Central Florida Education Ecosystem Database: Innovative Educational Analysis and Research

DIANA PIENAAR
CFEED Director,
Valencia
College

ASHTON TERRY
CFEED Senior Manager,
The School District of
Osceola County, Florida

FLBUG

CFEED

Presentation Agenda

-How CFEED Came to Life

-How CFEED Gets the Data

-Innovative CFEED Research:

- Middle School Acceleration
- Post-Secondary Readiness Model
- Dual Enrollment
- Osceola Prosper
- Post-Secondary Progression
- Valencia-to-UCF Transfer Readiness
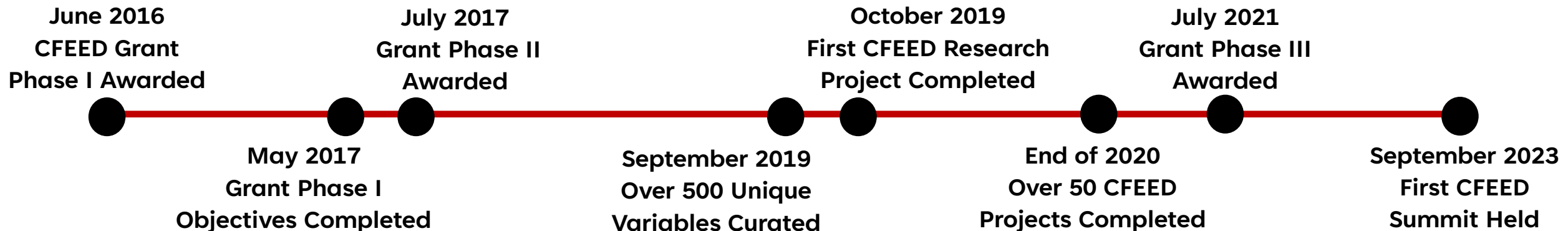- Chronic Absenteeism

-Q&A / Feedback

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How CFEED Came to Life

-In 2016, Helios Education Foundation provided the first of three grant phases (we are working towards number four) to allow partnering institutions in Central Florida to develop a vision, research questions, evaluation model, and technical solution to study student performance from K-12 to post-secondary levels.

-Since the birth of CFEED, the team has developed two machine learning models using Microsoft Azure and Power BI technology, curated over 500 unique analysis variables, published and delivered around 150 requested research projects, and presented our findings at several professional conferences. Last month, we hosted our first CFEED Summit at Valencia College.
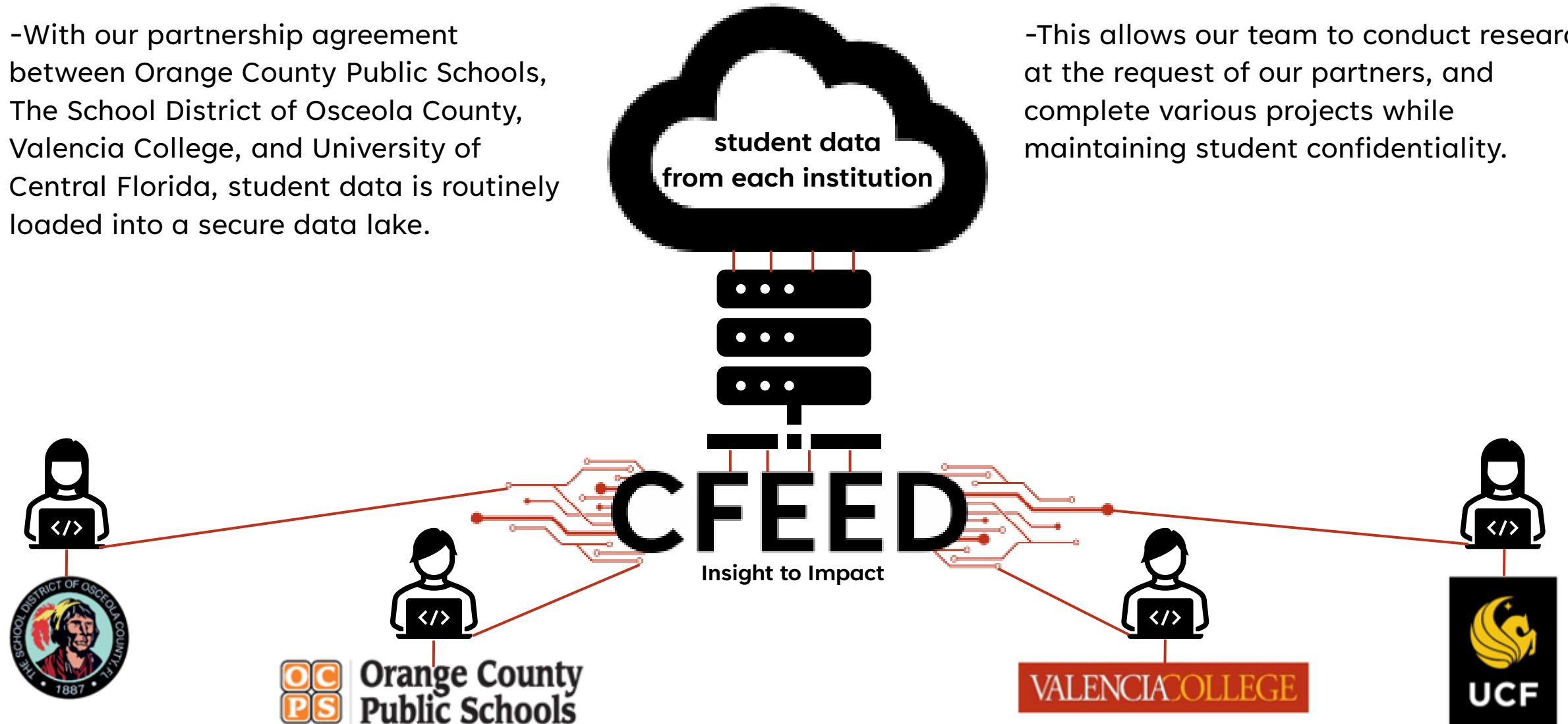
June 2016
CFEED Grant
Phase I Awarded

