Additional Resources:

Unpacking Program Enrollments & Completions with Equity in Mind
Examining Program Completions using CCRC’s IPEDS Data Tool

To Build Back Enrollment, Community Colleges Must Ensure That Their Programs Are Worth Completing

By Davis Jenkins and John Fink

Over the past few months, community college leaders have gone to great lengths to recover from the pandemic enrollment crash and attract students back—through marketing campaigns, tuition incentives, and loan or fee forgiveness. All of these efforts are needed. However, to build back enrollment over the longer term, colleges must not only take steps to make it easier to attend college but also reevaluate their programmatic offerings to ensure that all programs lead to outcomes that make them worth the investment of time and money by students and their families.

A starting point is to ask some fundamental questions: What programs are our students completing, what do they lead to, and which groups of students are underrepresented in programs leading to stronger postgraduation outcomes? The data tool below offers a bird’s-eye view of what credentials are being completed at your college or in your state.

https://ccrc.tc.columbia.edu/easyblog/community-college-enrollment-value.html
https://public.tableau.com/app/profile/john.fink
3. Switch to “Completions Disaggregated” tab
4. Disaggregate by sex, race/ethnicity, or both combined

How do student groups differ by award level?
Which student groups are overrepresented in short-term certificates?

61% of awards to Hispanic Males were short term certificates
48% of awards overall were short term certificates
3. Switch to “Completions Disaggregated” tab
4. Disaggregate by sex, race/ethnicity, or both combined
5. Switch to tab: “Certificates: Disaggregated Completions”
3. Switch to “Completions Disaggregated” tab

4. Disaggregate by sex, race/ethnicity, or both combined

5. Switch to tab: “Certificates: Disaggregated Completions”


Disaggregating Associate Completions by Program of Study

Which types of associate degrees are students completing?

What do these lead to?

Which groups are over/under-represented?
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)

<table>
<thead>
<tr>
<th>Program</th>
<th>Workforce/Transfer Category</th>
<th>Meta-major</th>
<th>Gender</th>
<th>Race</th>
<th>Age</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Liberal</td>
<td>TRANSFER-UNSTRUCTURED</td>
<td>Arts, Humanities, Communication</td>
<td>Male  Asian</td>
<td>&lt;18</td>
<td></td>
<td>1</td>
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<tr>
<td>Pre-Vet Medicine</td>
<td>TRANSFER-UNSTRUCTURED</td>
<td>Industrial &amp; Applied Technologies</td>
<td>Female Multiracial</td>
<td>18-24</td>
<td></td>
<td>1</td>
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<tr>
<td>Repair Tech</td>
<td>WORKFORCE-LOW</td>
<td>Industrial &amp; Applied Technologies</td>
<td>Female African American</td>
<td>18-24</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AS-Transfer-Physics</td>
<td>TRANSFER-UNSTRUCTURED</td>
<td>STEM</td>
<td>Male  Asian</td>
<td>&lt;18</td>
<td></td>
<td>1</td>
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<tr>
<td>AS-Transfer-Physics</td>
<td>TRANSFER-STRUCTURED</td>
<td>STEM</td>
<td>Female Multiracial</td>
<td>&lt;18</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>General Liberal</td>
<td>TRANSFER-STRUCTURED</td>
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<td>25+</td>
<td></td>
<td>1</td>
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<tr>
<td>AA-Transfer-Business</td>
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<td>18-24</td>
<td></td>
<td>1</td>
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<tr>
<td>Unknown / Undeclared</td>
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<td>Male African American</td>
<td>25+</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AA-Transfer-Business</td>
<td>TRANSFER-STRUCTURED</td>
<td>Business</td>
<td>Male African American</td>
<td>18-24</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Kinesiology</td>
<td>WORKFORCE-MEDIUM</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Male Asian</td>
<td>25+</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Forest Resources</td>
<td>WORKFORCE-LOW</td>
<td>Industrial &amp; Applied Technologies</td>
<td>Female White</td>
<td>18-24</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Dental Assisting</td>
<td>WORKFORCE-MEDIUM</td>
<td>Human Services &amp; Public Safety</td>
<td>Male Pacific Islander</td>
<td>18-24</td>
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<td>1</td>
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<tr>
<td>History</td>
<td>TRANSFER-UNSTRUCTURED</td>
<td>Arts, Humanities, Communication</td>
<td>Male Native</td>
<td>&lt;18</td>
<td></td>
<td>1</td>
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<tr>
<td>Political Science</td>
<td>TRANSFER-UNSTRUCTURED</td>
<td>Social &amp; Behavioral Sciences</td>
<td>Male Hispanic</td>
<td>&lt;18</td>
<td></td>
<td>1</td>
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<tr>
<td>AS-Transfer-Biology</td>
<td>TRANSFER-STRUCTURED</td>
<td>STEM</td>
<td>Male Multiracial</td>
<td>18-24</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>AS-Transfer-Construction</td>
<td>TRANSFER-STRUCTURED</td>
<td>Industrial &amp; Applied Technologies</td>
<td>Male White</td>
<td>18-24</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Program Equity Explorer Excel Tool

