

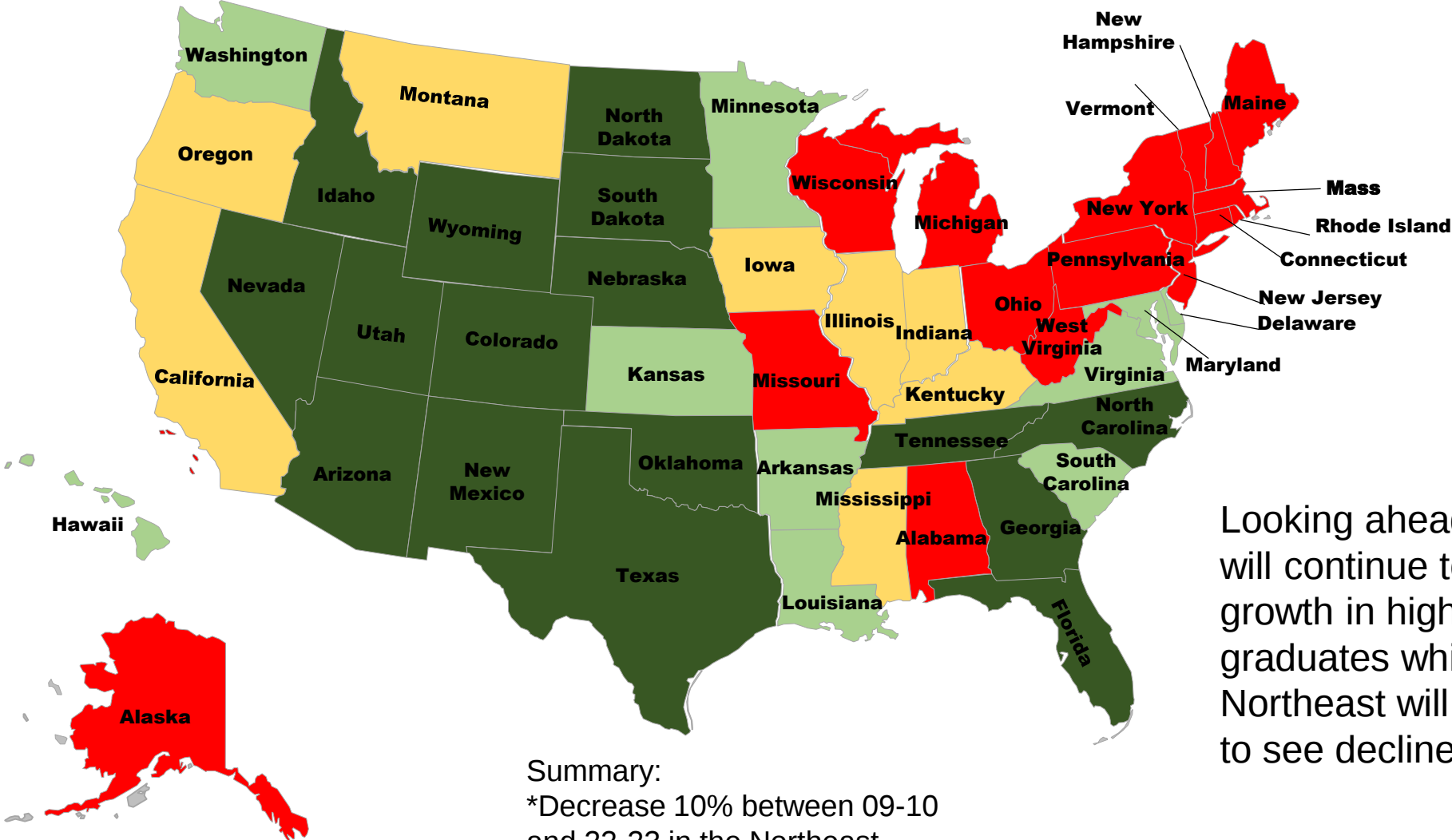
2014 Enrollment Report

*Actuals, Projections & Future
Considerations*

*Presented to
Enrollment Management Working Group
October 27, 2014*

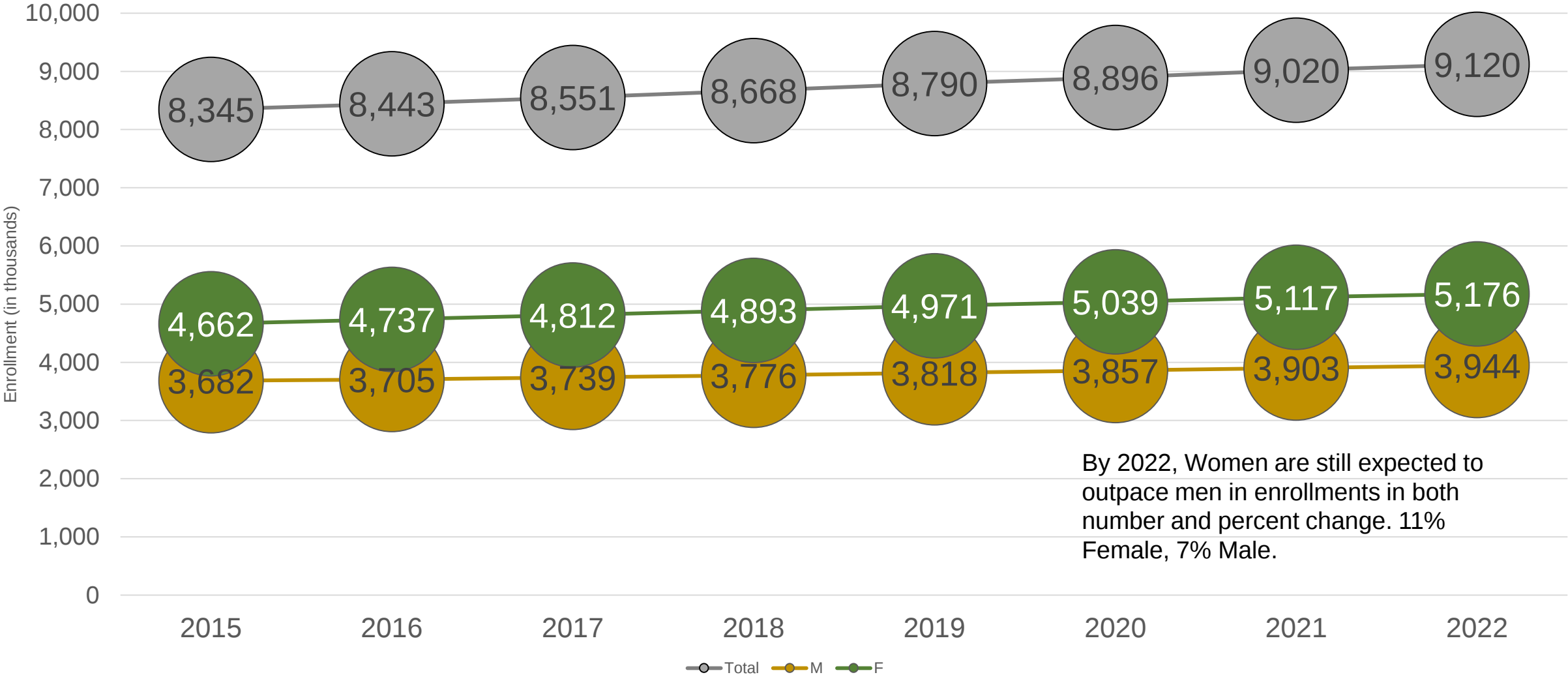
*Dr. Lisa Castellino
Office of Institutional Research & Planning*

Projected percentage change in the number of public high school graduates by state: School years 2009-10 through 2022-23

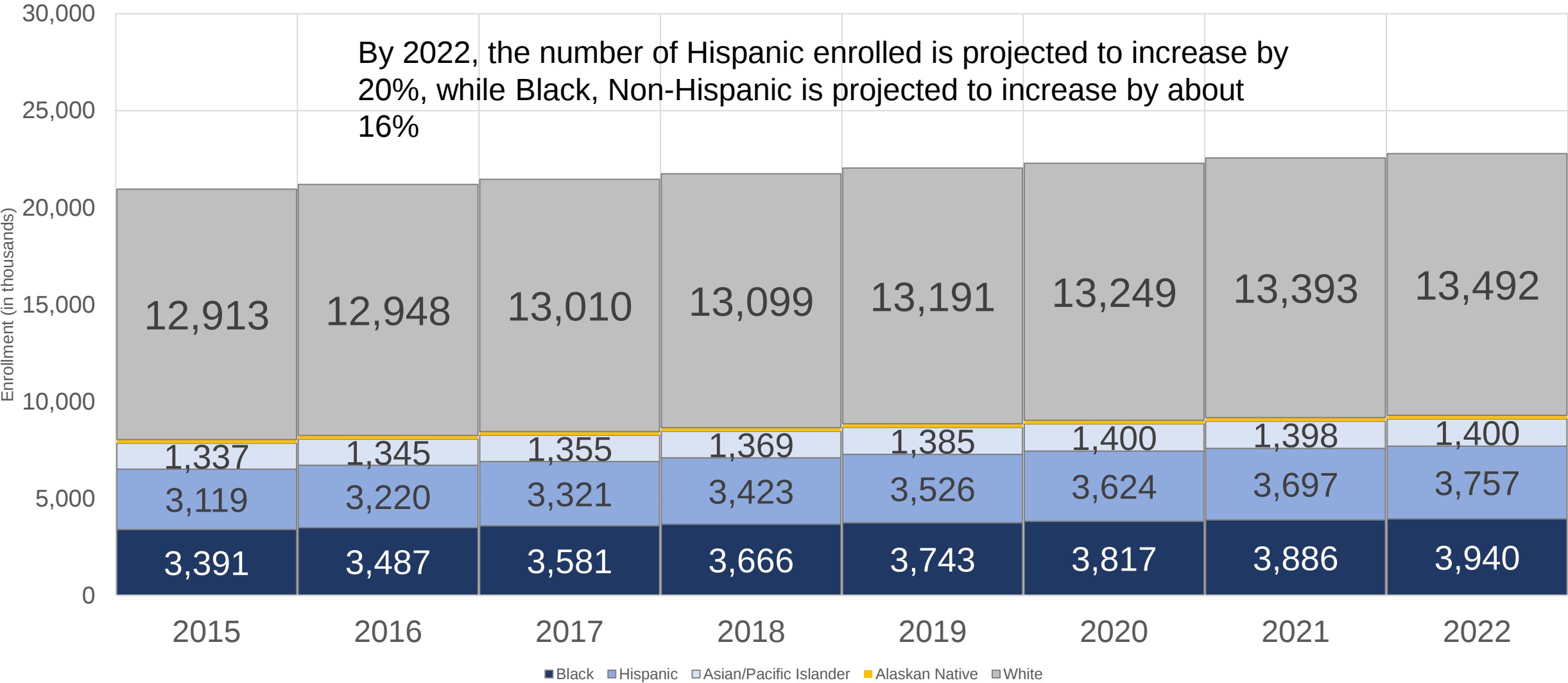


Looking ahead, the West will continue to see growth in high school graduates while the Northeast will continue to see declines.