May 2017
Grant Phase I
Objectives Completed

July 2017
Grant Phase II
Awarded

September 2019
Over 500 Unique
Variables Curated

October 2019
First CFEED Research
Project Completed

End of 2020
Over 50 CFEED
Projects Completed

July 2021
Grant Phase III
Awarded

September 2023
First CFEED
Summit Held

How We Get the Data

-With our partnership agreement between Orange County Public Schools, The School District of Osceola County, Valencia College, and University of Central Florida, student data is routinely loaded into a secure data lake.

-This allows our team to conduct research at the request of our partners, and complete various projects while maintaining student confidentiality.

student data from each institution

CFEED

Insight to Impact

THE SCHOOL DISTRICT OF OSCEOLA COUNTY, FL · 1887

OCPS | Orange County Public Schools

VALENCIA COLLEGE

UCF

Innovative CFEED Research:
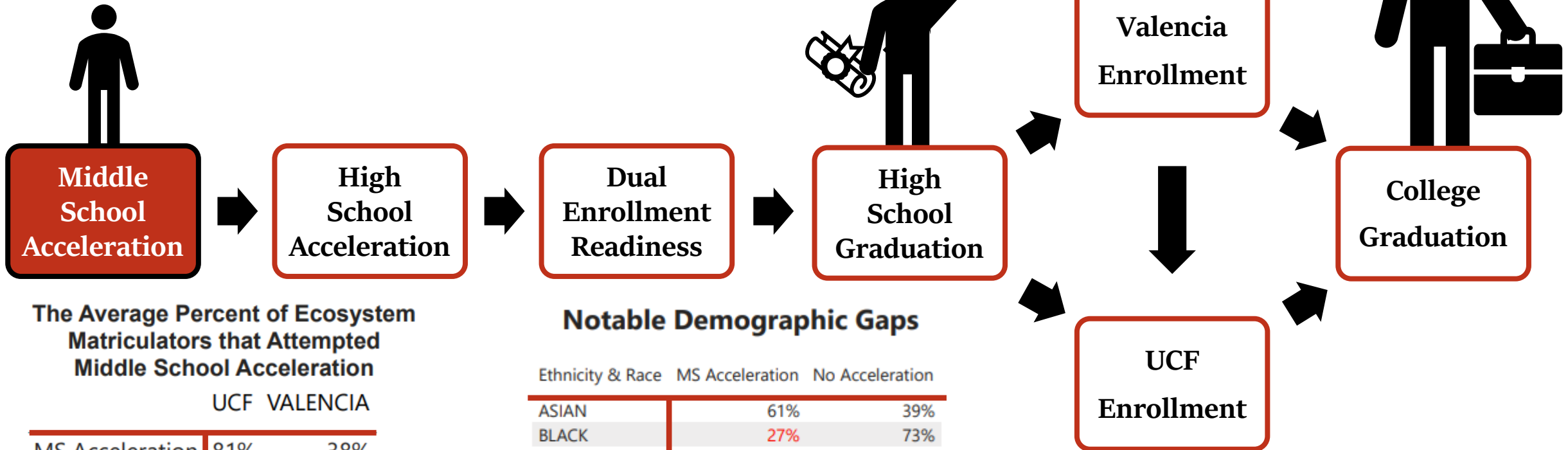
Middle School Acceleration

Key Result of this Research:

We found that four out of five students in our ecosystem who matriculate to UCF were accelerated in middle school by taking high school courses.

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-CFEED knows which students have been able to accelerate as early as middle school. Middle school acceleration is key for continued success in high school and post-secondary education.

