CCRC COMMUNITY COLLEGE RESEARCH CENTER

TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Mapping Postsecondary Pathways To More Equitable Student Success In a Robot Economy

Dr Davis Jenkins
CCRC

Dr. Ed Massey
Indian River State College

Florida Pathways Institute II – Mapping Pathways to Student Success
February 10, 2021

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CCRC research points to these practices as essential to achieving more equitable student success.

***High-opportunity programs*:** Backward design programs to ensure they prepare students to secure a good job and/or transfer with no excess credits in student's field of interest

***Academic and career and planning*:** Help every student explore academic and career options and interests and develop a full educational plan by the end of term 1

***Academic-career communities*:** Help all students connect with faculty, advisors, students, alumni, employers, others in a field of interest from the start

Active and experiential teaching & learning: Ensure every student has "light the fire" learning experience starting in term 1 and opportunities for active and experiential learning throughout

Lessons on program mapping from early GP adopters

1) Main objectives: a) ensure alignment of program pathways with good jobs and major transfer outcomes; b) give students and advisors guides to develop individualized education plans; c) facilitate cross-silo collaboration to build academic and career communities

2) Mapping best done by cross-functional teams by metamajor—involve faculty, advisors, others from across divisions, credit and non-credit

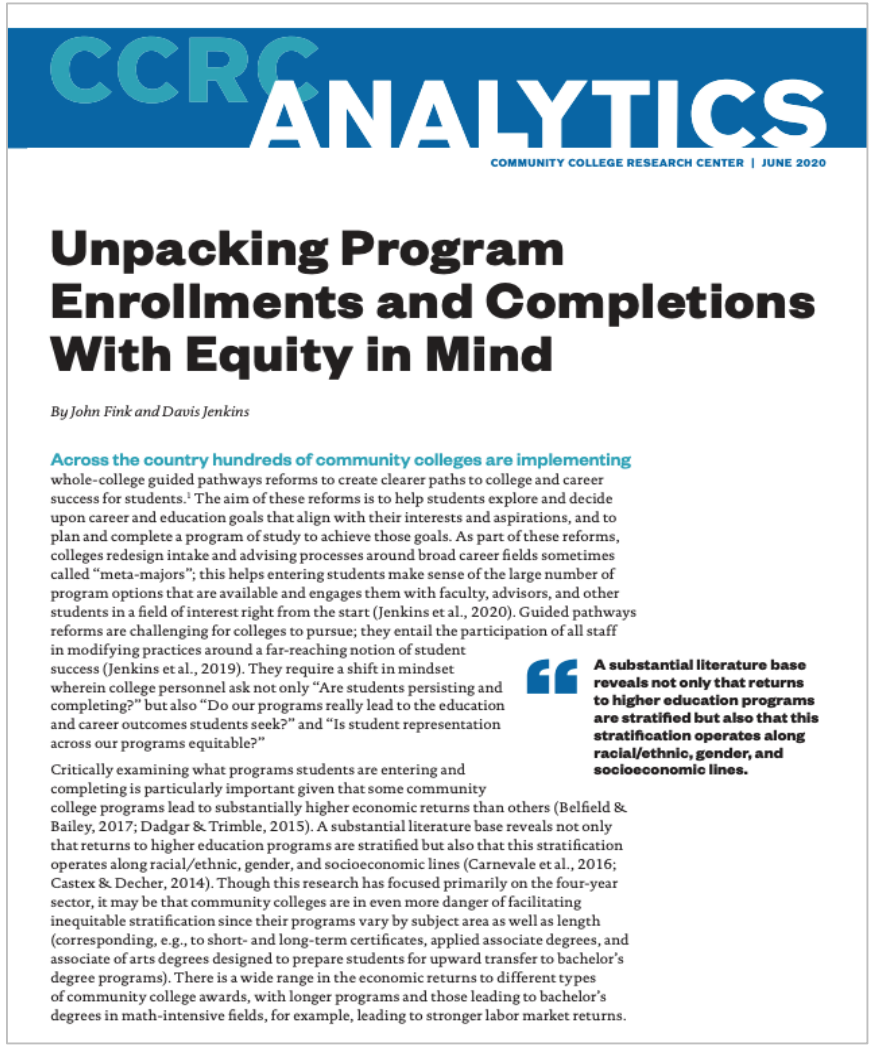
3) Solicit regular feedback on maps (and student outcomes) from university and employer partners by metamajor

4) Mapping of program on-ramps is critical – and don't forget to map program pathways from high school and adult non-credit by metamajor

5) Avoid the "mapping trap" -- Mapping not an end in itself; use maps to continuously strengthen programs, advising and metamjor communities

Equity focus of GP is to ensure that underserved students enter and succeed in high-opportunity programs.

1. What programs are our students currently enrolled in?
2. Which programs lead to greater or lesser opportunity?
3. How can we ensure that underserved students are helped to enter and succeed in high opportunity programs?



CCRC ANALYTICS

COMMUNITY COLLEGE RESEARCH CENTER | JUNE 2020

Unpacking Program Enrollments and Completions With Equity in Mind

By John Fink and Davis Jenkins

Across the country hundreds of community colleges are implementing whole-college guided pathways reforms to create clearer paths to college and career success for students.[1] The aim of these reforms is to help students explore and decide upon career and education goals that align with their interests and aspirations, and to plan and complete a program of study to achieve those goals. As part of these reforms, colleges redesign intake and advising processes around broad career fields sometimes called "meta-majors"; this helps entering students make sense of the large number of program options that are available and engages them with faculty, advisors, and other students in a field of interest right from the start (Jenkins et al., 2020). Guided pathways reforms are challenging for colleges to pursue; they entail the participation of all staff in modifying practices around a far-reaching notion of student success (Jenkins et al., 2019). They require a shift in mindset wherein college personnel ask not only "Are students persisting and completing?" but also "Do our programs really lead to the education and career outcomes students seek?" and "Is student representation across our programs equitable?"

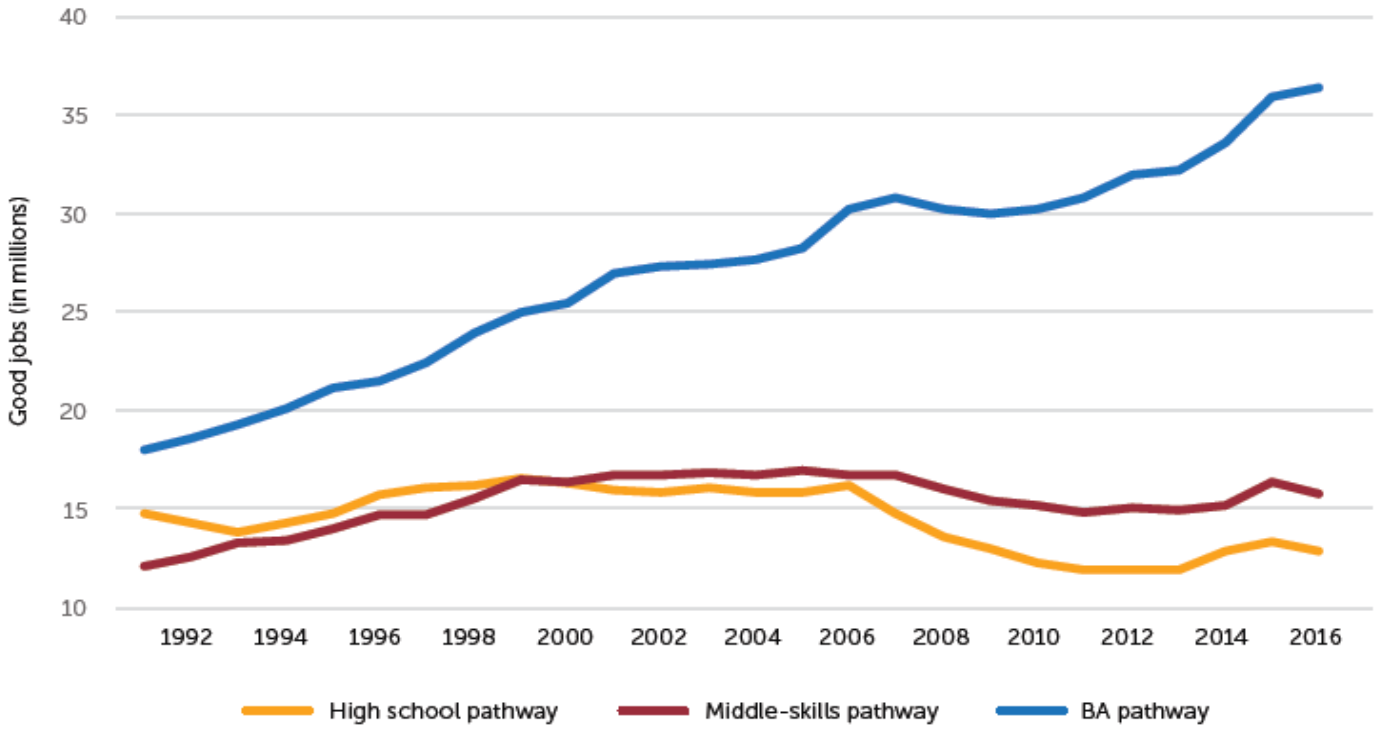
"A substantial literature base reveals not only that returns to higher education programs are stratified but also that this stratification operates along racial/ethnic, gender, and socioeconomic lines.