Total Students: 2,624

Program Enrollments Within Categories

- **TRANSFER-STRUCTURED**
  - AA-Transfer, 144
  - AA-Business, 120
- **TRANSFER-UNSTRUCTURED**
  - Pre-nursing, 114
  - AA-Education, 88
- **WORKFORCE-LOW**
  - AA-Health/Wellness, 76
  - AA-Criminal Justice, 60
  - AA-Social Behavioral Sci, 58
  - AA-Communications, 54
  - AA-Biology, 44
  - AA-History, 36
  - AA-English, 24
- **WORKFORCE-MEDIUM**
  - General Liberal Arts, 646
- **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
  - Medical Office/Assist, 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

**Unknown/Undeclared**
- AA-Transfer, 144
- AA-Business, 120
- Pre-nursing, 114
- AA-Education, 88
- AA-Health/Wellness, 76
- AA-Criminal Justice, 60
- AA-Social Behavioral Sci, 58
- AA-Communications, 54
- AA-Biology, 44
- AA-History, 36
- AA-English, 24
- General Liberal Arts, 646

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)
Early Momentum Metrics as Leading Indicators of Community College Improvement
Metrics for Improvement: Momentum as Leading Indicator

Early Academic Momentum
- Completed 24+ college credits in year 1

Gateway Course Momentum
- Completed college math/English in year 1

Persistence and Course Completion
- Fall-Spring Persistence
- Course completion rate in year 1

Credit Momentum

Longer-Term Outcomes

Benefits of Momentum for Transfer & Bachelor’s Completion

<table>
<thead>
<tr>
<th>Momentum Milestones</th>
<th>Overall Benefit of Milestone</th>
<th>Black Students</th>
<th>Hispanic Students</th>
<th>Low-income Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Momentum</td>
<td>1.7-2x</td>
<td>2-3x</td>
<td>4-5x</td>
<td>7-9x</td>
</tr>
<tr>
<td>Gateway English/Math</td>
<td>1.6-3x</td>
<td>2-4x</td>
<td>4-5x</td>
<td>4-5x</td>
</tr>
</tbody>
</table>

Yuxin Lin, Maggie Fay, & John Fink. (2021). CCRC analysis using statewide administrative data on 573,806 community college entrants between 2009-2016, tracked up to 10 years. Estimated odds ratios from hazard models controlling for students characteristics, college fixed effects and cohort fixed effects.