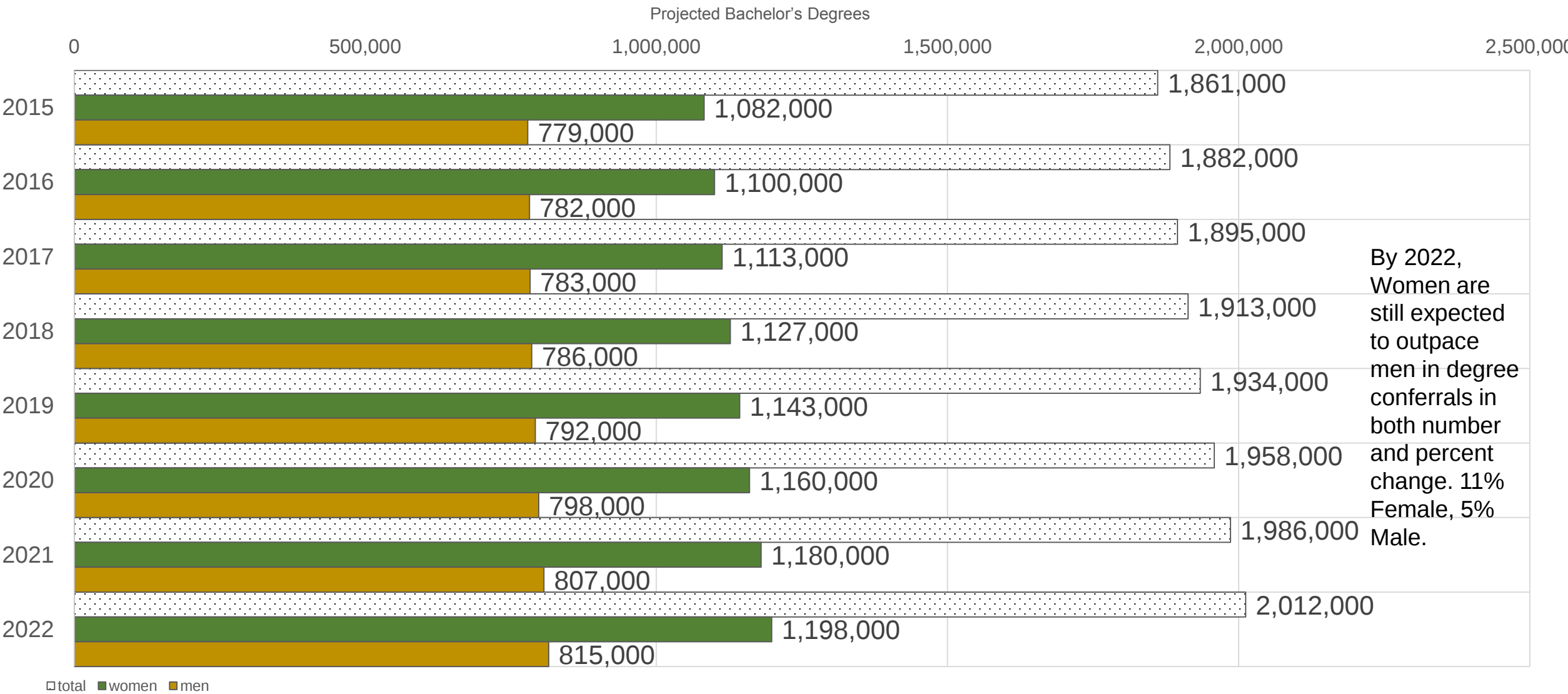
Projected numbers for enrollment in PUBLIC 4-year postsecondary degree-granting institutions



Projected numbers for enrollment in ALL postsecondary degree-granting institutions: Ethnicity



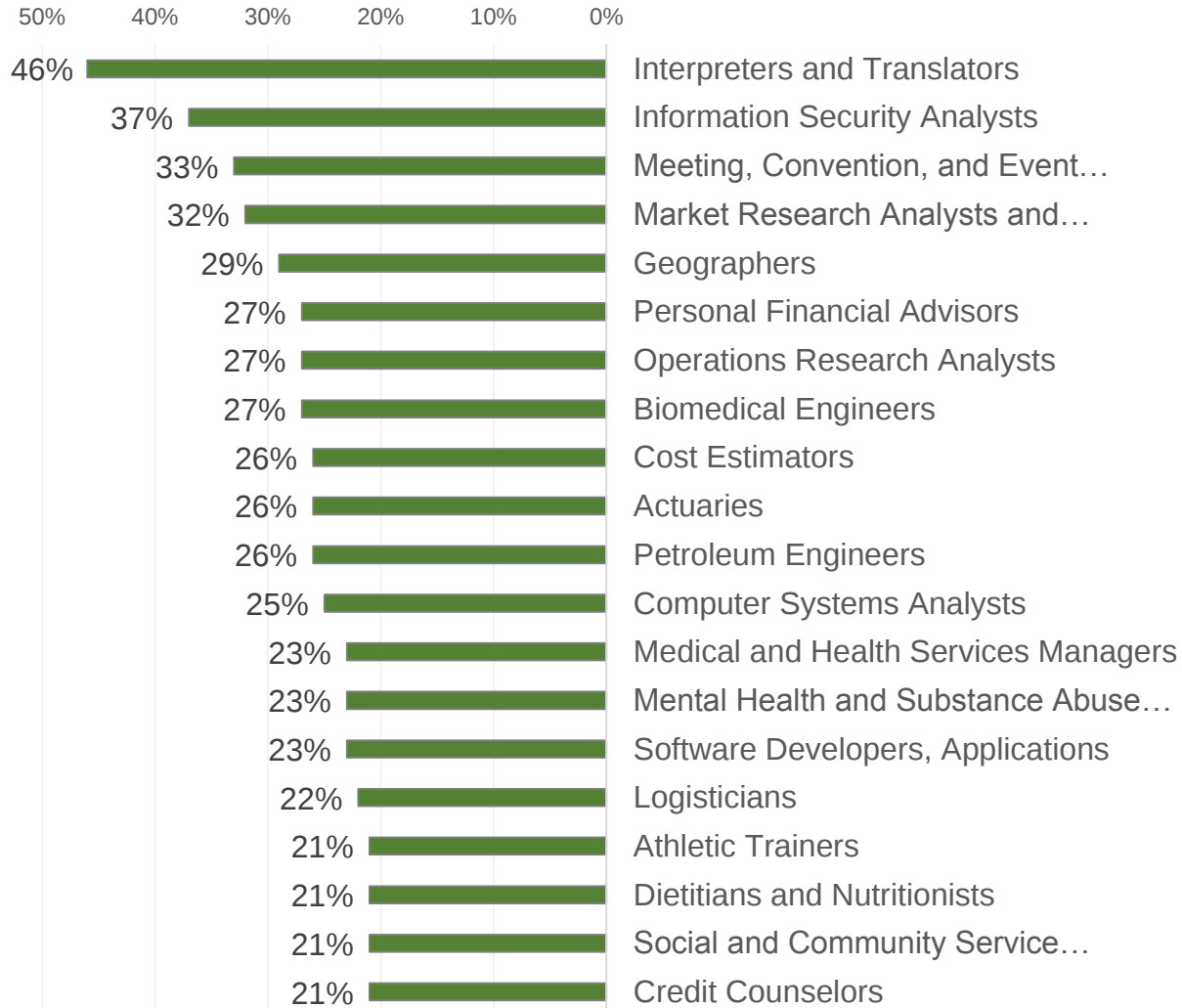
Projected numbers for bachelor's degrees conferred by ALL postsecondary degree-granting institutions: Gender



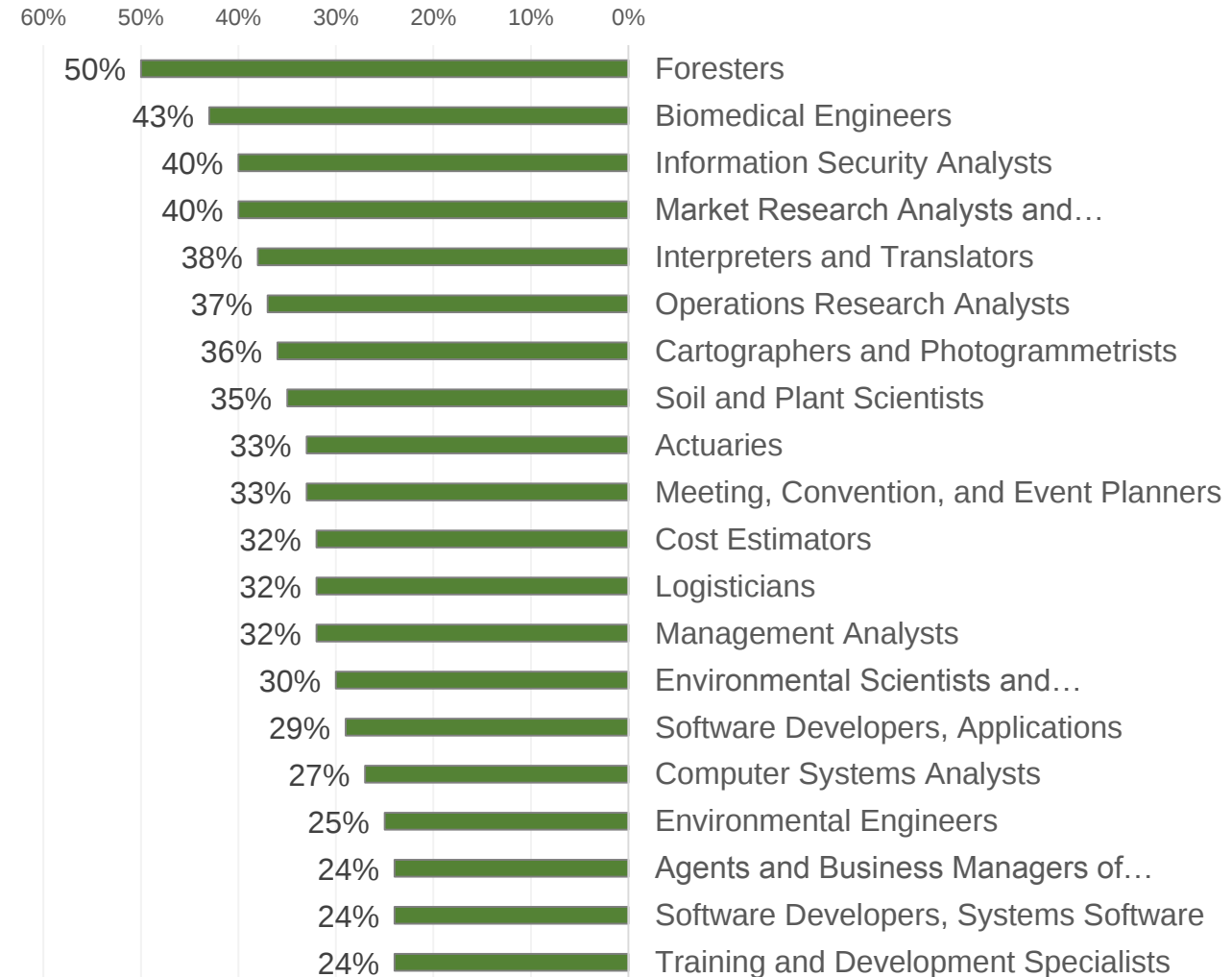
Fastest Growing Occupations Requiring a Four-Year Degree:

Percent Change 2012-2022

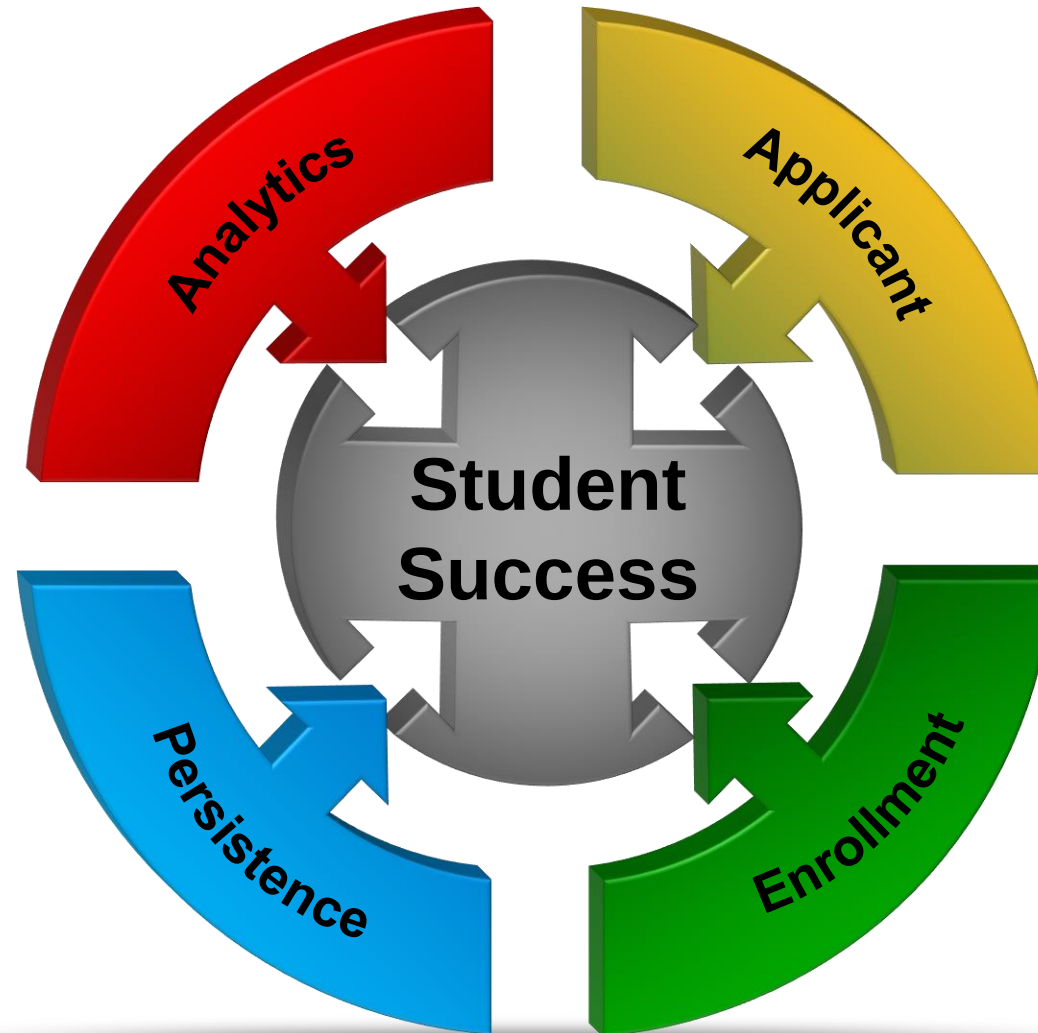
United States



California



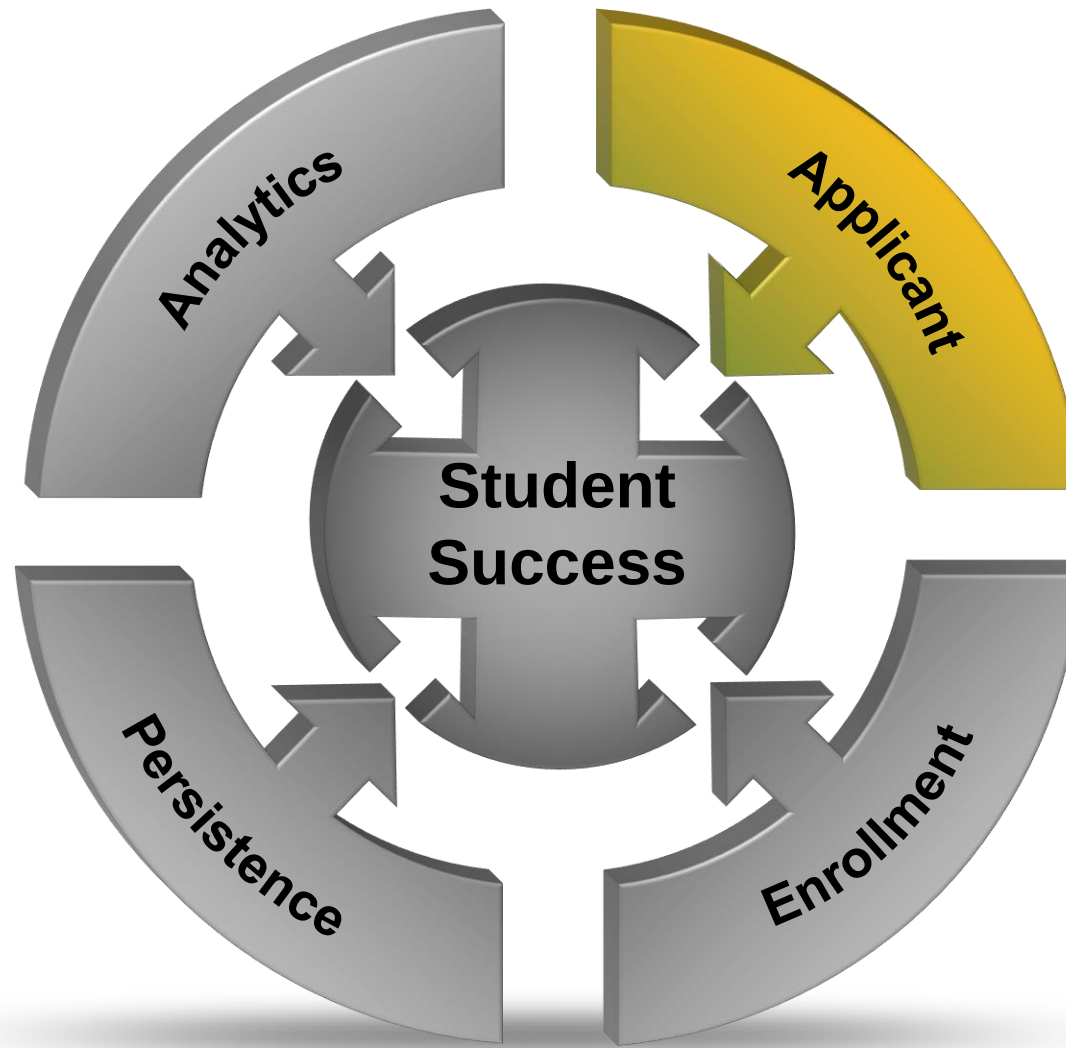
Research Approach



Applications

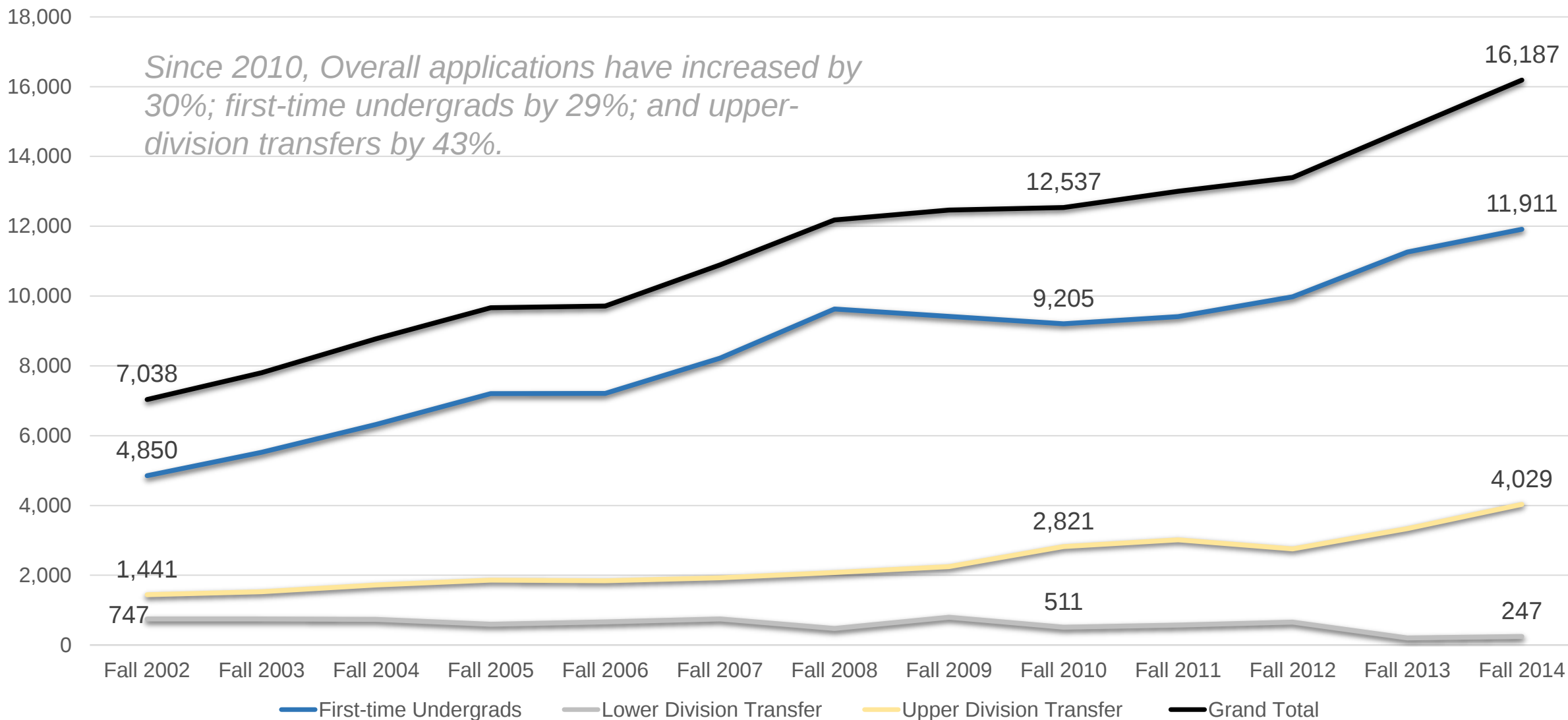
Highlights

- Application Trend
- HS GPA
- Location
- Exposure and Pell
- Program Interests
- Readiness x Majors