Middle School Acceleration → **High School Acceleration** → **Dual Enrollment Readiness** → **High School Graduation** → **Valencia Enrollment** → **College Graduation**

UCF Enrollment

The Average Percent of Ecosystem Matriculators that Attempted Middle School Acceleration

	UCF	VALENCIA
MS Acceleration	81%	38%

*The trends suggest that Middle School Acceleration is a requirement for competitive entry schools

Notable Demographic Gaps

Ethnicity & Race	MS Acceleration	No Acceleration
ASIAN	61%	39%
BLACK	27%	73%
HISPANIC	28%	72%
OTHER	50%	50%
WHITE	53%	47%
Total	**36%**	**64%**

Definition:
MS Acceleration - a student takes at least 1 accelerated course during grades 6-8.
These are courses that are either high school honors, (pre) AICE, (pre) IB (or IB Mid-years), or AP courses.

Innovative CFEED Research:

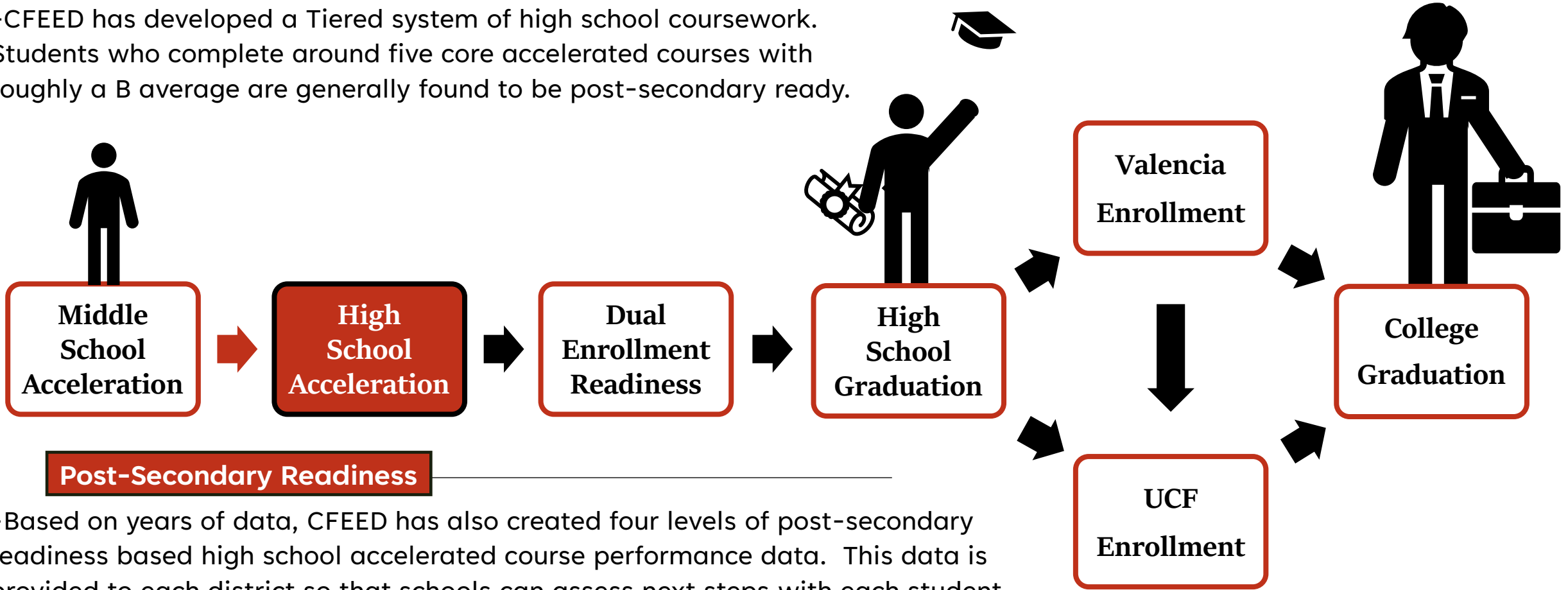# The CFEED Post-Secondary Readiness Model

Key Result of this Research:

CFEED used algorithms from high school curriculum to identify each student's post-secondary readiness based on performance in accelerated core classes.

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-CFEED has developed a Tiered system of high school coursework. Students who complete around five core accelerated courses with roughly a B average are generally found to be post-secondary ready.

| Middle School Acceleration | → | High School Acceleration | → | Dual Enrollment Readiness | → | High School Graduation |

Valencia Enrollment → **College Graduation**

UCF Enrollment

Post-Secondary Readiness

-Based on years of data, CFEED has also created four levels of post-secondary readiness based high school accelerated course performance data. This data is provided to each district so that schools can assess next steps with each student.

