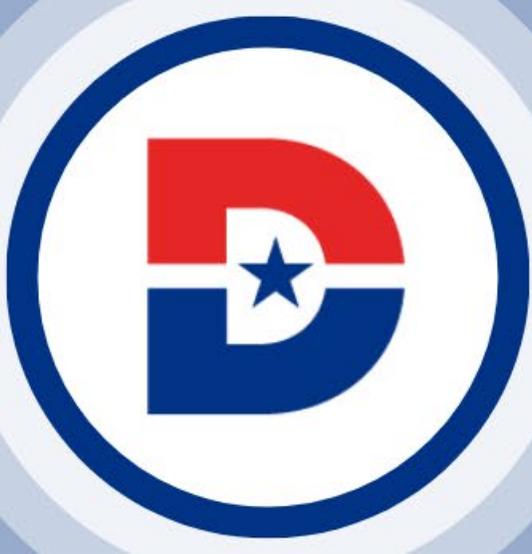




Summary and Reflections

- There is no single criteria for post-college success.
- Some groups aren't captured well in outcomes data (e.g., continuing education, transfers, non-completers, microcredentials).
- The most accurate earnings data are subject to around a 2-3 year lag.
- Aside from survey data, most data sources only focus on credential attainment and earnings.
- Our approach: all-of-the-above / kitchen-sink with criteria, data, tools...





The Tapestry of Student Success

Weaving Together Disparate Datasets for Holistic Analyses of Post-College Outcomes

David Mahan & Navi Dhaliwal

Contact: researchinstitute@dallascollege.edu



Website, Dashboards, & Mailing List