Critically examining what programs students are entering and completing is particularly important given that some community college programs lead to substantially higher economic returns than others (Belfield & Bailey, 2017; Dadgar & Trimble, 2015). A substantial literature base reveals not only that returns to higher education programs are stratified but also that this stratification operates along racial/ethnic, gender, and socioeconomic lines (Carnevale et al., 2016; Castex & Decher, 2014). Though this research has focused primarily on the four-year sector, it may be that community colleges are in even more danger of facilitating inequitable stratification since their programs vary by subject area as well as length (corresponding, e.g., to short- and long-term certificates, applied associate degrees, and associate of arts degrees designed to prepare students for upward transfer to bachelor's degree programs). There is a wide range in the economic returns to different types of community college awards, with longer programs and those leading to bachelor's degrees in math-intensive fields, for example, leading to stronger labor market returns.

https://ccrc.tc.columbia.edu/publications/unpacking-program-enrollments-completion-equity.html

Good jobs* increasingly require bachelor's degrees…

Figure 4. By 2000, the middle-skills pathway surpassed the high school pathway in providing good jobs.



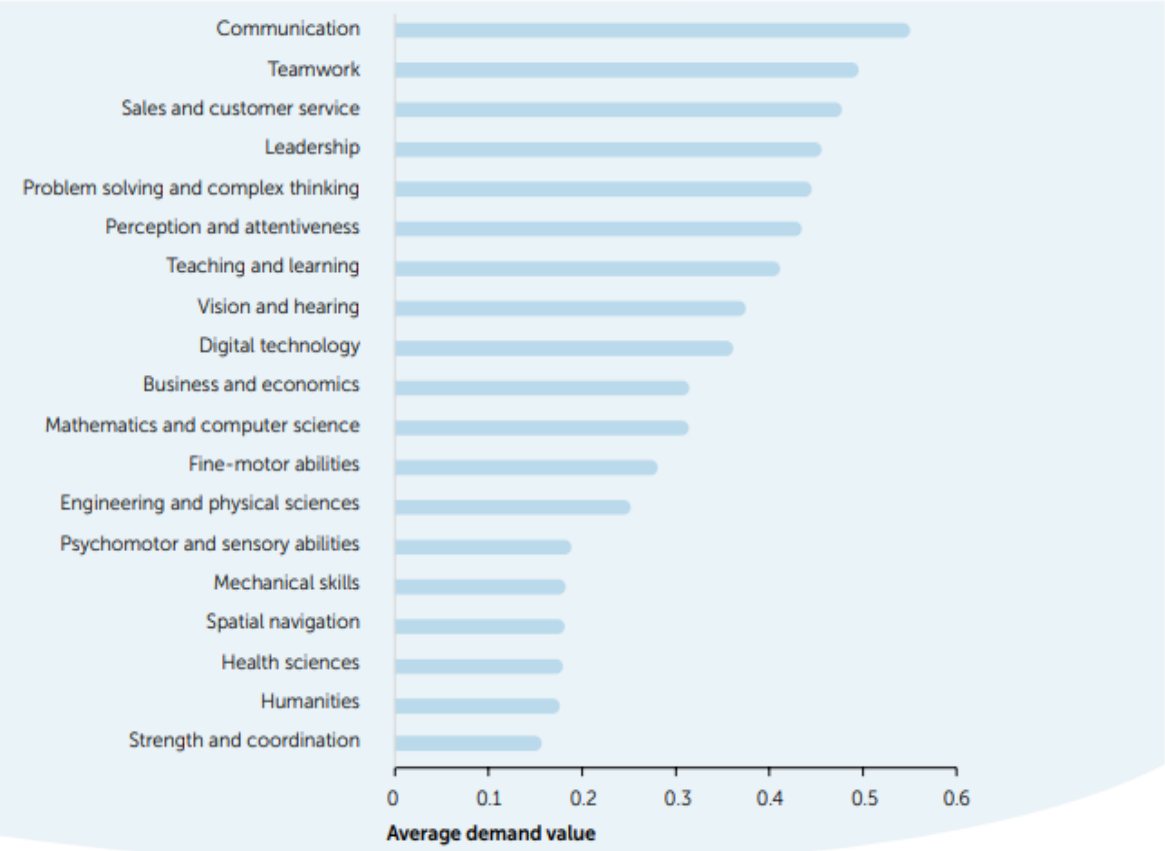
Source: Georgetown University Center on Education and the Workforce analysis of data from the US Census Bureau and Bureau of Labor Statistics, *Current Population Survey*, 1992–2017.

* **"Good jobs" defined as those that pay a minimum of $35,000 for workers between the ages of 25 and 44 and at least $45,000 for workers between the ages of 45 and 64.**

Source: Carnevale, et al., *Three Educational Pathways to Good Jobs*. Georgetown Center on Education and the Workforce, 2018.

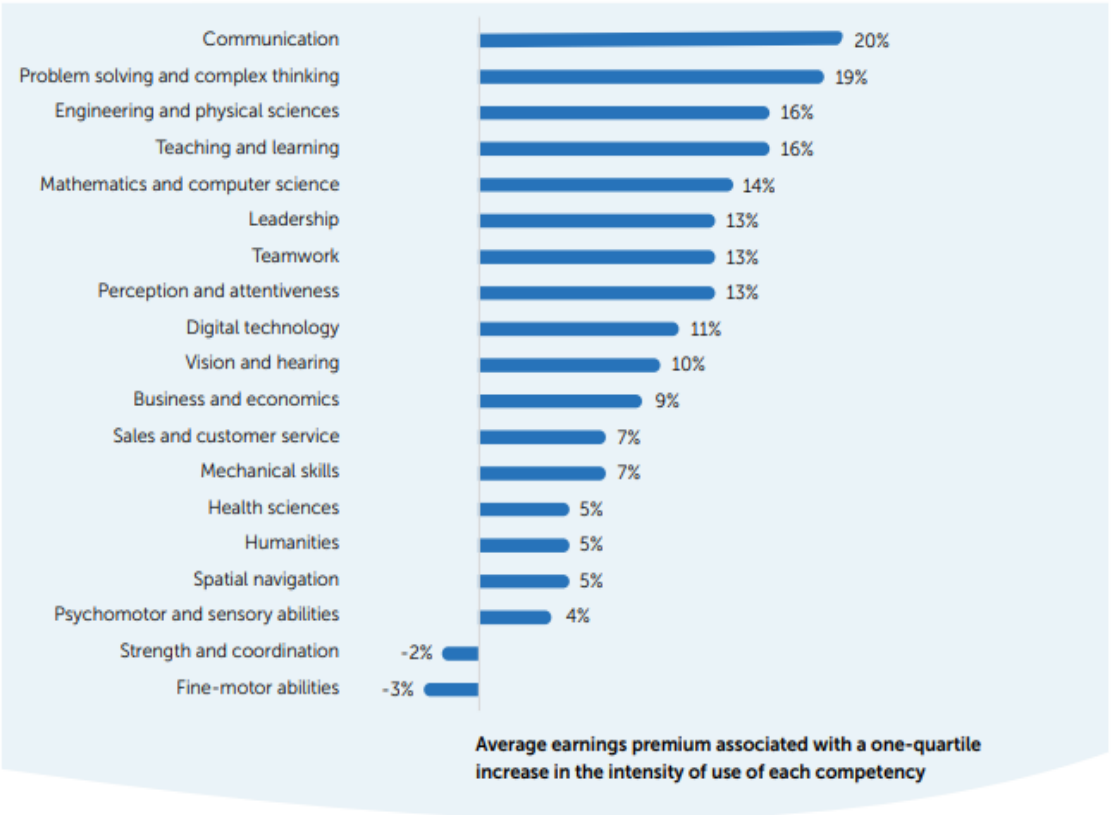
…plus know-how acquired through active and experiential learning

Figure 4. Across the labor market, communication is the most in-demand competency.



Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, American Community Survey (ACS), 2014–18, and US Department of Labor, Employment and Training Administration, Occupational Information Network (O*NET) 24.3 Database, 2020.

Figure 5. Communication has the highest earnings premium associated with higher intensity of use.



Source: Georgetown University Center on Education and the Workforce analysis of data from US Census Bureau, American Community Survey (ACS), 2014–18, and US Department of Labor, Employment and Training Administration, Occupational Information Network (O*NET) 24.3 Database, 2020.

Source: Georgetown University Center on Education and the Workforce, Workplace Basics: The Competencies Employers Want, 2020.