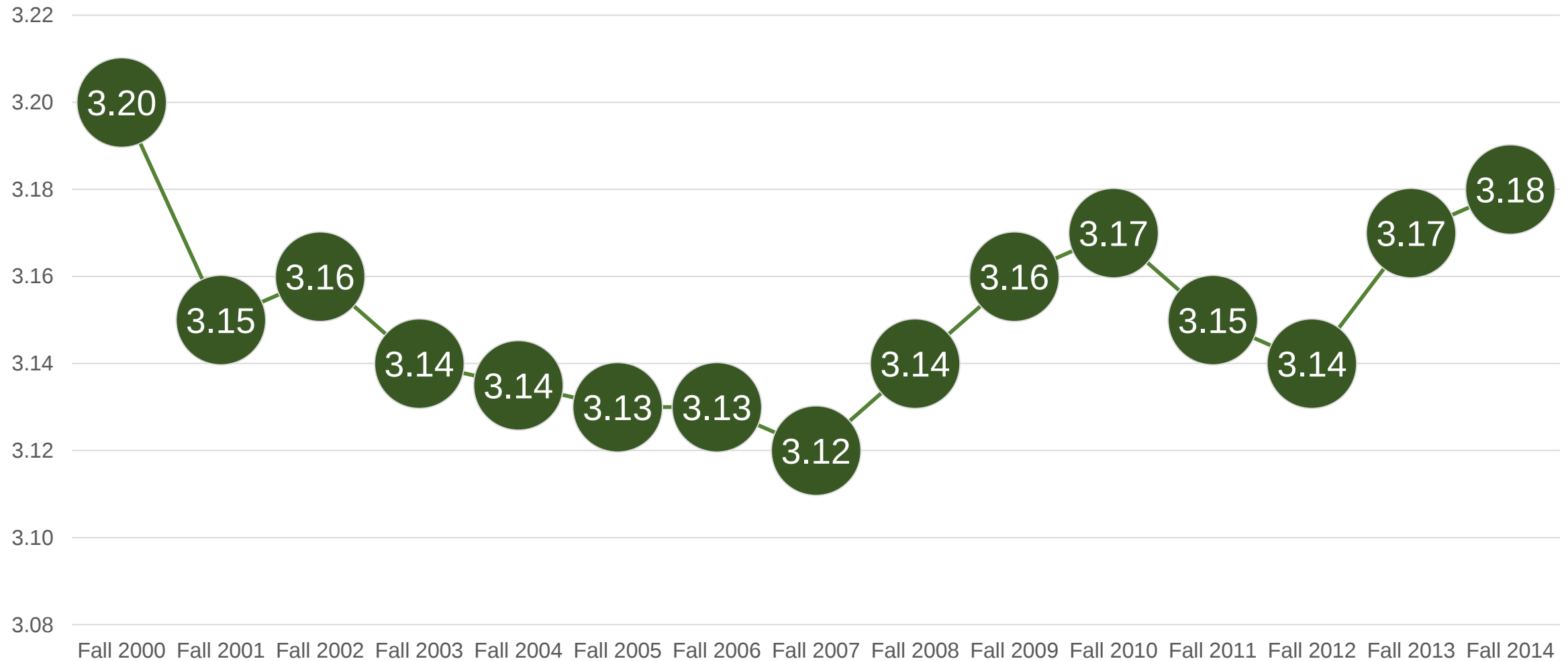


Application Trend

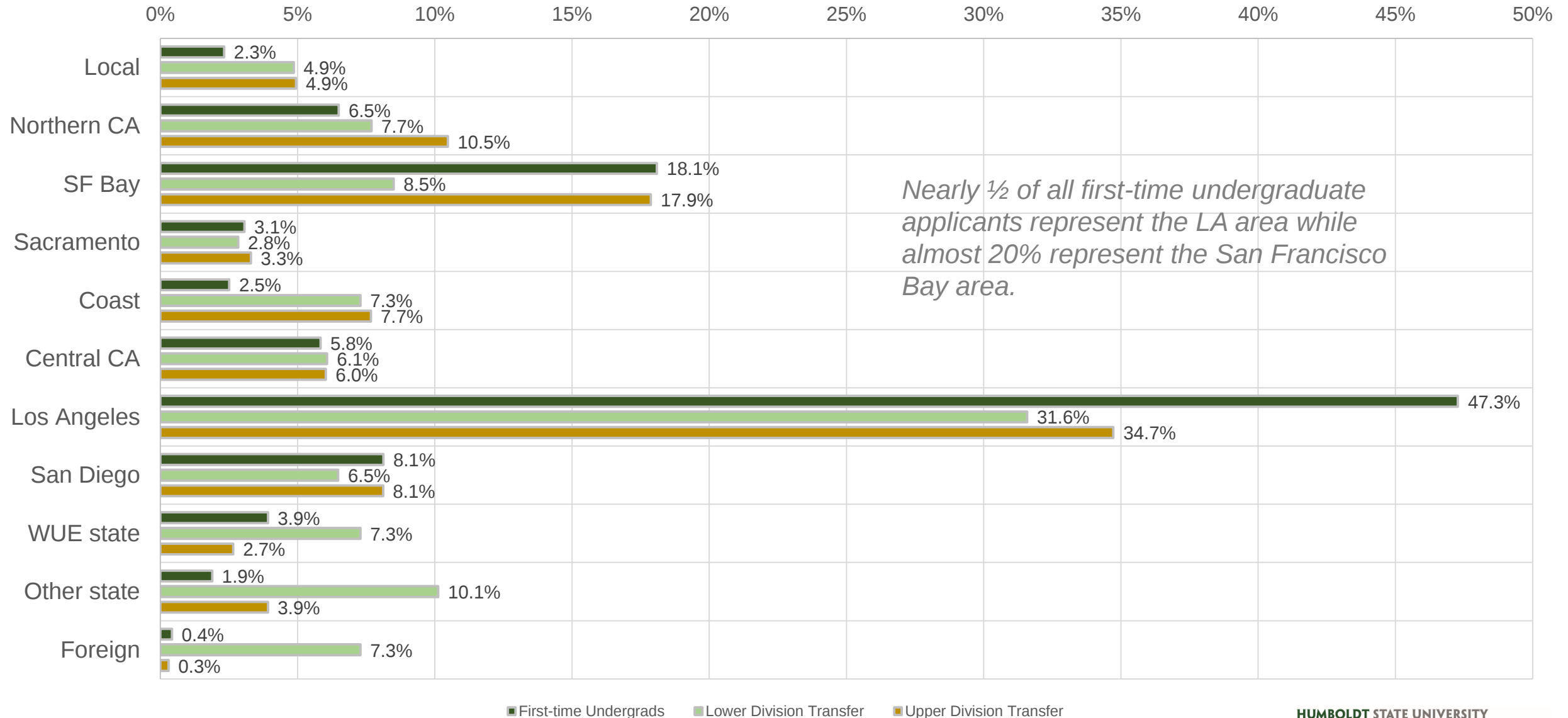
Count of Applications by Student Type: Fall 2002 through Fall 2014



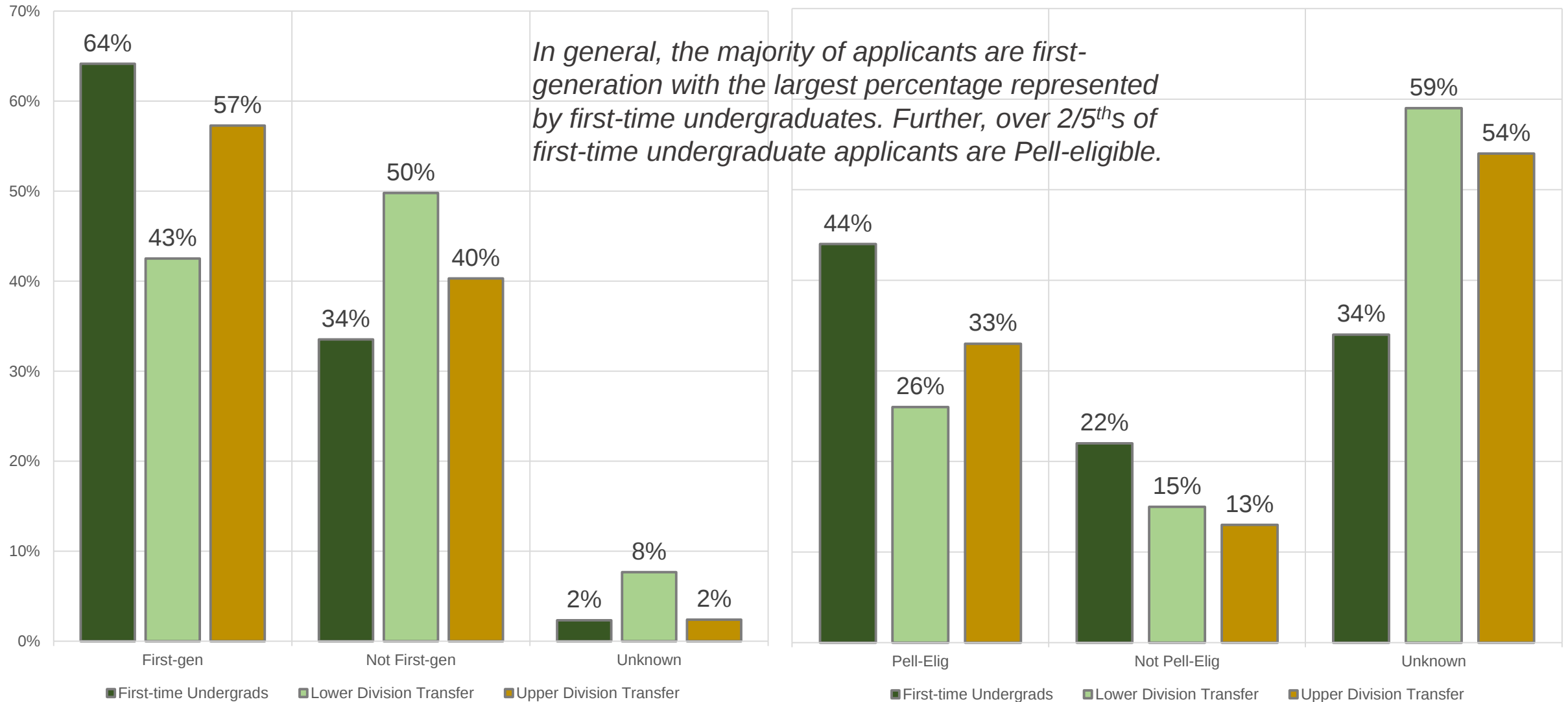
Median High School GPA of First-Time UG Applicants: Fall 2000 through 2014