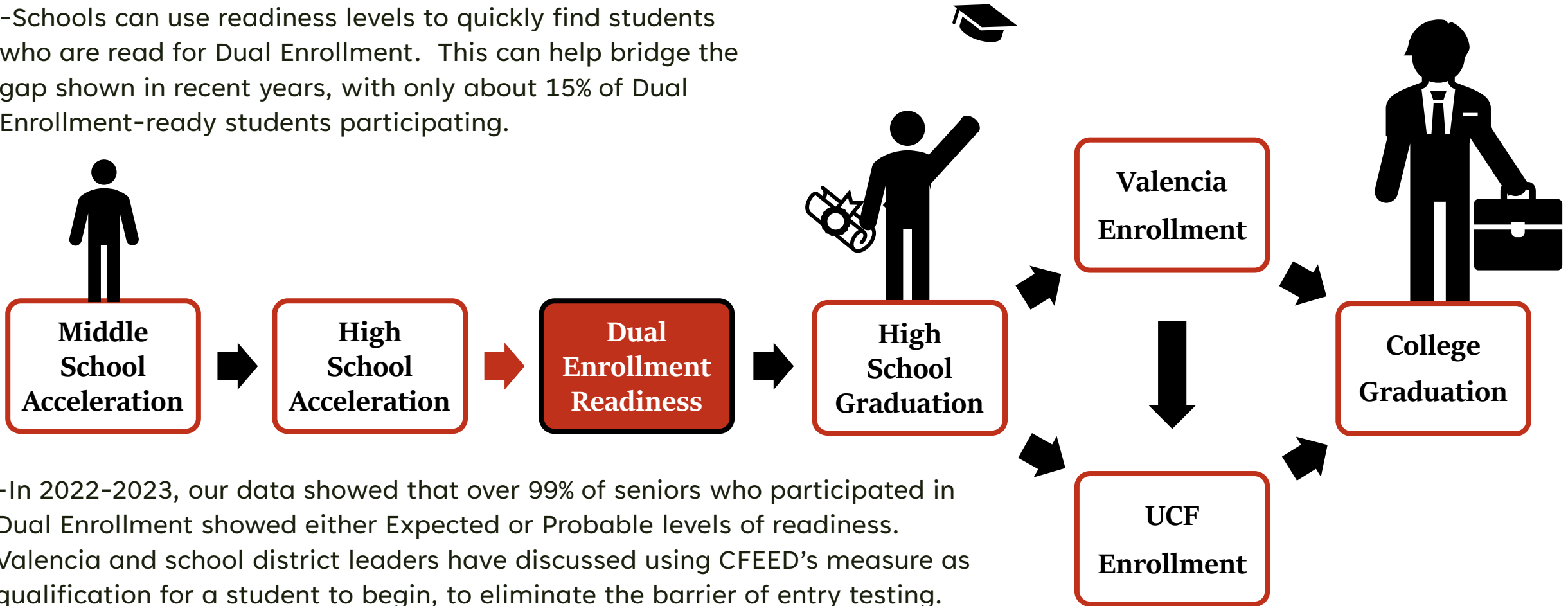| POST-SECONDARY READINESS LEVEL	EXPECTED		PROBABLE		APPROACHING		BEGINNING	
TIER I COURSE ATTEMPTS	Attempts	Avg GPA	Attempts	Avg GPA	Attempts	Avg GPA	Attempts	Avg GPA
AVERAGE ATTEMPTS/GPA PER COURSE	535	3.6	699	3.0	424	1.9	57	1.2

Expected or Probable	READY
Approaching or Beginning	NOT YET READY

Innovative CFEED Research:
Dual Enrollment

Key Results of this Research:

-CFEED created an interactive dashboard to help districts and schools identify students ready for further acceleration.

-99% of students placed into Dual Enrollment by their respective district were post-secondary ready according to our model.

-One in two students who attend UCF from our ecosystem have taken at least one Dual Enrollment Course.

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-Schools can use readiness levels to quickly find students who are read for Dual Enrollment. This can help bridge the gap shown in recent years, with only about 15% of Dual Enrollment-ready students participating.

Middle School Acceleration → High School Acceleration → **Dual Enrollment Readiness** → High School Graduation → Valencia Enrollment / UCF Enrollment → College Graduation

-In 2022-2023, our data showed that over 99% of seniors who participated in Dual Enrollment showed either Expected or Probable levels of readiness. Valencia and school district leaders have discussed using CFEED's measure as qualification for a student to begin, to eliminate the barrier of entry testing.

2022-2023 Projected CFEED High School Seniors			
DE Enrollment Count	DE Readiness Count of DE Enrolled Students	DE Not Ready Count of DE Enrolled Students	Readiness Percentage of DE Enrolled Students
1,358	1,347	11	99.2%

The Percent of Ecosystem Matriculators that Attempted at Least One Dual Enrollment Course

Dual Enrollment Indicator	UCF	VALENCIA
Dual Enrollment	51%	23%

-With CFFED's exportable interactive dashboard, the capability exists to ensure each high school in OCPS and SDOC has this information at their fingertips. For schools who focus more on Advanced Placement, or students who do not wish to enroll in Dual Enrollment, we are also able to identify students at each readiness level who have not yet taken AP or DE courses.