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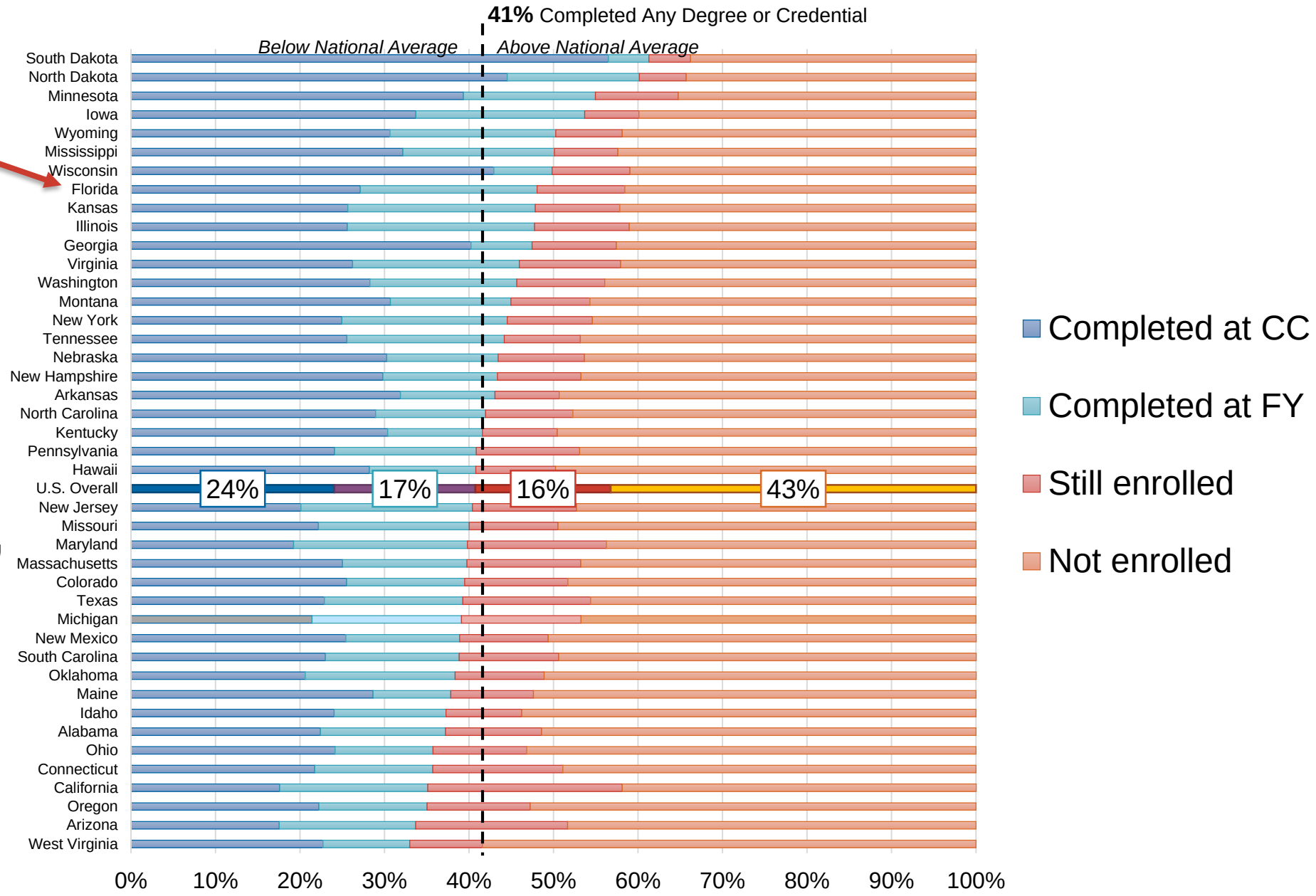
Florida State Colleges

Highest degree outcomes in six years: Community college starters, by state



Source: NSC Completing College Signature Report tracking the fall 2013 FTIC, degree-seeking public 2-yr entering cohort (excluding current dual enrollment students but including former DE students)

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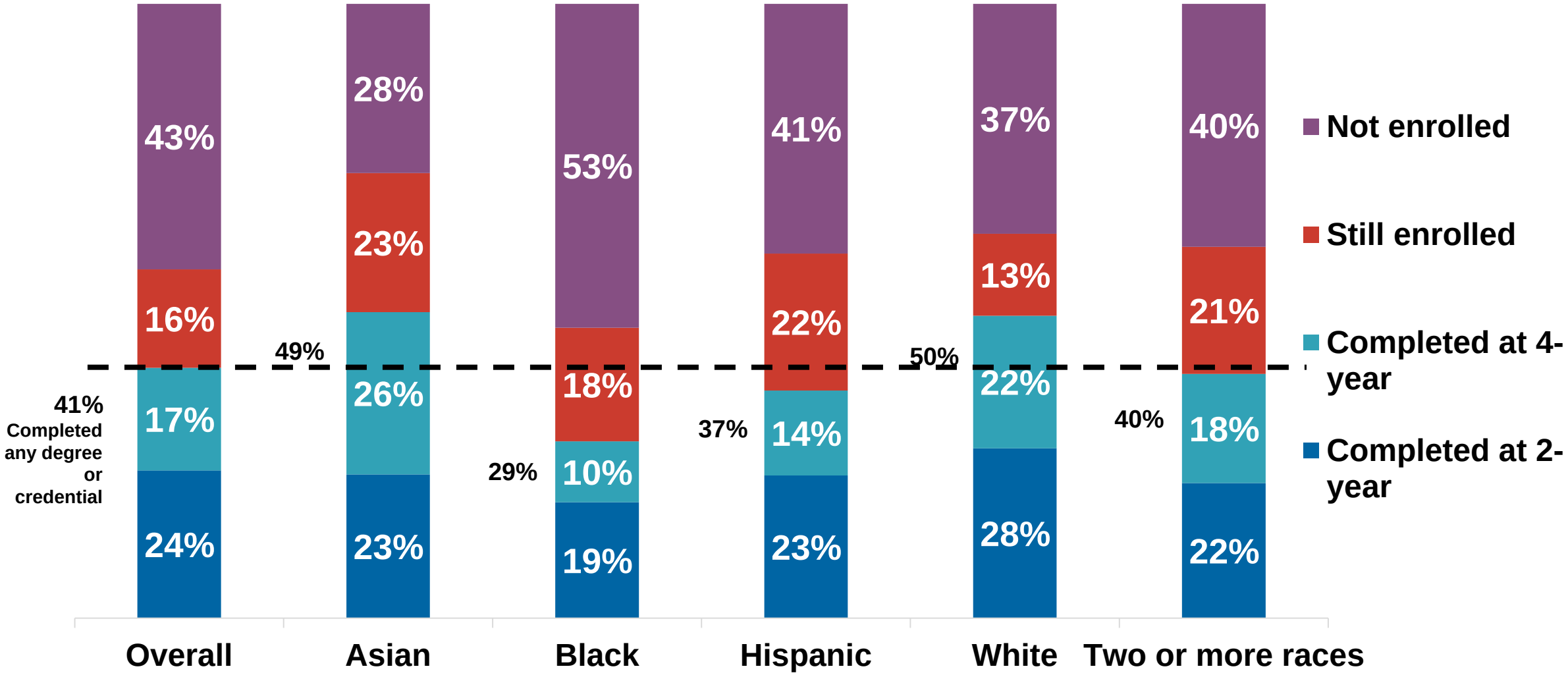
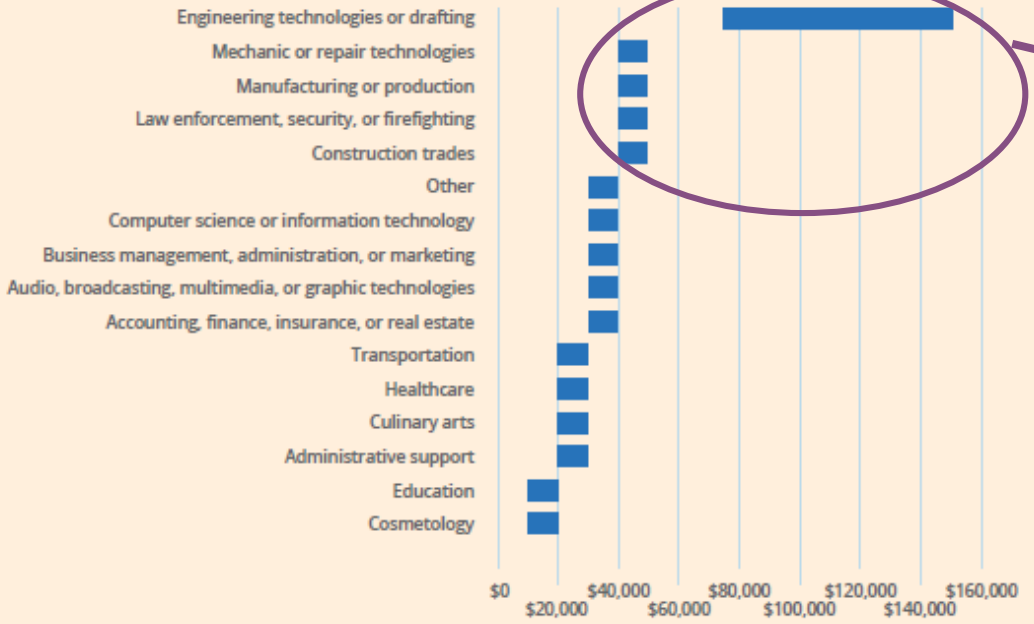
Highest 6-year outcomes for community college starters



Source: National Student Clearinghouse *Completing College* (Signature Report) tracking the fall 2013 cohort of first-time-in-college, degree-seeking students at public two-year colleges.