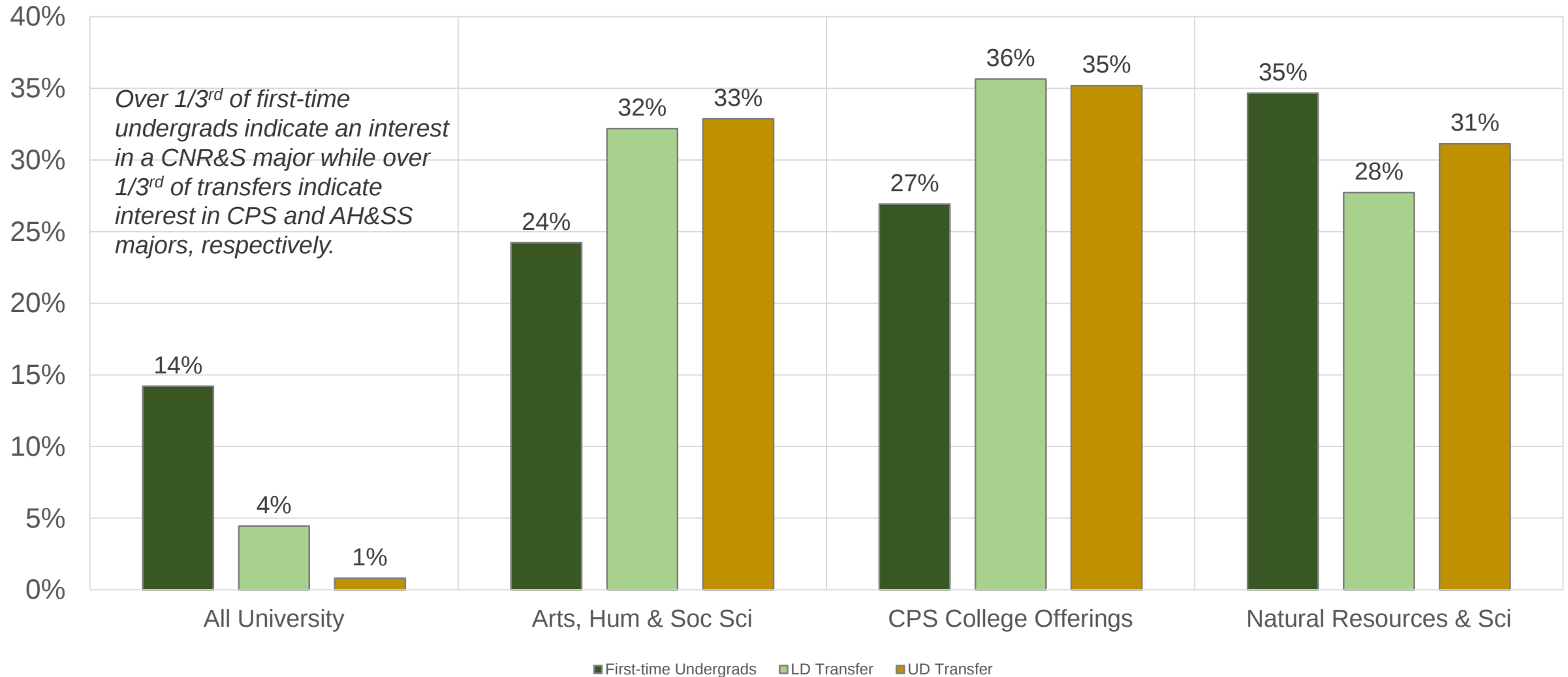
2014 Applicants by Location



2014 Applicants: College Exposure and Pell

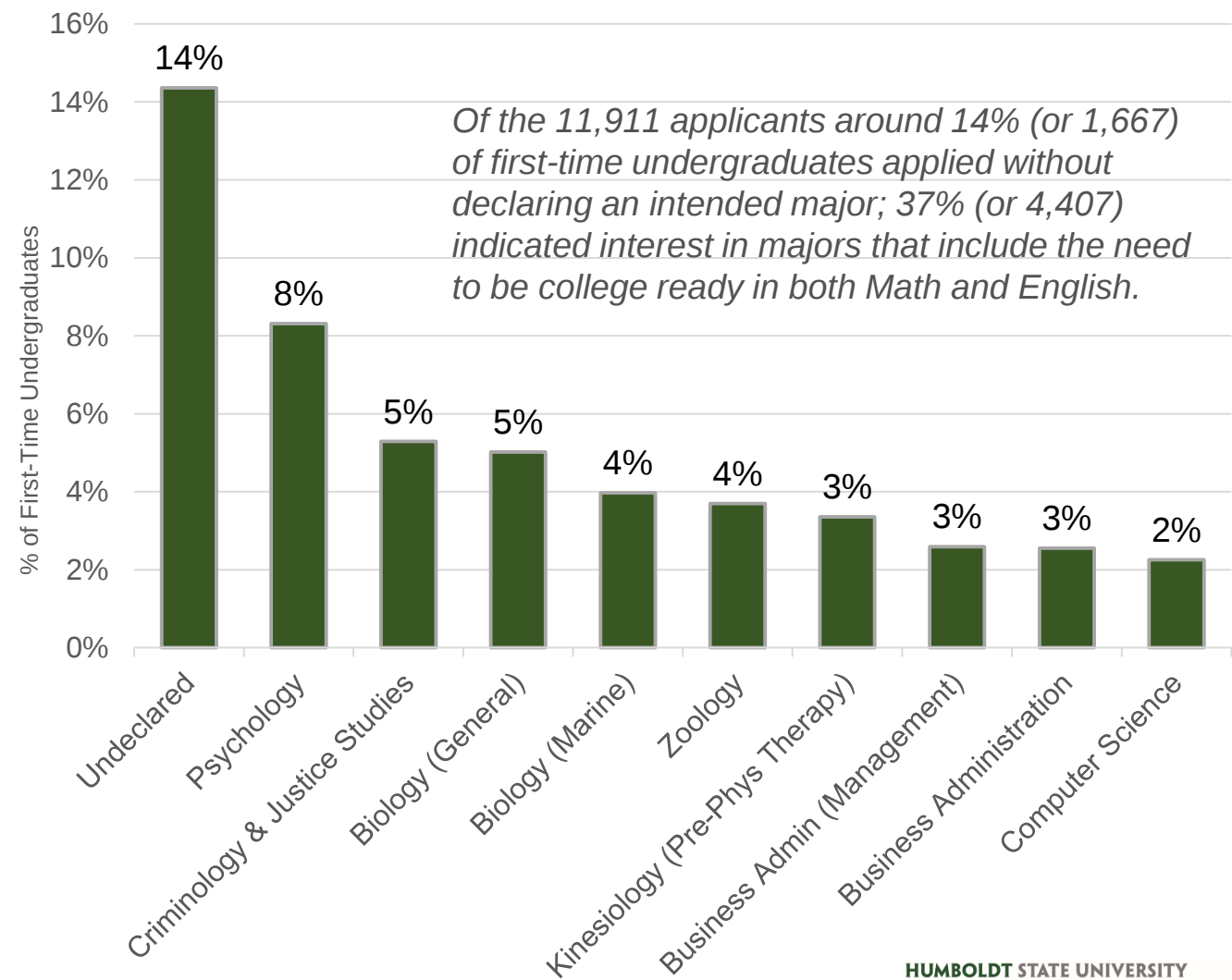
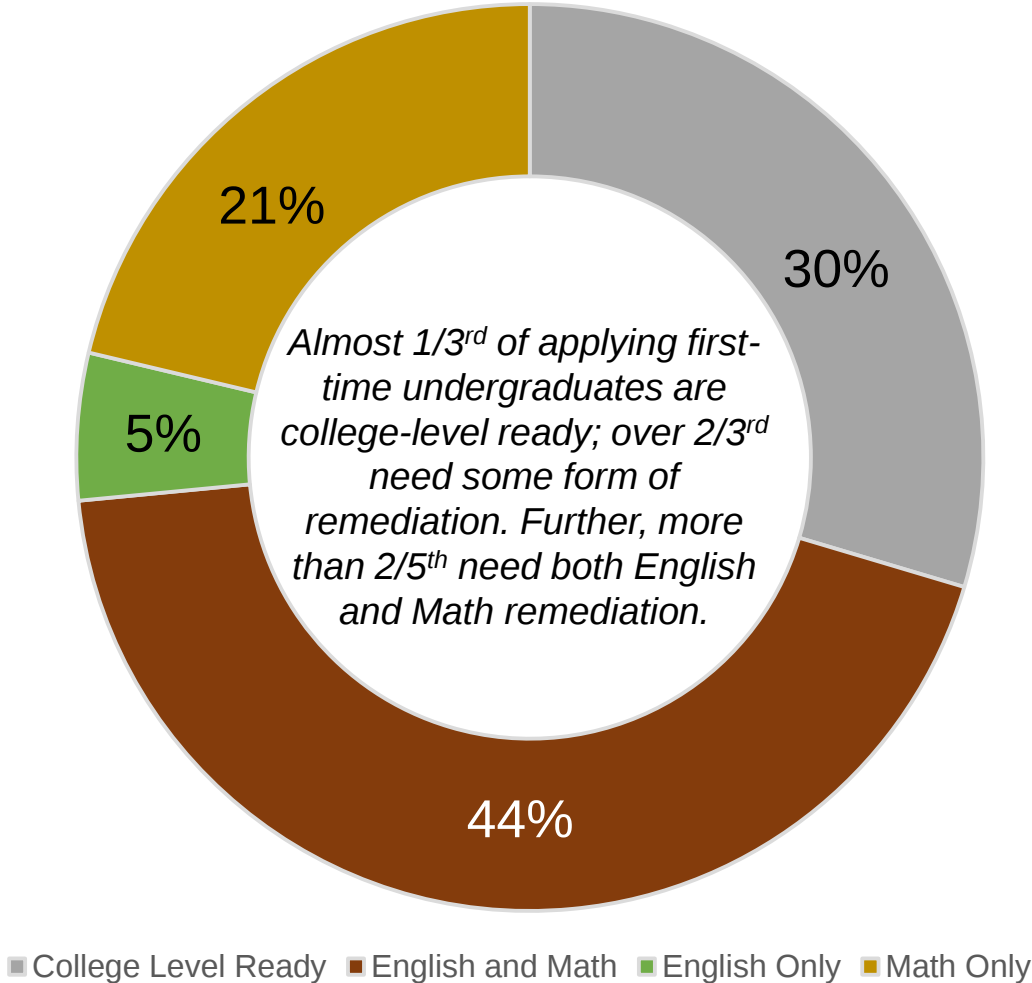