Metrics for Improvement: Momentum as Leading Indicator

Early Academic Momentum

- Gateway Course Momentum
- Completed college math/English in year 1

Credit Momentum
- Completed 24+ college credits in year 1

Persistence and Course Completion

- Fall-Spring Persistence
- Course completion rate in year 1

Longer-Term Outcomes

- Concentration into program areas
- Accumulating credits in a subject area

Early Program Momentum

Metrics for Improvement: Momentum as Leading Indicator
## Capturing Early STEM Transfer Program Momentum

<table>
<thead>
<tr>
<th>STE Course Type (Excluding Math)</th>
<th>Math Course Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>STE Pathway – State Pathways (e.g., Chem I/II; Bio I/II)</td>
<td>Calculus</td>
</tr>
<tr>
<td>STE Foundation (Pre-Reqs to STEM Transfer, e.g., intro chem/bio courses)</td>
<td>Foundations to Calculus (Pre-Calculus, Trigonometry/Geometry, College Algebra)</td>
</tr>
<tr>
<td>Other STE, Likely Transferable</td>
<td>Statistics</td>
</tr>
<tr>
<td>Other STE, Likely Terminal</td>
<td>Other Math Subjects (College Level)</td>
</tr>
<tr>
<td>Any STEM</td>
<td>Developmental Math</td>
</tr>
</tbody>
</table>

Key Takeaways

1) Findings point to 4 key indicators of STEM Momentum:

2) **STEM Momentum benefits students**: Correlation with longer-term STEM outcomes reliable across states and student subgroups.
   - Paper further tests findings among subgroups of students who may be STEM-intending

3) Findings provide *cross-validation* of faculty-recommended courses on state transfer pathways
   - STEM indicators appear to capture momentum beyond signaling STEM intent
   - Roadmap for operationalizing transfer program momentum in other fields beyond STEM?

4) *Few students gain STEM Momentum*: Gender & racial/ethnic gaps present in access to/completion of STEM Momentum courses in year 1
Transfer Pathway Courses Help Students Gain Program Momentum

STEM Bachelor's Completion Rates in 6 years (State A)

- All transfer-intending community college entrants: 3%
- Completed 24+ college credits in year 1: 9%
- Completed calculus foundation in year 1: 16%
- Completed STE foundation in year 1: 7%
- Completed calculus in year 1: 26%
- Completed STE pathway in year 1: 24%

Benefits of Early STEM Momentum Reliable across Student Groups

STEM Bachelor's Completion Rates in 6 years (State A)

- (Baseline) All transfer-intending CC entrannts
- Students who completed calculus in year 1
- Students who completed STE pathway in year 1

Pre-Reqs to State Transfer Pathway Courses

State Transfer Pathway Courses

Few Students Gain STEM Momentum, Equity Gaps Present Early

Disaggregated Completion of STEM Coursework in Year 1 at Community College (State A)

- Calculus foundations
- STE foundation
- Calculus
- STE Pathway

From "Random Acts" and "Programs of Privilege" to Dual Enrollment Equity Pathways
1. Conventional approach to dual enrollment has resulted in inequitable access and earned the monikers of “Programs of Privilege” and “Random Acts of DE”

2. Dual enrollment has great potential but is currently underutilized as strategy to expand access to high-opportunity postsecondary pathways

3. Exclusionary policies, practices, and mindsets have resulted in inequitable access to dual enrollment courses

4. Improvement is possible – and essential to further expanding opportunity for students and building back enrollments for colleges
AP and Dual Enrollment/Credit are the most common college acceleration opportunities for high school students, with an estimated 1.6 to 2 million students participating in 2019-20.

**AP eximinees:**
- 2002–03: 1,017,396
- 2010–11: 2,483,452
- 2014–15: 2,611,172
- 2015–16: 1,973,545

**Number of high school students taking DE—All subjects:**
- 2002–03: 680,000
- 2010–11: 1,363,500

**Early college high school students:**
- 2002–03: 80,000

**IB U.S. diploma candidates:**
- 2002–03: 59,734
- 2010–11: 76,554

**Source:** College Board, 2017, p. 9, Figure 1. (Figure A1 reproduces all data from the original figure.)

**Note (from original figure):** National enrollment data do not exist for DE and CTE beyond 2010–11.
Growth of Dual Enrollment 1999-2019
IPEDS Fall Enrollments

Fall Undergraduate Enrollments among Students Aged 17 or Younger

Expansion of Dual Enrollment Concentrated at Community Colleges
2017-18 High School Student Participation in Dual Enrollment by School District