Many FSC CTE credentials do not have strong labor market returns.

FIGURE 13. Workers with certificates in engineering technologies or drafting have median earnings between $75,001 and $150,000—higher than those with certificates in other fields.



Source: Georgetown University Center on Education and the Workforce analysis of data from the Adult Training and Education Survey (ATES), 2016.

Note: ATES asks respondents to specify their earnings during the 12 months prior to the interview within prescribed wage bands by field of study. We calculated median wage bands based on earnings for prime-age workers (ages 25 to 64) with positive earnings. Fields with fewer than 30 records were not included.

22% PSAVs awarded by FL state colleges in 2016-17

Source: Carnevale, et al., *Overlooked Value of Certificates and Associate's Degrees*. Georgetown Center on Education and the Workforce, 2020.

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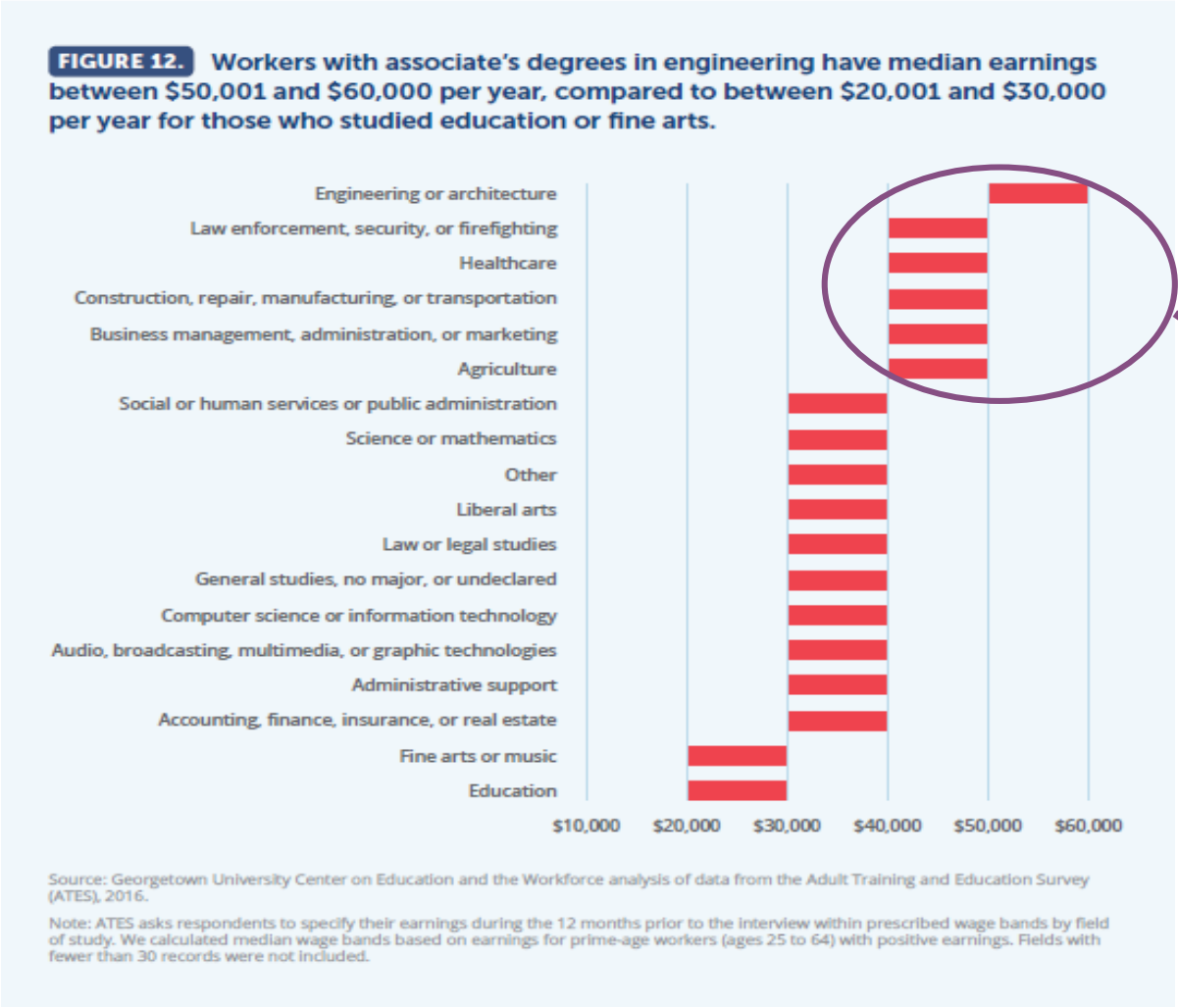
Many FSC associate degrees do not have strong labor market returns.



17% of associate degrees awarded by FL state colleges in 2016-17

Source: Carnevale, et al., Overlooked Value of Certificates and Associate's Degrees. Georgetown Center on Education and the Workforce, 2020.

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AA transfer degrees are valuable only if students can transfer with few excess credits in their major

Just **58%** of students successfully transferred 90% of their credits.

And **15%** can't transfer any credits at all.

Students who can transfer 90% of their credits were **2.5x** more likely to get their bachelor's degree, compared to those who transfer half or less.

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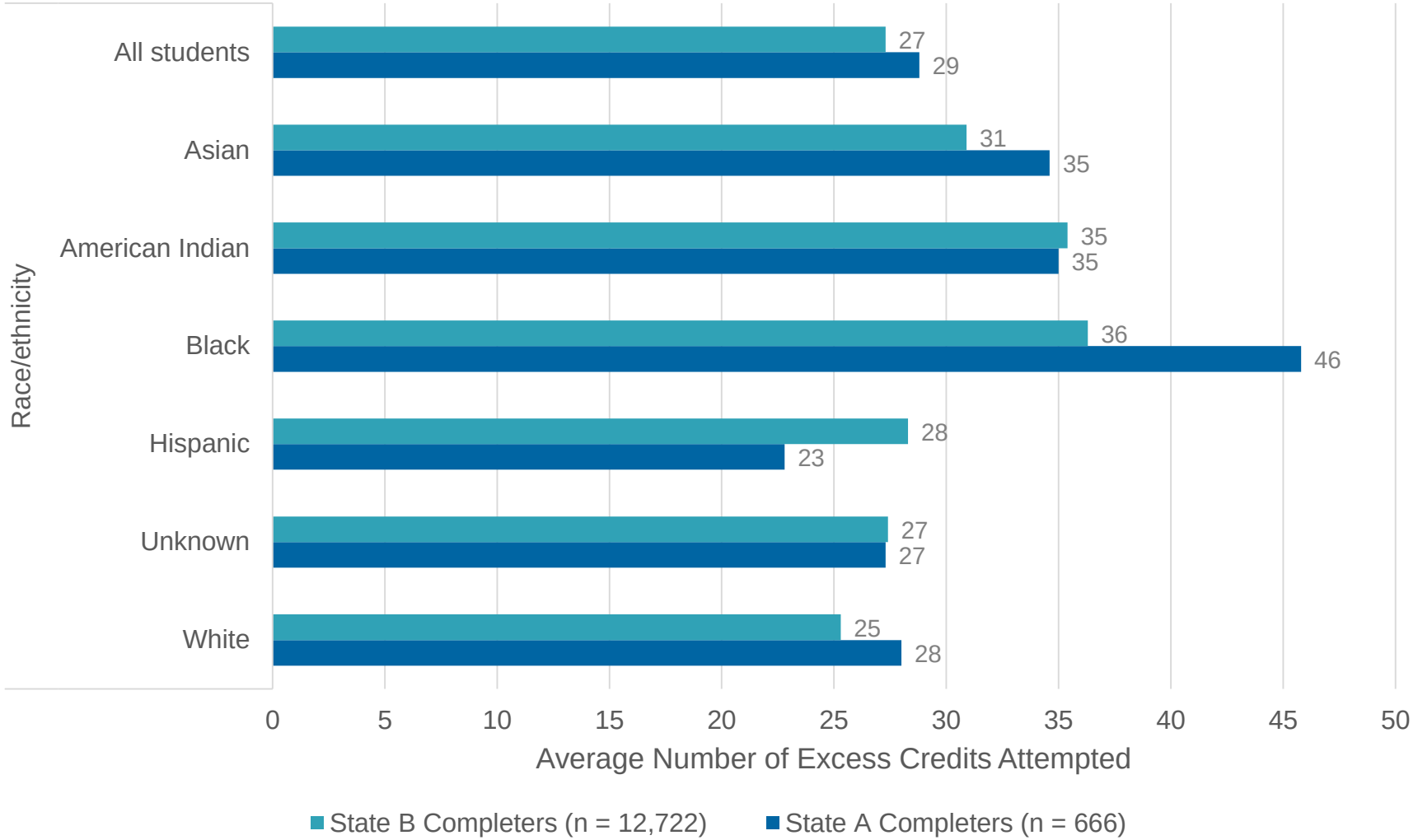
We couldn't find data on FCS students' credits to a bachelor's degree, but they take lots of credits for the AA