2014 Applicants: Programmatic Interests by Type



Readiness of Applicants vs Top 10 Intended Majors

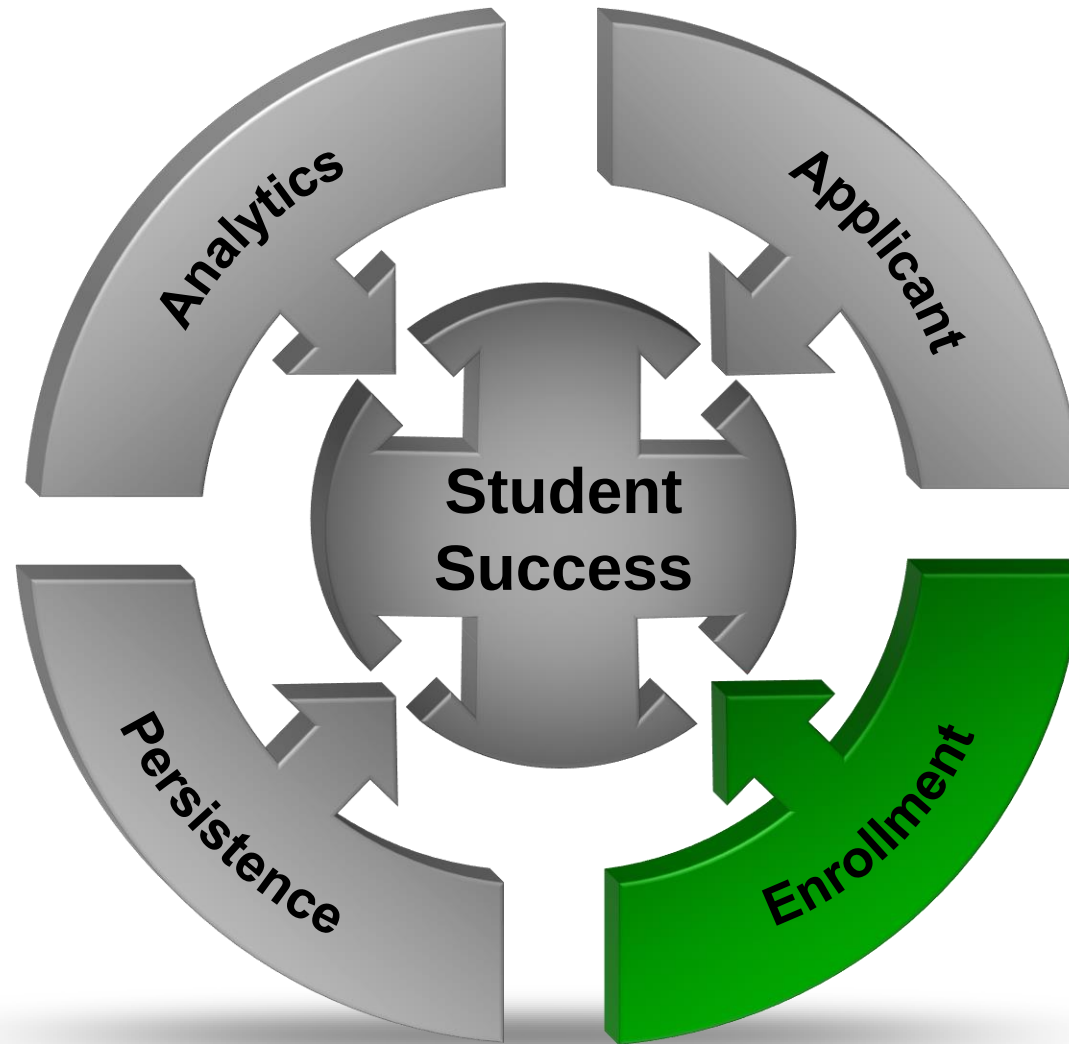
(Fall 2014)



Enrollment

Highlights

- Sub Groups
 - New Freshmen
 - New Transfer
 - FT/Part Time
 - FTES
- Change from 2013
- First-time Undergraduates
 - Demographics
 - Region
 - URM
 - First-Generation
 - Pell
 - Gender
 - Ethnicity



Enrollment Summary

	Fall 2014	Fall 2013	% Change
Student Headcount	8,485	8,293	2.3%
Full-Time Equivalent Students	7,960	7,772	2.4%
First Time Undergraduates	1,386	1,368	1.3%
Transfer Students	971	971	0.0%
Continuing Undergraduates	5,506	5,299	3.9%
Masters Enrollment	387	412	-6.1%
Credential Enrollment	101	90	12.2%

Fall 2014 Average Unit Loads			
	Female	Male	Overall Average
Undergraduate - Full Time	14.6	14.3	14.4
Undergraduate - Part Time	8.2	8.3	8.2
Credential - Full Time	22.6	20.7	22.0
Masters - Full Time	13.1	11.4	12.5
Masters - Part Time	5.3	5.5	5.4
Overall Average	14.1	13.8	14.0

Headcount Enrollment Summary (Cont.)

	Fall 12	Fall 13	Fall 14	% Change 2012 2014	% of Overall Population 2014
Class					
Frosh	1,814	1,890	1,928	6.28%	22.72%
Sophomore	1,054	1,022	1,079	2.37%	12.72%
Junior	2,061	2,034	2,110	2.38%	24.87%
Senior	2,668	2,807	2,847	6.71%	33.55%
Masters	371	412	386	4.04%	4.55%
Credential	108	90	97	-10.19%	1.14%
2nd Bachelor	24	18	20	-16.67%	0.24%
Other Postbac	16	20	18	12.50%	0.21%
TOTAL	8,116	8,293	8,485		

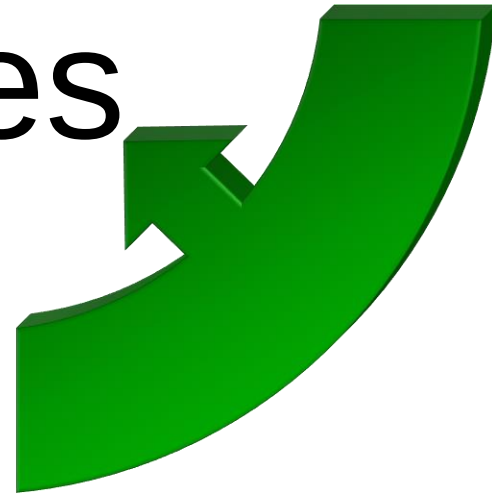
	Fall 12	Fall 13	Fall 14	% Change 2012 2014	% of Overall Population 2014
Ethnicity					
American Indian	110	91	85	-22.73%	1.00%
African American	291	291	320	9.97%	3.77%
Hispanic/Latino	1,800	2,119	2,441	35.61%	28.77%
Asian American	248	266	293	18.15%	3.45%
Pacific Islander	23	20	21	-8.70%	0.25%
Two or More Races	468	492	531	13.46%	6.26%
White	4,272	4,211	4,069	-4.75%	47.96%
Unknown	817	716	605	-25.95%	7.13%
Nonresident Alien	87	87	120	37.93%	1.41%
TOTAL	8,116	8,293	8,485		

Headcount Enrollment Summary (Cont.)

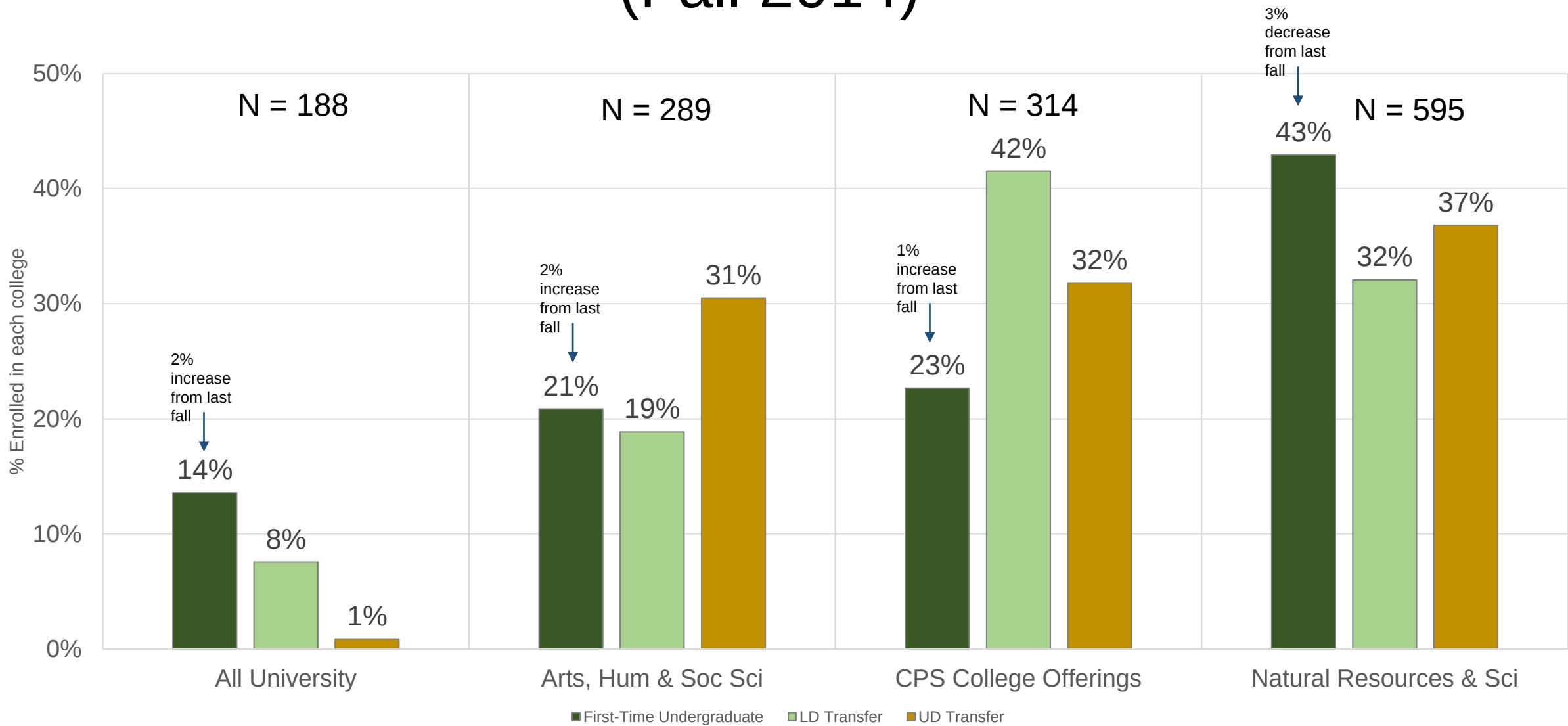
	Fall 12	Fall 13	Fall 14	% Change 2012 2014	% of Total Population 2014
Residency					
AB540	26	39	52	100.00%	0.61%
CA resident	7,348	7,601	7,830	6.56%	92.28%
International (non-res fees)	61	58	73	19.67%	0.86%
International (resident fees)	10	15	18	80.00%	0.21%
Other state (non-res fees)	172	146	120	-30.23%	1.41%
Other state (resident fees)	21			-100.00%	0.00%
WUE	475	425	374	-21.26%	4.41%
WUE grad	3	9	18	500.00%	0.21%
TOTAL	8,116	8,293	8,485		