Expected High School Graduation Year
2023

Entering Senior Student Count
4,714

Post-Secondary Readiness: EXPECTED
10%

Post-Secondary Readiness: PROBABLE
35%

Post-Secondary Readiness: APPROACHING
36%

Post-Secondary Readiness: BEGINNING
18%

PS Prediction : PROBABLE
Osceola High School
White   Male   GPA : 3.57

Tier 1 Course	Grade
CHEMISTRY 1 HONORS	A
ENGLISH HONORS 4	A
UNITED STATES HISTORY HONORS	A
BIOLOGY 1 HONORS	B
GEOMETRY HONORS	B
ENGLISH HONORS 3	C

AP

AP and DE

No AP of DE

DE

Students who are ready for acceleration via AP/DE but not yet participating.

Innovative CFEED Research:
Osceola Prosper

Key Results of this Research:

-With CFEED findings helping inform decision-making, Osceola Prosper was born in 2022 accounting for more than half of new matriculators to Valencia College.

-Osceola Prosper has added over 1,100 new students to Valencia in 2023.

-Our data shows that Osceola Prosper students have greater risk of attrition compared to other Valencia students.

-Osceola Prosper was born in 2022 after extensive collaboration between Valencia College, Osceola County Commissioners, and The School District of Osceola County. These leaders utilized a variety of data in their decision-making, including CFEED research which showed years of decline in enrollment in Valencia. Goals of this program were to increase matriculation to Valencia, and to find a way for students to earn an Associate's Degree with zero student loan debt.

-Every student who graduates from SDOC, including public, private, charter, and home school, is eligible for Osceola Prosper. The program allows these high school graduates to attend Valencia College or Osceola Technical College for free and does not include any test score or GPA requirements.

Matriculation to Valencia by OCPS and SDOC graduates, 2014-2021
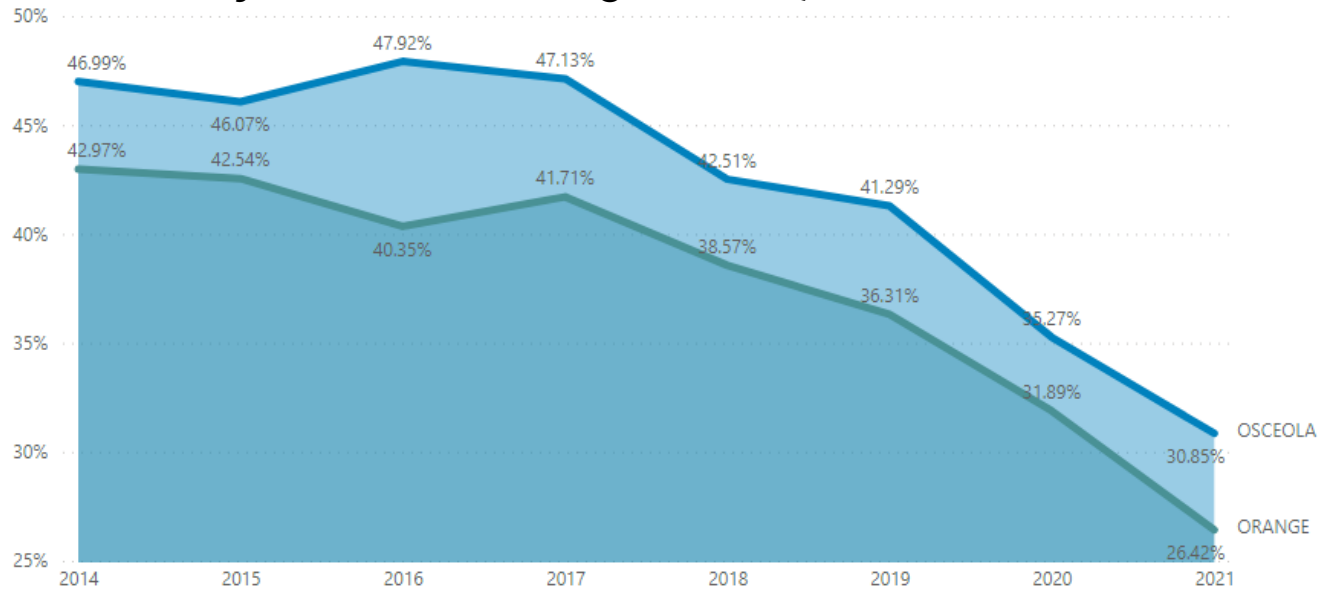
Matriculation to Valencia by OCPS and SDOC graduates, 2014-2021

Graduation Progression Group	2019 Student Count	2021 Student Count	Decrease by Progression Group
0-14 Credits	5,502	3,707	1,795
15-29 Credits	4,444	2,512	1,932
30-44 Credits	3,618	1,331	2,287
45-59 Credits	2,905	642	2,263
60+ Credits	2,319	390	1,929
TOTALS	18,788	8,582	10,206

-Osceola Prosper has successfully increased matriculation into Valencia College. As our research shows that Osceola Prosper students have greater risk rates than other matriculators, a next step is to provide ongoing support to these students.