Table 3: Average Credits-to-Degree**Florida College System and Southern Regional Education Board States for Students WITH Acceleration Hours						
	2008-09		2009-10		2010-11	
Category	**FT***	**PT***	**FT***	**PT***	**FT***	**PT***
FCS Rank Among States Reporting With Acceleration Credits (5 in 2008-09, 6 in 2009-10 and 5 in 2010-11)	1st	3rd	3rd	3rd	2nd	2nd
FCS Credits With Acceleration Hours	73.1	72.9	73.9	72.6	73.8	73.1
SREB State Average Credits With Acceleration Hours	75.1	72.8	77.1	75.1	76.2	74.0
Difference	*-2.0*	*0.1*	*-3.2*	*-2.5*	*-2.4*	*-0.9*
Average Credits-to-Degree for Students WITHOUT Acceleration Hours						
Category	**FT***	**PT***	**FT***	**PT***	**FT***	**PT***
FCS Rank Among States Reporting Without Acceleration Credits (2 in 2008-09, 7 in 2009-10 and 6 in 2010-11)	1st	1st	3rd	3rd	2nd	3rd
FCS Credits Without Acceleration Hours	81.3	81.4	77.3	78.0	77.1	77.9
SREB State Average Credits Without Acceleration	86.2	88.7	83.7	79.7	83.1	80.2
Difference	*-4.9*	*-7.3*	*-6.4*	*-1.7*	*-6.0*	*-2.3*
*Full and part-time status is determined based on student's first enrollment at graduating college. **60 hours required for an associate degree in Florida. Source: SREB-State Data Exchange and Division of Florida Colleges Research & Analytics.						

Source: HOW DOES THE FLORIDA COLLEGE SYSTEM COMPARE TO OTHER SOUTHERN STATES ON MEASURES RELATING TO DEGREE COMPLETION? TIME-TO-DEGREE? CREDITS-TO-DEGREE?, Florida College System Research and Analytics, 2013.

Excess Credits Attempted among CC Starters Who Transferred and Completed a Bachelor's Degree: State A and B



Fink, Jenkins, Kopko, & Ran, (2018). Using Data Mining to Explore Why Community College Transfer Students Earn Bachelor's Degrees With Excess Credits. CCRC Working Paper No 100.

Categorizing Community College Programs by Post-Graduation Opportunity

Category	Description	Examples
Workforce: Low	Program places students into jobs with low average earnings (e.g., less than $14/hour)	Criminal Justice, Automobile Technology, Early Childhood
Workforce: Medium	Program places students into relatively middle-paying job (e.g., between $14-$17.55/ hour)	Accounting, Welding, Business Management, Dental Assistant
Workforce: High	Program places students into a relatively high-paying job (e.g., more than $17.55/ hour)	Nursing, Radiology Technology, Sonography, Dental Hygiene
Transfer: Unstructured	Program designed for general transfer (no pre-major or university destination necessarily specified)	AA-General Studies, “General Transfer”
Transfer: Structured	Program designed to prepare students for a particular baccalaureate major/meta-major and/or a specific four-year destination	AA-Business (DTA), AS-T (Engineering)
Undeclared or Unknown	Listed as undeclared or missing program information	Null, Missing Program, Undeclared
Uncategorized or Other	Non-degree seeking, ESL, ABE, dual enrollment	Basic Education, ESL, Running Start

Program Equity Explorer Excel Tool

Data Tool: Unpacking Program Enrollments and Completions with Equity in Mind

John Fink, June 2020

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This Excel tool is designed to help colleges get started in examining data on student program enrollments and completions,* following three primary questions described in the companion CCRC Analytics publication (linked below):

1) What programs are our students currently enrolled in? (Tab 1)

2) What opportunity does each program lead to in terms of further education (e.g., transfer to bachelor's programs or bridges into more advanced workforce credentials) and/or immediate job prospects and earnings. Which programs lead to greater or lesser opportunity? (Tab 2)

3) Is student representation across programs proportionate? Which subgroups of students (by race/ethnicity, gender, socioeconomic status, and age) are underrepresented in higher-opportunity programs? (Tabs 3-4)

	A	B	C	D	E	F	G
1	**Program**	**Workforce/Transfer Category**	**Meta-major**	**Gender**	**Race**	**Age**	**Count**
2	General Liberal Arts	TRANSFER-UNSTRUCTURED	Arts, Humanities, Communicatior	Male	Asian	<18	1
3	Pre-Vet Medicine	TRANSFER-UNSTRUCTURED	Industrial & Applied Technologies	Female	Multiracial	18-24	1
4	Repair Tech	WORKFORCE-LOW	Industrial & Applied Technologies	Female	African American	18-24	1
5	AS-Transfer-Physics	TRANSFER-STRUCTURED	STEM	Male	Asian	<18	1
6	AS-Transfer-Physics	TRANSFER-STRUCTURED	STEM	Female	Multiracial	<18	1
7	General Liberal Arts	TRANSFER-UNSTRUCTURED	Arts, Humanities, Communicatior	Female	White	25+	1
8	AA-Transfer-Business	TRANSFER-STRUCTURED	Business	Female	White	18-24	1
9	Unknown / Undeclared	UNKNOWN/UNDECLARED	Arts, Humanities, Communicatior	Male	African American	25+	1
10	AA-Transfer-Business	TRANSFER-STRUCTURED	Business	Male	African American	18-24	1
11	Kinesiology	WORKFORCE-MEDIUM	Social & Behavioral Sciences	Male	Asian	25+	1
12	Forest Resources	WORKFORCE-LOW	Industrial & Applied Technologies	Female	White	18-24	1
13	Dental Assisting	WORKFORCE-MEDIUM	Human Services & Public Safety	Male	Pacific Islander	18-24	1
14	History	TRANSFER-UNSTRUCTURED	Arts, Humanities, Communicatior	Male	Native	<18	1
15	Political Science	TRANSFER-UNSTRUCTURED	Social & Behavioral Sciences	Male	Hispanic	<18	1
16	AS-Transfer-Biology	TRANSFER-STRUCTURED	STEM	Male	Multiracial	18-24	1
17	AS-Transfer-Construction	TRANSFER-STRUCTURED	Industrial & Applied Technologies	Male	White	18-24	1

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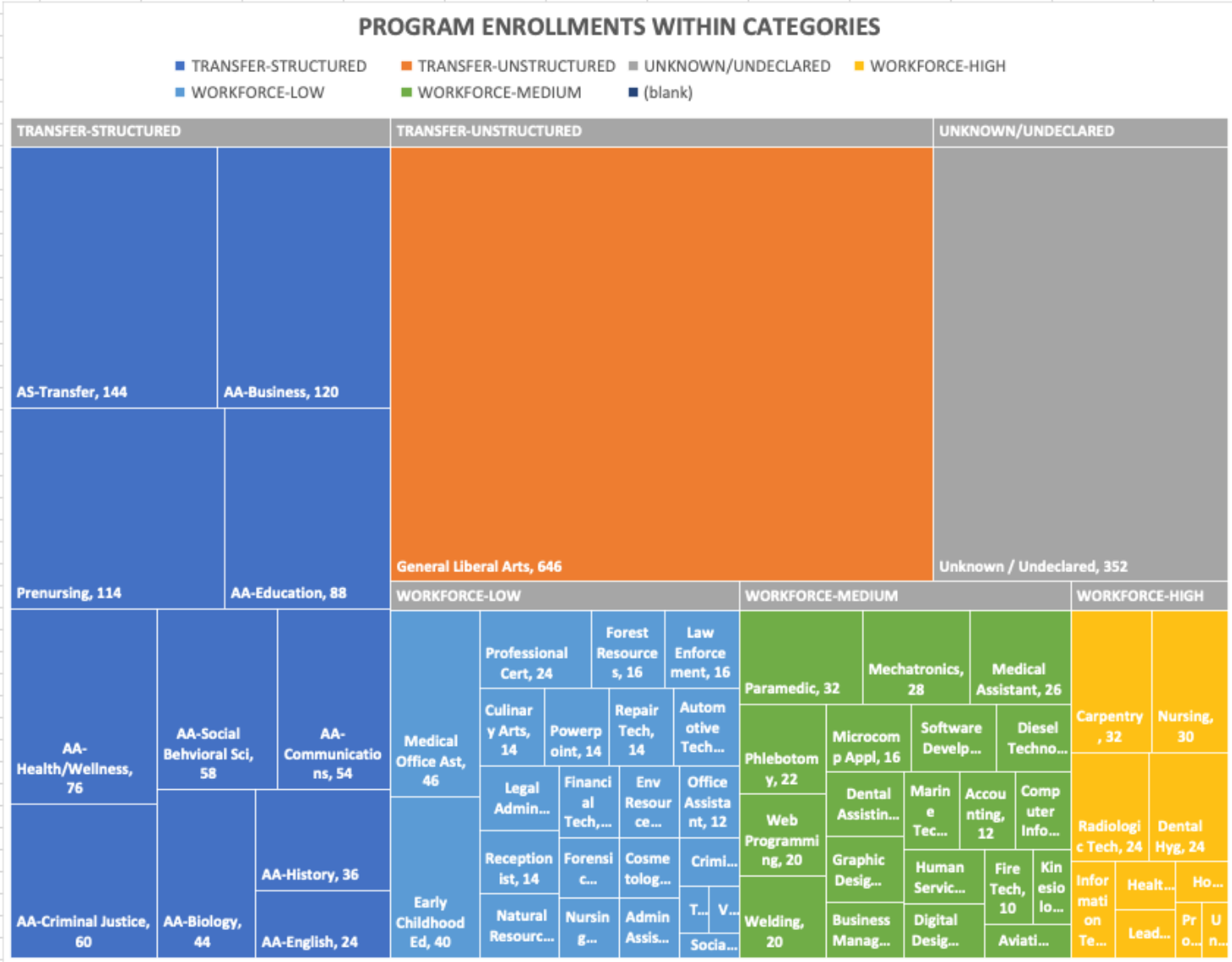
Program Equity Explorer Excel Tool