	Fall 12	Fall 13	Fall 14	% Change 2012 2014	% of Total Population 2014
Location					
Local	1,481	1,340	1,189	-19.72%	14.01%
Northern CA	826	824	872	5.57%	10.28%
SF Bay	1,013	1,053	1,076	6.22%	12.68%
Sacramento	232	276	297	28.02%	3.50%
Coast	380	365	350	-7.89%	4.12%
Central CA	432	473	532	23.15%	6.27%
Los Angeles	2,121	2,399	2,631	24.05%	31.01%
San Diego	564	598	644	14.18%	7.59%
WUE state	616	553	497	-19.32%	5.86%
Other state	381	342	311	-18.37%	3.67%
Foreign	70	70	86	22.86%	1.01%

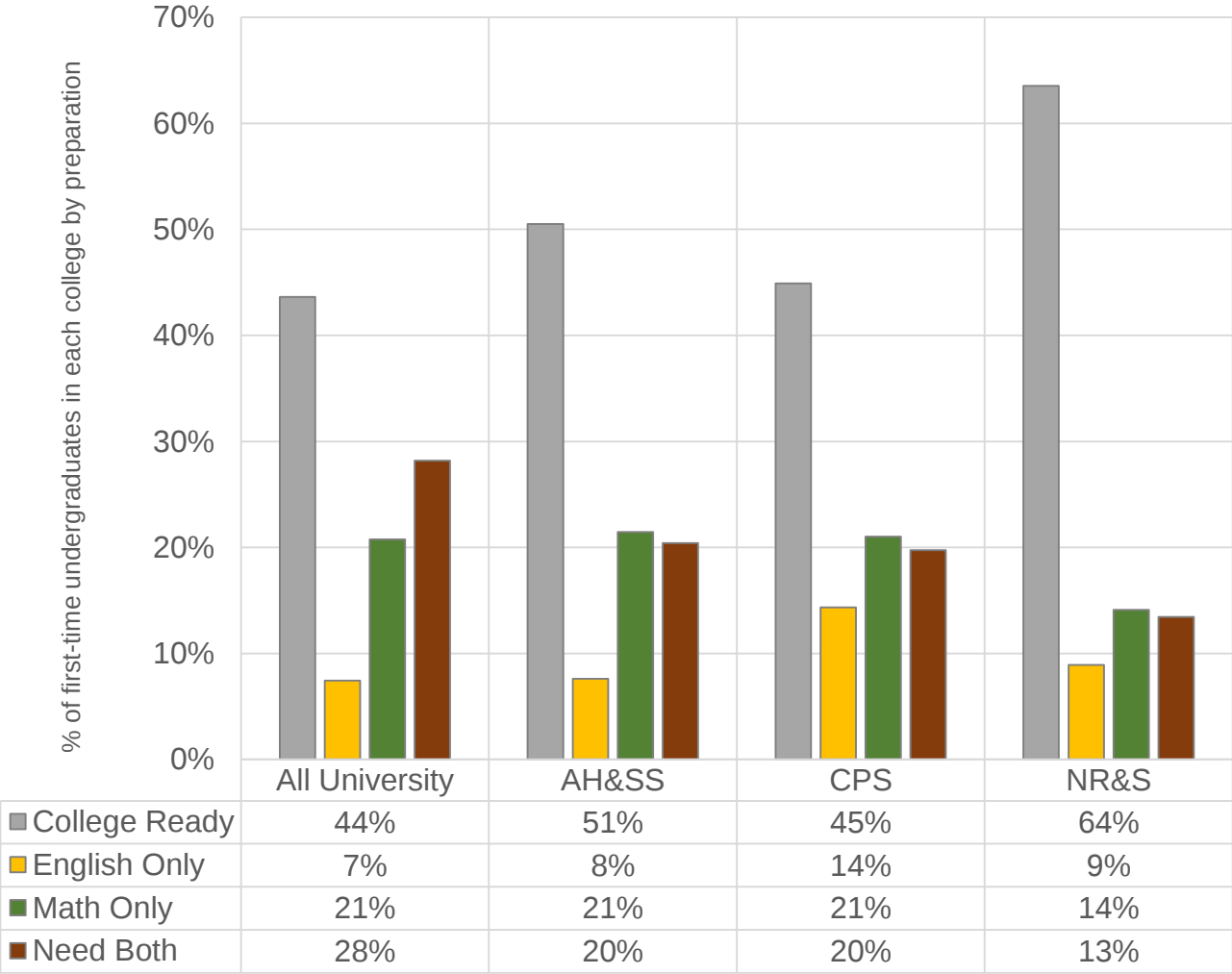
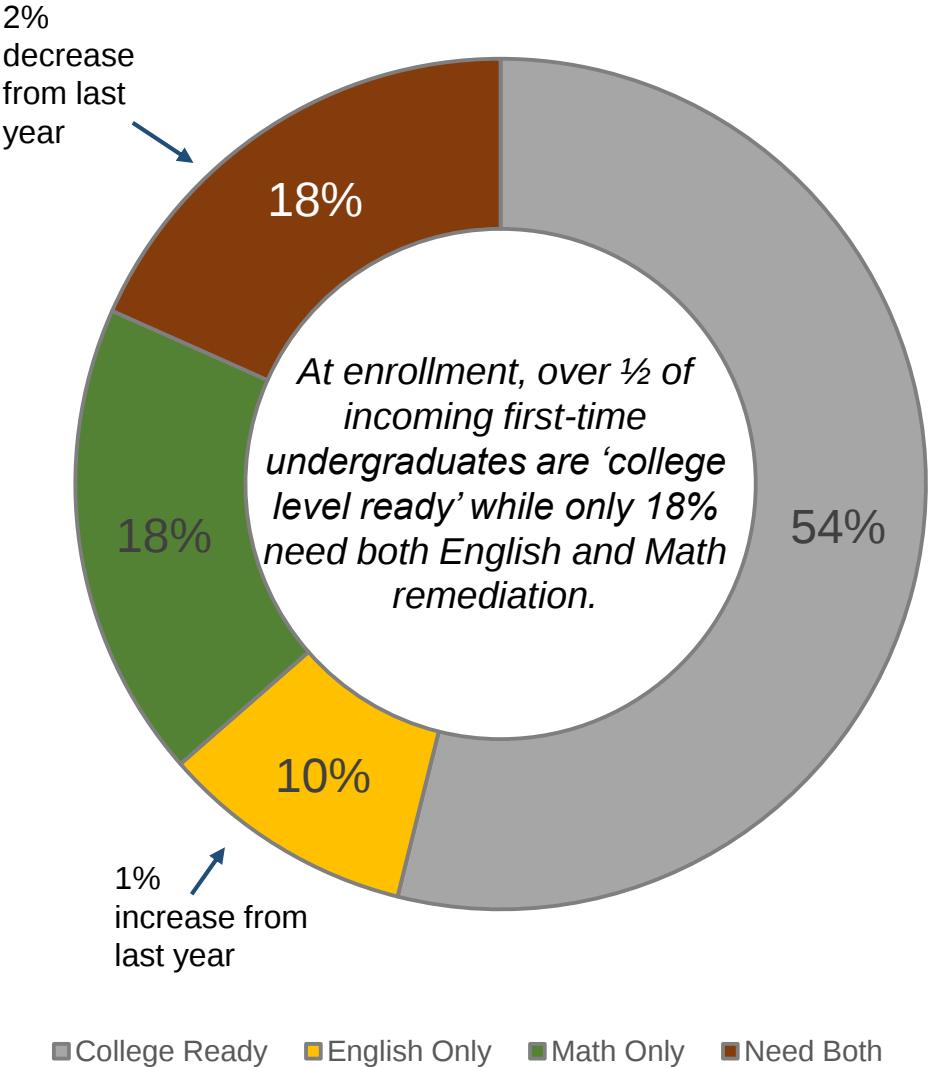
New Undergraduates



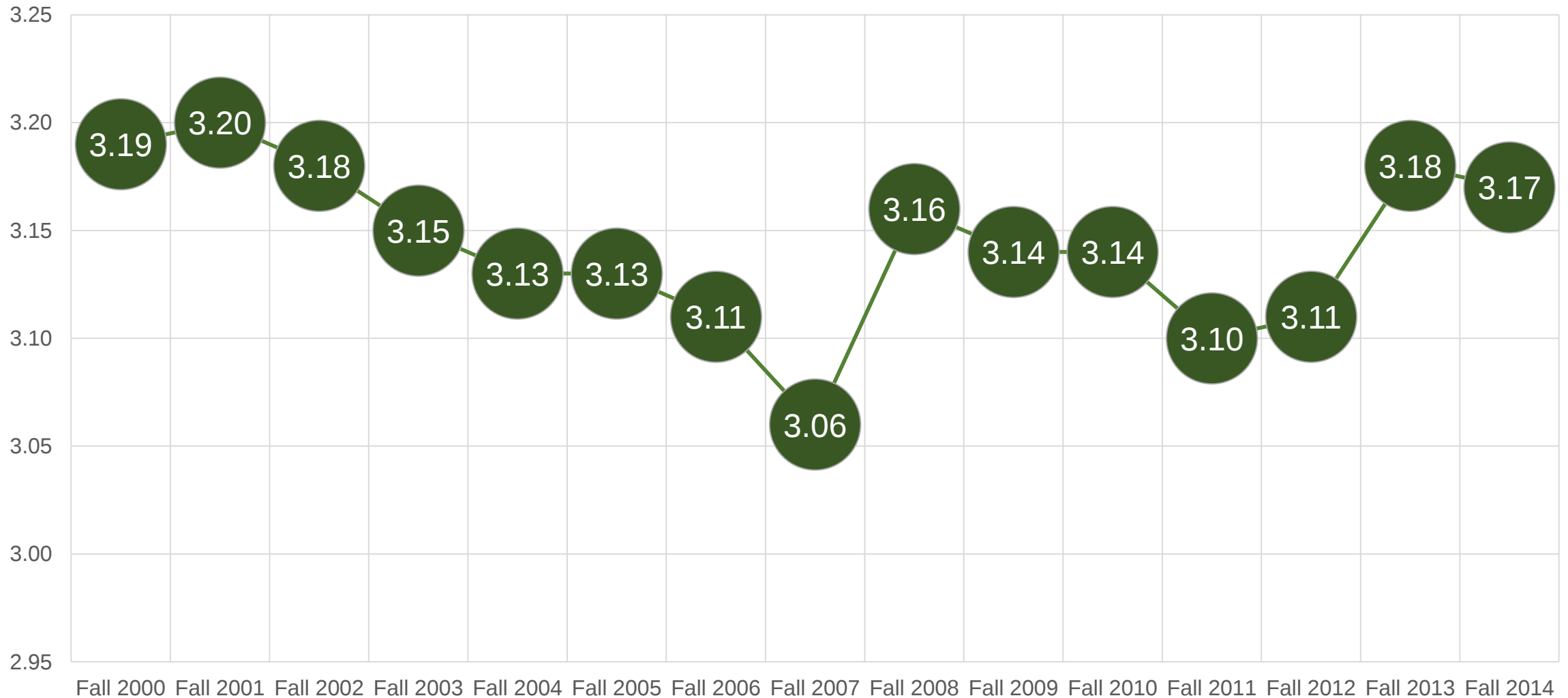
Programmatic Interests of New Undergraduates x Type (Fall 2014)