Success Risk	Osceola Prosper Direct Matriculator		Other Direct Matriculator	
	Count	Prct	Count	Prct
1. High Risk	344	30.55%	549	18.21%
2. Medium Risk	457	40.59%	972	32.24%
3. Low Risk	325	28.86%	1,494	49.55%
Total	1,125	100.00%	3,015	100.00%
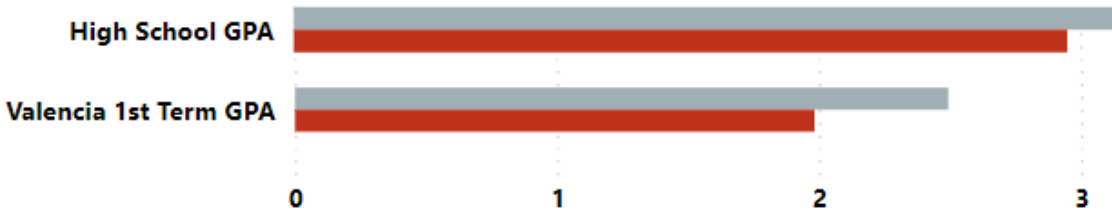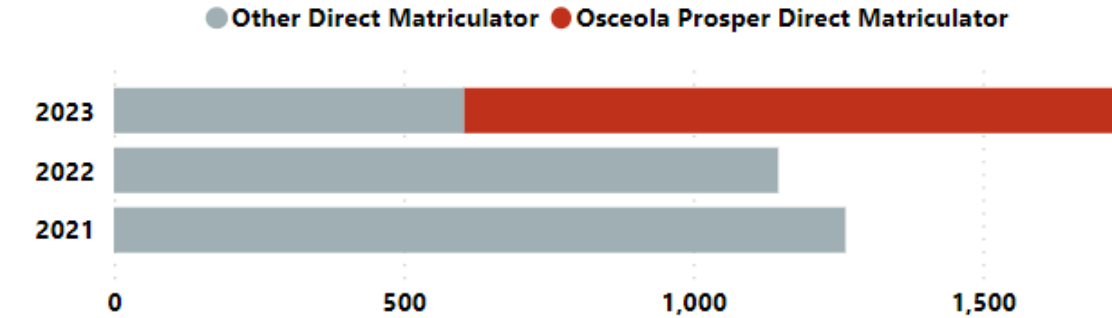
Cause for Celebration:
-Direct matriculation from SDOC into Valencia increased by 679 students which is a 44% increase from academic years 2021 and 2022.

-CFEED has identified 1,126 Osceola Prosper Scholarship students who directly matriculated from SDOC core high schools into Valencia. These students graduated from SDOC in 2022 and began coursework at Valencia in 2023.

Potential Next Steps:
-The Osceola Prosper direct matriculators show a 0.53-point decrease in their Valencia 1st term GPA compared to other direct matriculators.

-This same cohort of students are needing more support to complete their AA or AS program. There are 344 students who directly matriculated under the Prosper program that are "High Risk" of attritting from Valencia.

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-As we have had success aligning course patterns to progression at Valencia, CFEED is closely monitoring common course enrollments among Osceola Prosper cohorts.

-CFEED is also able to embed demographic data as we track Osceola Prosper progress. As shown, we can explore enrollment by gender and ethnicity, tying in academic background such as our post-secondary readiness measure, high school GPA, etc.

Top 10 Most Common Course Enrollments by the Graduation Class of 2022 attending Valencia via Osceola Prosper

Course Title	Enrollment Count	Percent of Cohort
Freshman Comp I	260	18%
New Student Experience	255	17%
Freshman Comp II	193	13%
College Algebra	174	12%
U.S. Government	151	10%
Intro to Humanities	144	10%
Fundamentals of Speech	134	9%
Intermediate Algebra	121	8%
General Psychology	94	6%
U.S. History 1877 to Present	88	6%

Academic/Demographic Trends within the Graduation Class of 2022 attending Valencia via Osceola Prosper

Ethnicity / Gender	Student Count	Percent of Cohort	Post-Secondary Readiness %	Average HS GPA
Female	838	59%	79%	3.2
Male	597	41%	63%	2.9
Asian	49	6%	76%	3.2
Black	132	6%	46%	2.9
Hispanic	960	67%	55%	3.1
White	222	>1%	77%	3.2
Other Ethnicity	74	>1%	57%	3.1

Innovative CFEED Research:
# Post-Secondary Progression

Key Result of this Research:

CFEED has conducted course progression research that can create successful scheduling patterns at Valencia, even for students not at a high readiness level.