Sum of count		
Workforce/Transfer Categ	Program	Total
TRANSFER-STRUCTURED	AS-Transfer	144
	AA-Business	120
	Prenursing	114
	AA-Education	88
	AA-Health/Wellness	76
	AA-Criminal Justice	60
	AA-Social Behvioral Sci	58
	AA-Communications	54
	AA-Biology	44
	AA-History	36
	AA-English	24
TRANSFER-UNSTRUCTURED	General Liberal Arts	646
UNKNOWN/UNDECLARED	Unknown / Undeclared	352
WORKFORCE-HIGH	Carpentry	32
	Nursing	30
	Radiologic Tech	24
	Dental Hyg	24
	Information Tech	12
	Healthcare Data Analytics	8
	Leadership In Trades	8
	Homeland Security	6
	Project Management	4
	Union Electrician	4
WORKFORCE-LOW	Medical Office Ast	46
	Early Childhood Ed	40
	Professional Cert	24
	Forest Resources	16
	Law Enforcement	16
	Culinary Arts	14
	Powerpoint	14
	Repair Tech	14
	Automotive Tech	14
	Legal Admin Assist	14
	Receptionist	14
	Natural Resource	14
	Financial Tech	12
	Env Resource Management	12
	Office Assistant	12
	Forensic Tech	10
	Nursing Assistant	10
	Cosmetology	10
	Admin Assistant	10

Total Students: 2,624



TEACHERS COLLEGE, COLUM

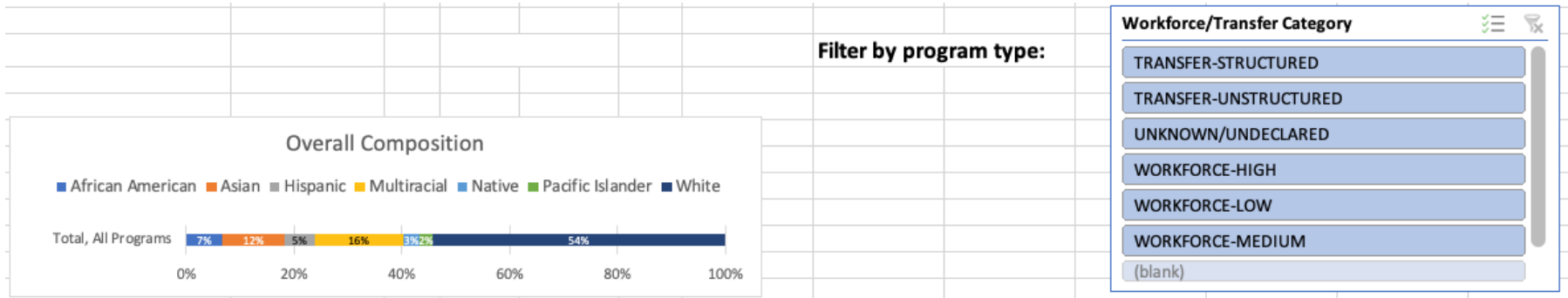
Filter by student characteristics:

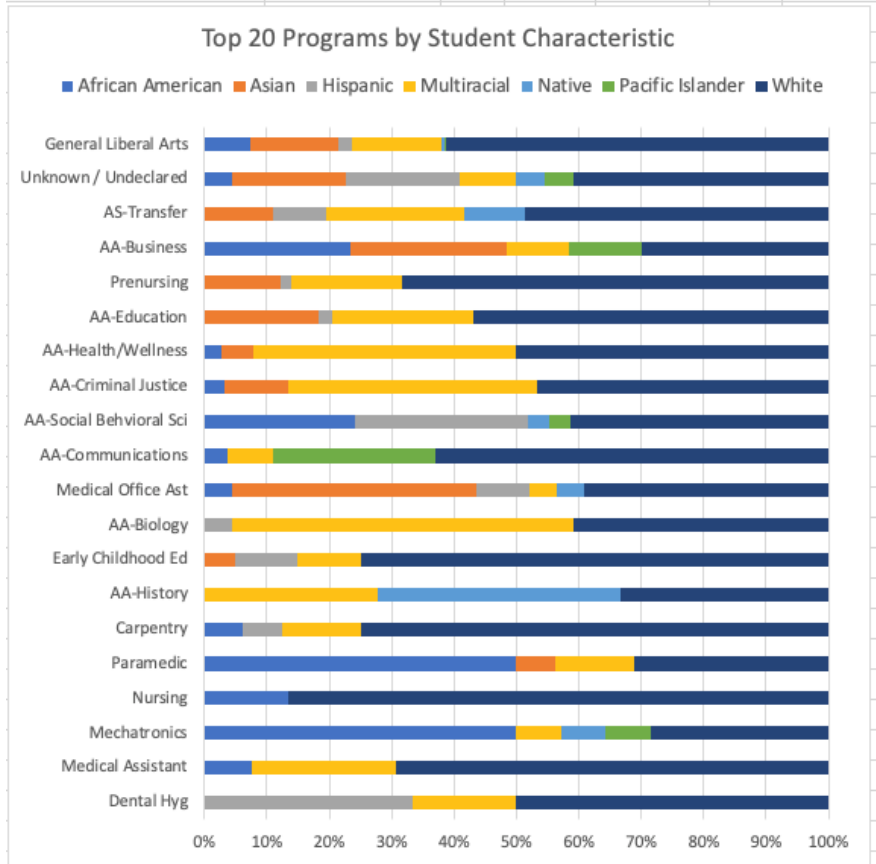
Student Age
- <18
- 18-24
- 25+
- (blank)

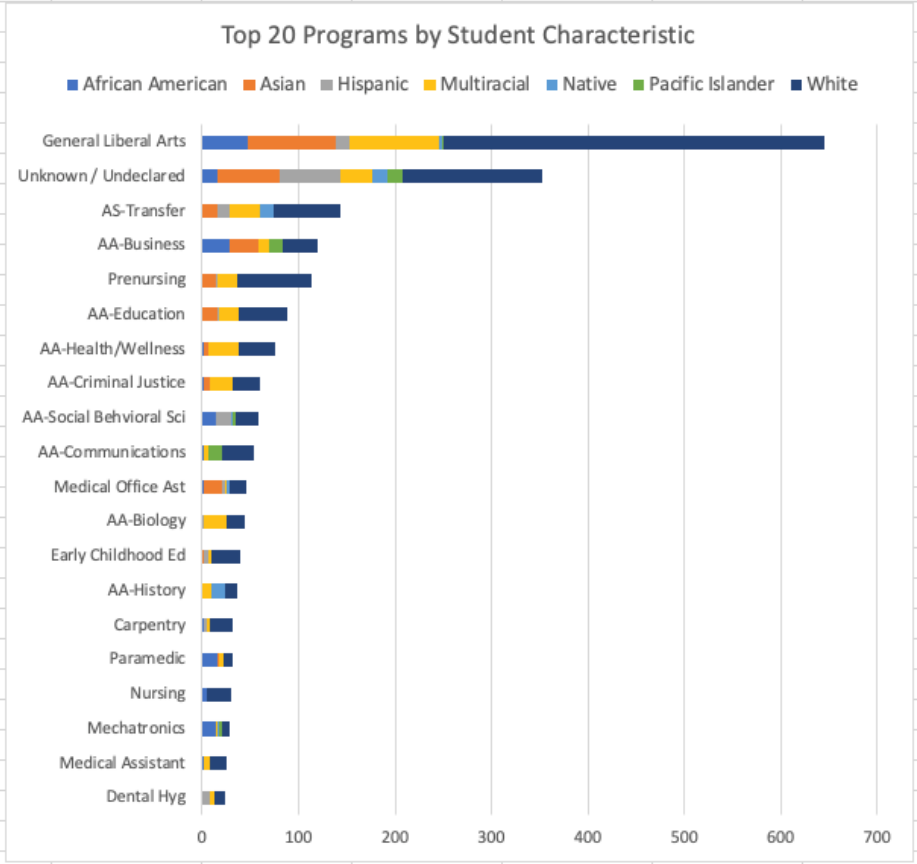
Student Race/Ethnicity
- African American
- Asian
- Hispanic
- Multiracial
- Native
- Pacific Islander
- White
- (blank)

