## **Retention and Student Success** Beyond Retention - The Effectiveness and Measurement of Student Engagement

### Charge:

Engage students in assessment process

#### Timeline:

SummerStart cohorts from 2020 through 2024

#### Role:

Support creation of reports from early alert data. Utilize students using best practices to analyze large data sets.

### Goals

Enhance the assessment and use of the early alert system (EAS) and related outcomes

- . Better understand the differences between selected flags and grade outcome
- 2. Measuring the effectiveness of Orange Success Engagement

### Questions

- Does HS GPA correlate with SummerStart GPA performance?
- What is the relationship between student engagement and earned course grades?



#### **Retention and Student Success**

Summer 202<sup>2</sup>

Summer 2022 Summer 2023 Summer 2024 Prabin Raj Shrestha '24 Hope Smalling, Ed.S.

### **Measurement of Student Engagement**

### Scope and Tools

**Timeline:** Summer 2020 through Summer 2024 Scope of data:

- Early alert data (flags/kudos)[Summer '20 to Spring '24]
- OS Appointment data [Summer '20 to Spring '24]

#### Tools used:

- Python: data processing, data modeling
- R: data modeling
- Excel/Tableau: visualization, data exploration

### Early Alert Data Summary

**Content:** "Tracking" data including flags/kudos • The EAS system features 178 flags

- Flags: academic/behavioral concerns
- **Kudos:** academic/behavioral compliments • Filtered scope: 7 select flags/kudos - Summer '20 -
- Summer '24 + appointment data (N) = 90,235 rows • Data integration: flag data is merged with grades
- data at student X course X term level

### **High School GPA**

Term	Mean	Median	SD	Min	Max
Summer 2020	3.60	3.63	0.37	2.65	4.33
Summer 2021	3.47	3.50	0.59	0.00	4.25
Summer 2022	3.49	3.48	0.40	2.29	4.32
Summer 2023	3.44	3.39	0.35	2.35	4.22
Summer 2024	3.51	3.47	0.38	2.62	4.31
Overall	3.50	3.49	0.43	0.00	4.33

### SummerStart GPA

	Moon	Min	ΝΛΛΥ	Std Dov	Coefficient
Torm Namo	GDA	GPA	GDA	GDA	variation
Territiname	UFA	UFA	GFA	GFA	variation
Summer 2020	3.36	0.00	4.00	0.66	0.20
Summer 2021	3.39	0.00	4.00	0.71	0.21
Summer 2022	3.32	0.79	4.00	0.72	0.22
Summer 2023	2.96	0.00	4.00	1.04	0.35
Summer 2024	3.50	0.52	4.00	0.67	0.19

Dr. Vincent Tinto





Measures	SummerStart Cohort					
	2020	2021	2022	2023	2024	
Flags	59%	63%	61%	70%	58%	
Kudos	41%	37%	39%	30%	42%	
Unique Appts	4,888	6,668	6,067	4,869	3,049	
SummerStart 1st Year Retention	98.00%	97.70%	100.00%	93.38%		
Average Class 1st Year Retention	90.50%	90.70%	91.20%	90.10%		
%difference	7.50%	7.00%	8.80%	3.28%		
SummerStart 4 Year Graduation Rate	78.00%					
Average Class 4 Year Graduation Rate	73.00%					
%difference	5.00%					

# "Retention is a byproduct of a great educational experience."

Kal Srinivas, Ph.D.; Radell Roberts; ShawnMarie Parry; Samantha Trumble; Hopeton Smalling, Ed. S.

### **Regression between HS GPA and SummerStart GPA**

OLS Regression Results							
Dep. Variable:		Summer Cur Gpa	a R-sq	uared:		0.063	
Model:		OLS	S Adj.	R-squared:		0.062	
Method:		Least Squares	s F-st	atistic:		41.59	
Date:		Fri, 13 Dec 202	4 Prob	(F-statistic):		2.27e-10	
Time:		21:24:0	8 Log-	Likelihood:		-720.67	
No. Observatio	ns:	620	AIC:			1445.	
Df Residuals:		613	B BIC:			1454.	
Df Model:		-	1				
Covariance Typ	e:	nonrobust	t				
	coef	std err	t	P> t	[0.025	0.975]	
const	1.6704	0.254	6.571	0.000	1.171	2.170	
HS GPA	0.4654	0.072	6.449	0.000	0.324	0.607	
Omnibus:		206.66	8 Durb	in-Watson:		1.853	
Prob(Omnibus):		0.00	0 Jarq	ue-Bera (JB):		577.150	
Skew:		-1.66	3 Prob	(JB):		4.72e-126	
Kurtosis:		6.35	8 Cond	. No.		31.1	

R-squared (0.063): Only 6.3% of the variation in SummerStart GPA is explained by HS GPA. This indicates that while there is a statistically significant relationship, HS GPA is not a strong predictor of SummerStart GPA, but could be different in future terms