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-We have conducted deep dives into effects from initial coursework taken at Valencia. By finding successful course patterns of students entering Valencia not yet ready for post-secondary coursework, more students can have an opportunity to progress at the school.
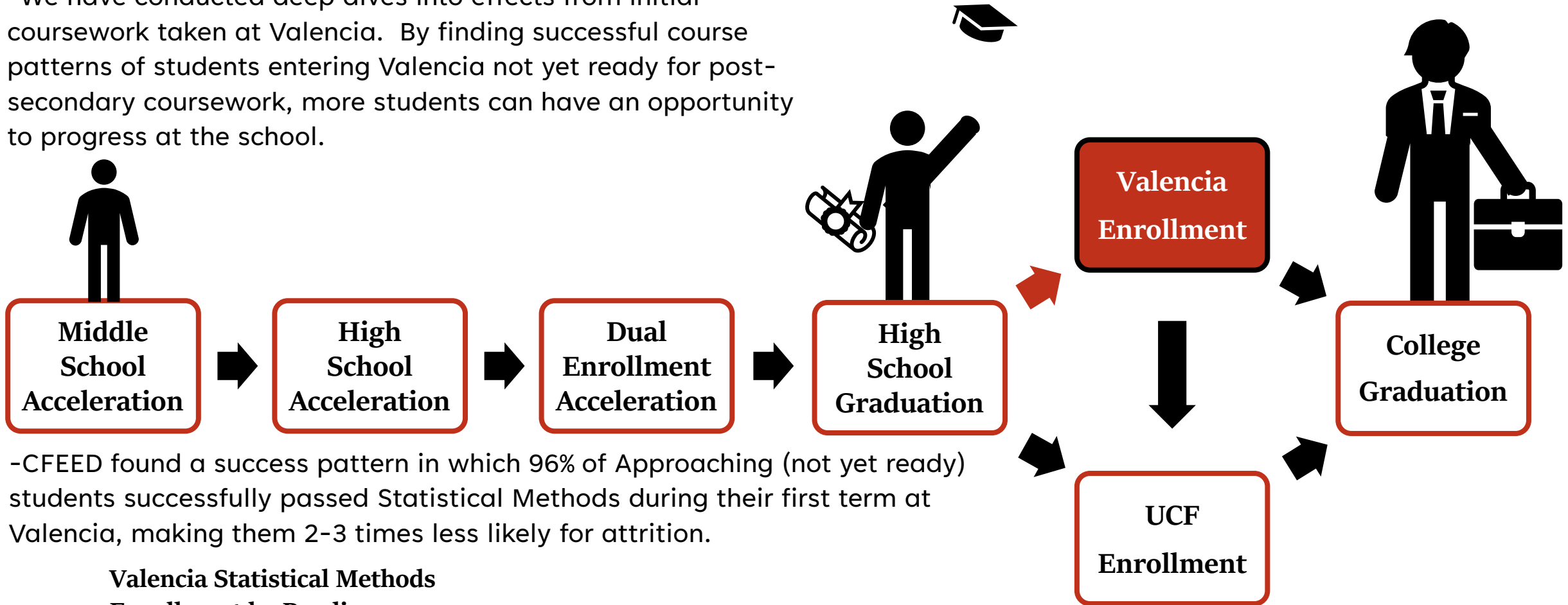
-CFEED found a success pattern in which 96% of Approaching (not yet ready) students successfully passed Statistical Methods during their first term at Valencia, making them 2-3 times less likely for attrition.

Middle School Acceleration → **High School Acceleration** → **Dual Enrollment Acceleration** → **High School Graduation** → **Valencia Enrollment** → **College Graduation**

UCF Enrollment

Valencia Statistical Methods Enrollment by Readiness Group-401 total students

Did not Pass Course
Passed Course

Expected	Probable	Approaching	Beginning
100% (232 students)	96% (137 students)	96% (25 students)	100% (1 student)
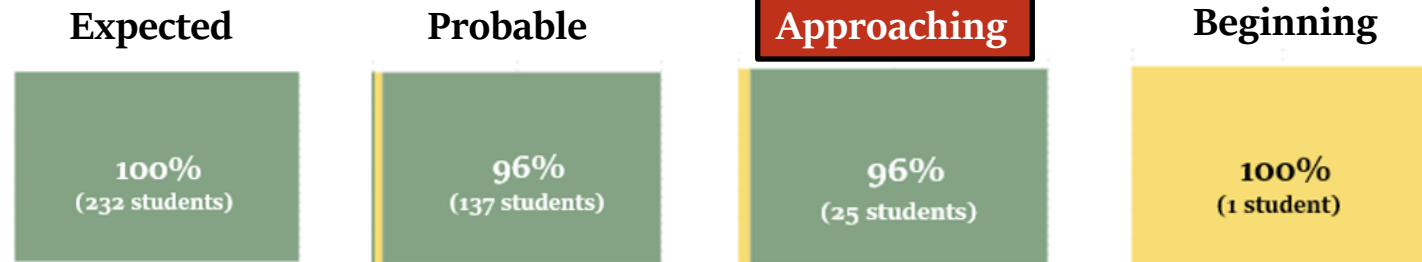
Innovative CFEED Research:

Valencia-to-UCF Transfer Readiness Dashboard

Key Result of this Research:

CFEED has aligned course history and performance of expected transfers from Valencia to UCF to relevant programs of study for each student.