Student Gender
- Female
- Male
- (blank)

Program Equity Explorer Excel Tool

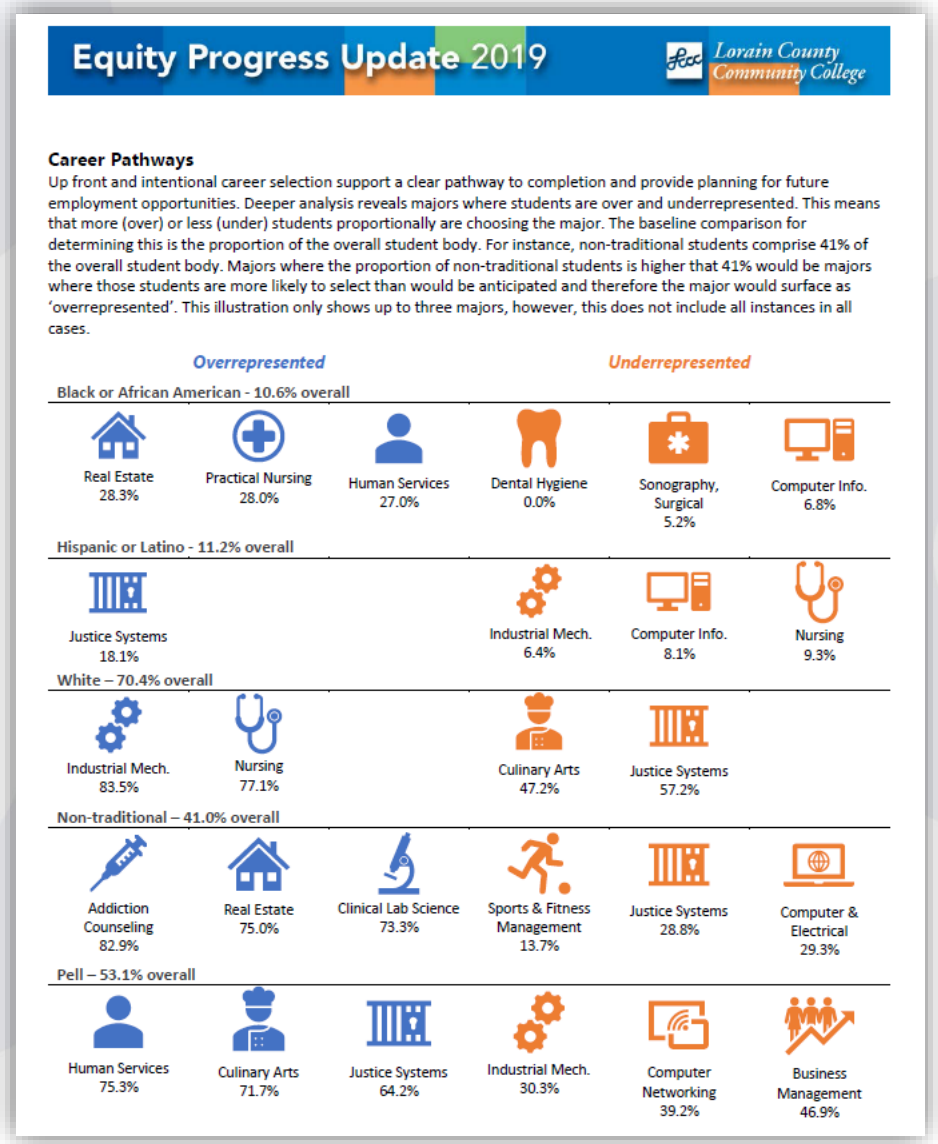






Ensuring equity in high-opportunity program enrollment

- National studies released about the impact of program selection
- Disaggregated completion rates started to prompt pipeline discussions
- Results from graduate outcome surveys sparked internal dialog
- Data & Information Group (DIG) shared creation of new report



Equity Progress Update 2019

Lorain County Community College

Career Pathways

Up front and intentional career selection support a clear pathway to completion and provide planning for future employment opportunities. Deeper analysis reveals majors where students are over and underrepresented. This means that more (over) or less (under) students proportionally are choosing the major. The baseline comparison for determining this is the proportion of the overall student body. For instance, non-traditional students comprise 41% of the overall student body. Majors where the proportion of non-traditional students is higher that 41% would be majors where those students are more likely to select than would be anticipated and therefore the major would surface as 'overrepresented'. This illustration only shows up to three majors, however, this does not include all instances in all cases.

	Overrepresented			*Underrepresented*		
Black or African American - 10.6% overall	Real Estate 28.3%	Practical Nursing 28.0%	Human Services 27.0%	Dental Hygiene 0.0%	Sonography, Surgical 5.2%	Computer Info. 6.8%
Hispanic or Latino - 11.2% overall	Justice Systems 18.1%			Industrial Mech. 6.4%	Computer Info. 8.1%	Nursing 9.3%
White – 70.4% overall	Industrial Mech. 83.5%	Nursing 77.1%		Culinary Arts 47.2%	Justice Systems 57.2%	
Non-traditional – 41.0% overall	Addiction Counseling 82.9%	Real Estate 75.0%	Clinical Lab Science 73.3%	Sports & Fitness Management 13.7%	Justice Systems 28.8%	Computer & Electrical 29.3%
Pell – 53.1% overall	Human Services 75.3%	Culinary Arts 71.7%	Justice Systems 64.2%	Industrial Mech. 30.3%	Computer Networking 39.2%	Business Management 46.9%

Mapping Postsecondary Pathways To More Equitable Student Success In a Robot Economy

An Institutional Perspective

Dr. Ed Massey

Florida Pathways Institute II

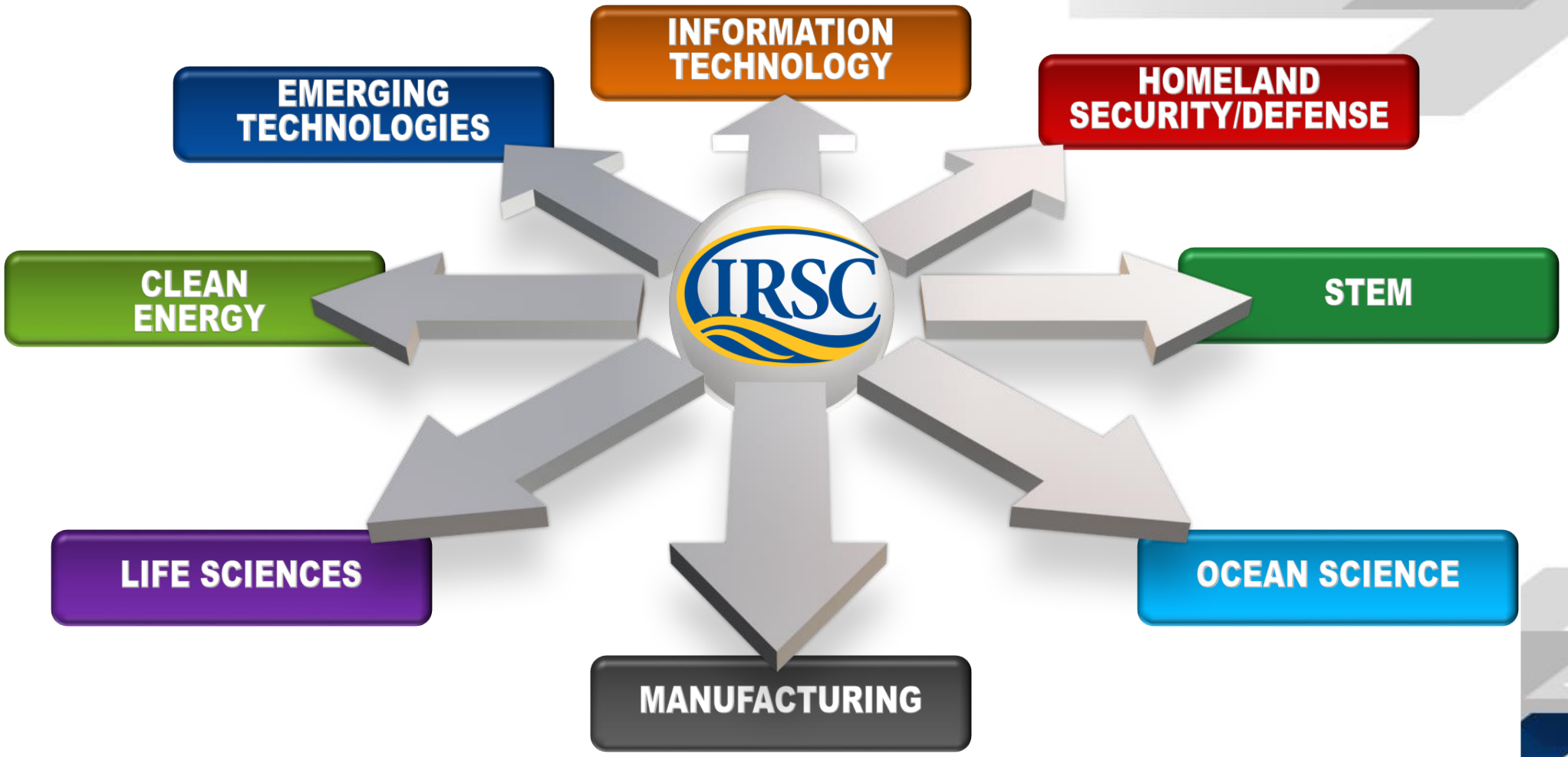
February 10, 2021

THE ASPEN INSTITUTE
ASPEN PRIZE
FOR COMMUNITY COLLEGE EXCELLENCE
WINNER
Indian River State College
2019