DE-Participation Rate
- Less than 0.1%
- 0.1% to 4.0%
- 4.0% to 11.0%
- 11.0% to 20.3%
- 20.3% or more

View an interactive map:
https://ccrc.tc.columbia.edu/easyblog/ap-dual-enrollment-access-update.html

Source: CCRC analysis of US Dept. of Education Office for Civil Rights data
2017-18 High School Student Participation in Advanced Placement by School District

AP-Participation Rate
Less than 0.1%
0.1% to 4.0%
4.0% to 11.0%
11.0% to 20.3%
20.3% or more

Source: CCRC analysis of US Dept. of Education Office for Civil Rights data
Dual Enrollment: 16% of 2019 Community College Fall Enrollment

CCRC analysis of IPEDS Fall Enrollments among students age 17 and younger at community colleges, divided by total fall enrollments.
Findings on the Effects of HS Dual Enrollment

- Accumulation of descriptive and quasi-experimental evidence for dual enrollment, stronger experimental evidence on effects of ECHS

- **WWC Report**: Positive effects of taking college courses in HS include stronger HS grades, more HS completion, more college enrollment, more credit accumulation, more degree completion.

White high school students participated in DE at about $2x$ the rate of Black & Hispanic high school students.

Source: CCRC analysis of 2017-18 Civil Rights Data Collection data

Is Representation in Dual Enrollment Proportionate?

CCRC Analysis of 2017-18 CRDC Data, N=21,936 public secondary schools in 50 states + DC.

DE Representation Gap: US Overall

Students Served under IDEA:
- 12.7% of secondary population
- 3.9% of DE Students
- **-8.8 DE representation gap**

English Language Learners:
- 6.2% of secondary population
- 2% of DE Students
- **-4.1 DE representation gap**

CCRC Analysis of 2017-18 CRDC Data, N=21,936 public secondary schools in 50 states + DC.
Substantial national variation in racial equity gaps in DE participation among US school districts…

…but one in five school districts across the country have closed racial equity gaps in access to dual enrollment courses

Source: CCRC analysis of US Dept. of Education Office for Civil Rights data
Findings on the Effects of HS Dual Enrollment

- Accumulation of descriptive and quasi-experimental evidence for dual enrollment, stronger experimental evidence on effects of ECHS
- WWC Report: Positive effects of taking college courses in HS include stronger HS grades, more HS completion, more college enrollment, more credit accumulation, more degree completion.
- Substantial state and institutional variation in post-HS college outcomes among former DE students (Fink, Jenkins, & Yanagiura, 2017)
Variation in post-HS college outcomes among former community college dual enrollment Students

Where and if students attend college,

Whether and what type of credential they complete,

and the magnitude of equity gaps in completion rates.

See findings for your state here: https://ccrc.tc.columbia.edu/dual-enrollment.html

(Fink, Jenkins, & Yanagiura, 2017)

- NSC data on 1.4 million first-time community college students in fall 2010
- DE definition: First-time students age 17 or younger (N=214k)
What can be learned from high schools and colleges that are more effective in serving students of color through dual enrollment?
Playbook Overview

- Quantitative Research: Analysis of statewide data from FL, OH, and WA to identify high school-community college pairings with above-average participation rates and strong outcomes for historically underrepresented students of color*
- Screening Calls: Phone calls with potential sites identified through quantitative research
- Fieldwork: 9 site visits in FL, OH, and WA to colleges, high schools, and district offices**

* Included Black/African American, Hispanic/Latinx, American Indian, Native Hawaiian, Pacific Islander, and Alaska Native students
** Two visits conducted remotely due to the pandemic
The Dual Enrollment Playbook: A Guide to Equitable Acceleration for Students
Playbook Resources

Highlights from the Dual Enrollment Playbook: A Guide to Equitable Acceleration for Students

A Guide to Getting Started for Institutional Leaders

Tool for Evaluating Equitable Practices at Community Colleges

Tool for Evaluating Equitable Practices at High Schools

https://highered.aspeninstitute.org/dual-enrollment/