Central Florida Education Ecosystem Database:
Innovative Educational Analysis and Research

-CFEED has produced a model of Valencia to UCF transfer readiness by measuring the alignment of course history to a student's selected program. This information can be used to provide additional support to students to best prepare for the transition to UCF. As only 18% of Fall 2023 transfers were fully ready for their selected program, many opportunities for intervention exist.

-CFEED has also developed a method to align relevant programs for Valencia to UCF transfer students who have not yet decided on a program of study. There is potential to help thousands of students align more closely to a program of study at UCF.

Transfers for Fall 2023 (1,631 Students)
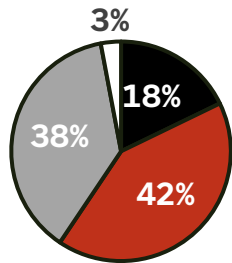
- ■ **Fully Ready for Selected Program**
- ■ **Partially Ready for Selected Program**
- ☐ **Not Ready for Selected Program**
- ☐ **Not Ready for Any Program**

Innovative CFEED Research:
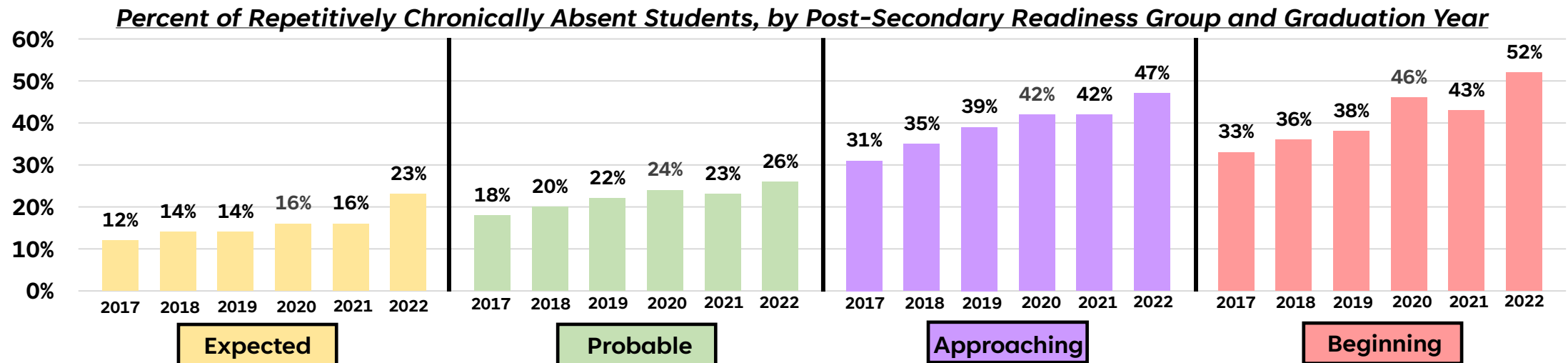# Chronic Absenteeism

Key Results of this Research:

-Of students expected to graduate in 2022, one in three were repetitively chronically absent during their K-12 academic career (ten or more absences in at least four school years).

-CFEED found ties to chronic absenteeism and academic performance. About 25% of post-secondary ready students were repetitively chronically absent, while about 50% students not yet ready for college coursework were repetitively chronically absent.

-CFEED's findings show an increasing trend of Repetitively Chronically Absent students within Central Florida (ten or more absences in at least four school years).

Expected Graduation Year	2017	2018	2019	2020	2021	2022
0 to 3 Years of Chronic Absences	77%	75%	72%	71%	71%	67%
4 or More Years Chronically Absent	23%	25%	28%	29%	29%	33%

-CFEED also found a noticeable relationship between chronic absenteeism and low academic performance. Of students expected to graduate in 2022, around 25% of students who were ready for post-secondary coursework (Expected or Probable groups) were Repetitively Chronically Absent, compared to 50% of students who were not ready (Approaching or Beginning). The CFEED team plans to do further research surrounding attendance in the future.

Percent of Repetitively Chronically Absent Students, by Post-Secondary Readiness Group and Graduation Year

Expected: 2017 12%, 2018 14%, 2019 14%, 2020 16%, 2021 16%, 2022 23%

Probable: 2017 18%, 2018 20%, 2019 22%, 2020 24%, 2021 23%, 2022 26%

Approaching: 2017 31%, 2018 35%, 2019 39%, 2020 42%, 2021 42%, 2022 47%

Beginning: 2017 33%, 2018 36%, 2019 38%, 2020 46%, 2021 43%, 2022 52%

Q&A / Feedback?

-Thank you for attending this session. Please reach out anytime if you have questions or if CFEED can be of service to your organization!

Questions about this CFEED Presentation?

- **Diana Pienaar** – dpienaar@valenciacollege.edu

- **Ashton Terry, Sr.** – ashton.terry@osceolaschools.net

- **Michael Holt** – mholt@midtowncg.com