Guided Pathways – Lessons Learned

- **Transformational Change** focused on improving the student experience
- **Change driven by cross-campus and cross-discipline leadership** – commitment and communications
- **Change in Business Model** – onboarding, financial aid, scheduling, learning outcomes, career counseling
- **Expanded use of data** - progression points, critical courses, barrier courses, interventions, math requirements
- **Institutional discipline and efficiencies** in use of manpower and financial resources.

Industry Focus of IRSC Growth



Basis for IRSC Growth Model

STATE OF FLORIDA

- Alignment with FL's Business/Economic Growth Enterprise Florida – Targeted Industry Clusters
- Recognition of State Workforce Trends
- Articulation with State Universities

LOCAL COMMUNITY

- Strong Partnerships with Business & Industry
- Economic Dev. Recruitment
- Current Need/Reactivity : Good
  Future Need/Proactivity : Great
- Private Fundraising

INTERNALLY

- Healthy Innovative and Entrepreneurial Culture
- Emphasis on High Quality Results
- Abundance Mentality/"Can-Do" Attitude

Eight Meta Majors

Our Guided Pathways Story…

2017-2020 – Momentum data reflects positive impact of Guided Pathways

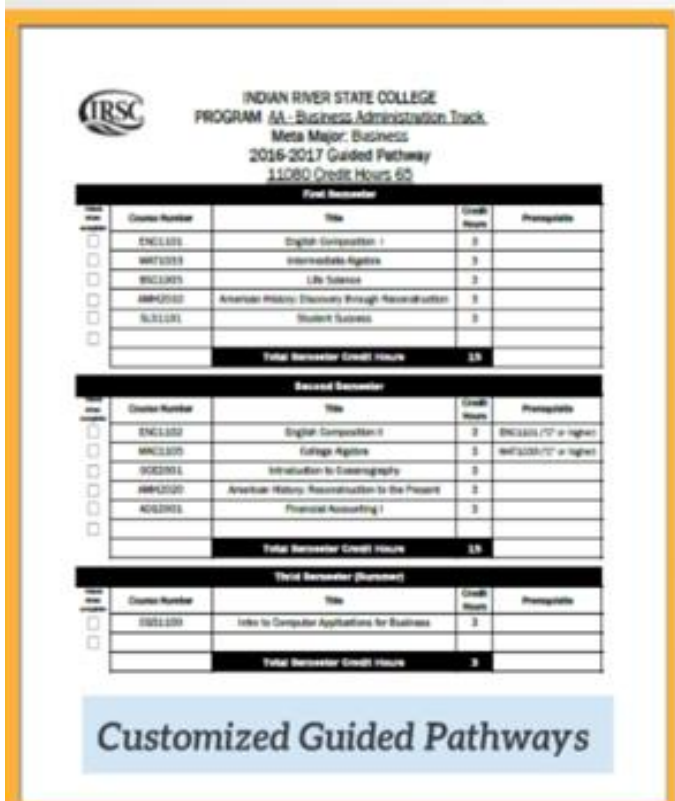
2016 – Career & Transfer services revamped / Assigned Advisors for all students

2016 - New Student Orientation re-designed and required / Student Success Course required

2016 – Guided Pathways scaled for all programs & required for all degree-seeking students

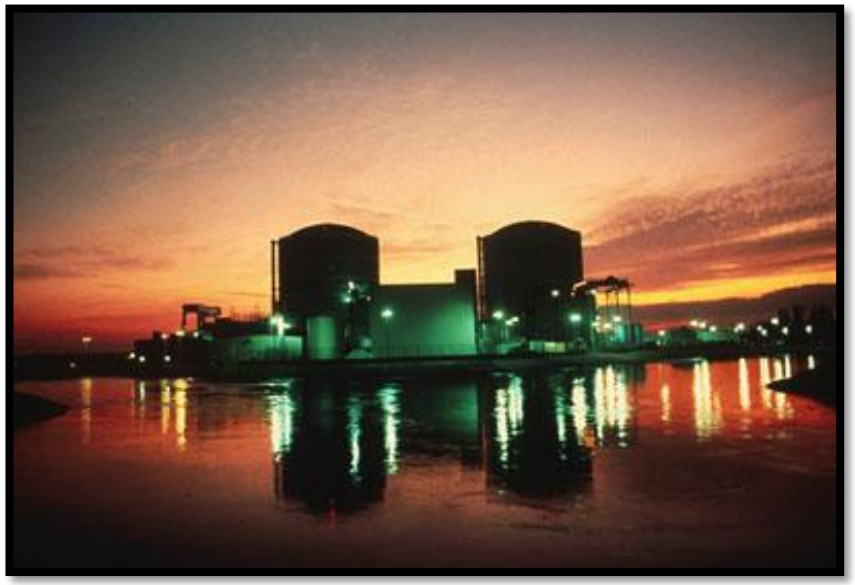
2015 – AACC Pathways Project: IRSC, SPC, TCC, BC

2007 – Academic Plans available but not required


INDIAN RIVER STATE COLLEGE
PROGRAM AA - Business Administration Track
Meta Major: Business
2016-2017 Guided Pathway
11080 Credit Hours 60

Customized Guided Pathways

Regional Center for Nuclear Education and Training



- **NSF ATE Funded – Nation's 1st RC-NET hosted at IRSC**
- **50+ Education, Industry, and Governmental Agency Partners**
- **GOAL: address the need for 41,000 skilled nuclear employees by 2030**
- **High direct entry success**

K-12 Connections

Goal: Inspire students into STEM careers

HIGH SCHOOL CAREER ACADEMIES

- Alignment with IRSC STEM Programs & Degrees
  - Digital Media
  - Aeronautics
  - Allied Health /Nursing
  - Engineering
  - Entrepreneurship
  - Biotechnology
  - Information Tech.
  - Oceanographic
  - Veterinary
  - Manufacturing
- 116 academies total in four-county service region

Career Academy → Certificate → Assoc. Degree → Bacc. Degree

K-12 Connections

- **Great Explorations**
  - Annual IRSC Event in Partnership with Quad-County Career Pathway Consortium and Four-County School Districts
  - Close to 1000 high school students participating in more than 50 interactive career exploration activities.
- **Annual Counselors Conclave**
  - Annual convening of four-county Middle, High School & College Advisors
- **Dual Enrollment Opportunities**
  - All DE students have assigned advisors & Guided Pathways

Placement Test Waived due to Pandemic

- **Summer and Fall 2020**
  - more students of color encouraged and confident in pursuit of Dual Enrollment Courses without the barrier of a standardized test

Dual Enrollment Rates YTD by Race/Ethnicity - F19 vs. F20 YTD

- Overall: ⬇ 6.9% FTE / 2% Headcount
- **Black Students: ⬆ 12% FTE / 18.8% Headcount!!**

Dual Enrollment Course Success

2020 Summer A Classes:

Race/Ethnicity	Success Rate	Total Courses
Unreported	95.6%	90
American Indian or Alaska Native	**	<10
Asian	98.0%	101
Black or African American	**91.7%**	**325**
Hispanic	89.1%	632
Multiracial	90.4%	94
Native Hawaiian or Other Pacific Islander	**	<10
White	**93.5%**	**1120**
Grand Total	92.0%	2371

Dual Enrollment Course Success

2020 Fall Semester:

Race/Ethnicity	Success Rate	Total Courses
Unreported	91.9%	395
American Indian or Alaska Native	80.0%	25
Asian	95.2%	271
Black or African American	**85.6%**	**950**
Hispanic	86.7%	2544
Multiracial	82.1%	329
Native Hawaiian or Other Pacific Islander	**	<10
White	**90.4%**	**4931**
Grand Total	89.6%	9453

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Senior Research Scholar

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