First-Time Undergraduates: College Readiness and Program Choice (Fall 2014)

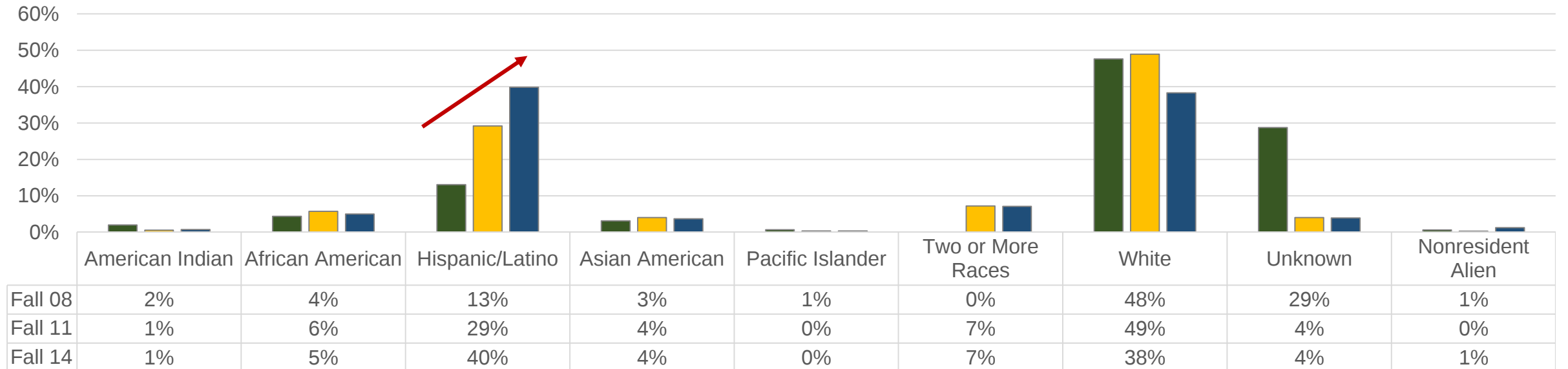
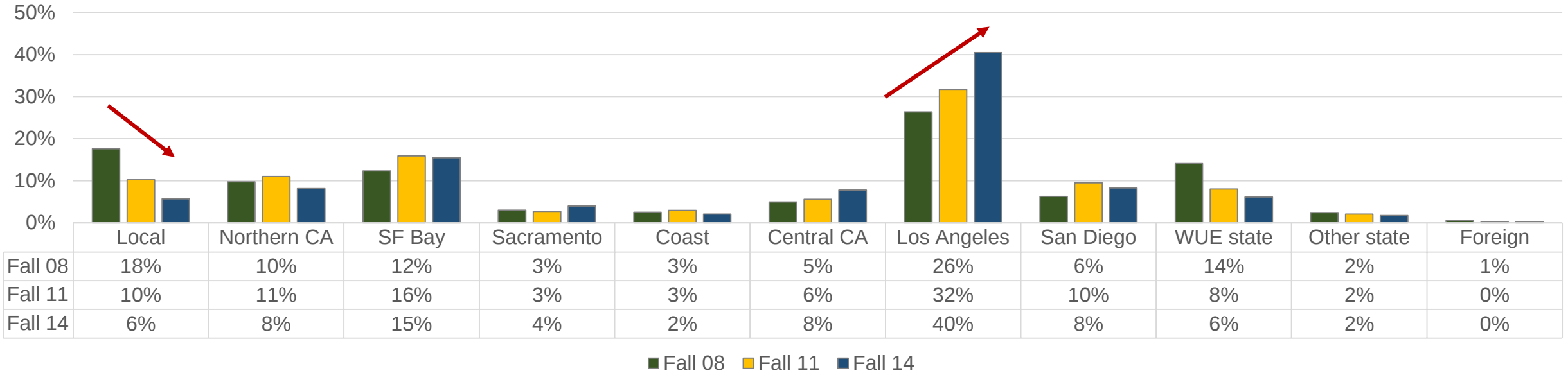


Median High School GPA of First-Time UG Enrolled: Fall 2000 through 2014



First-Time Undergraduate Demographics

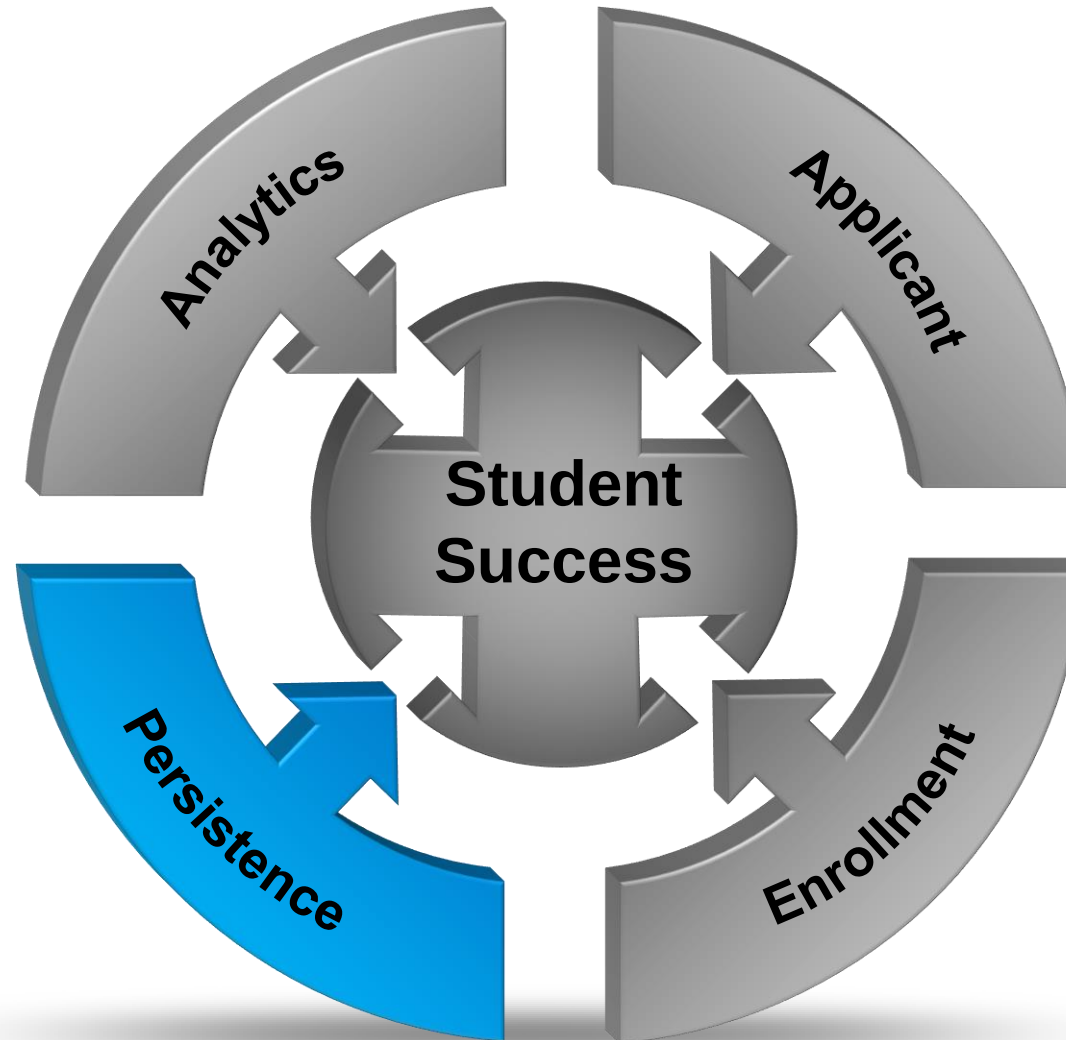
(Fall 2008, 2011, 2014)



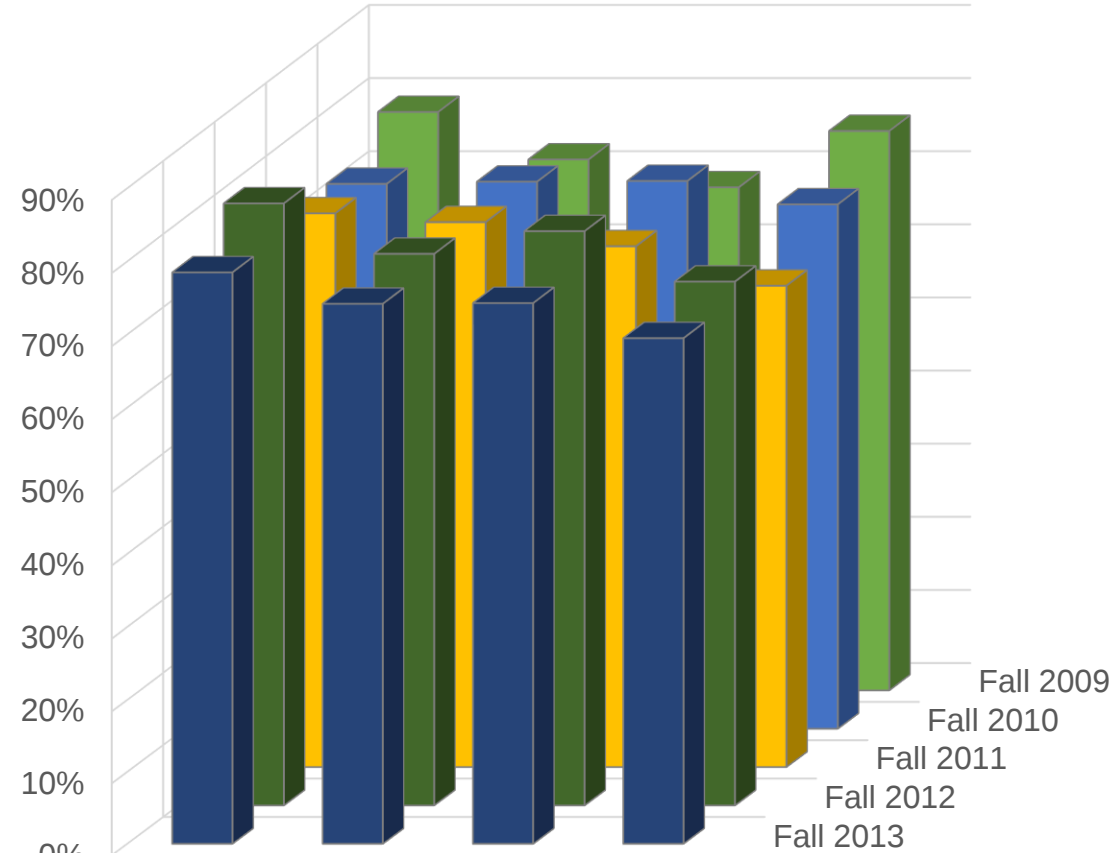
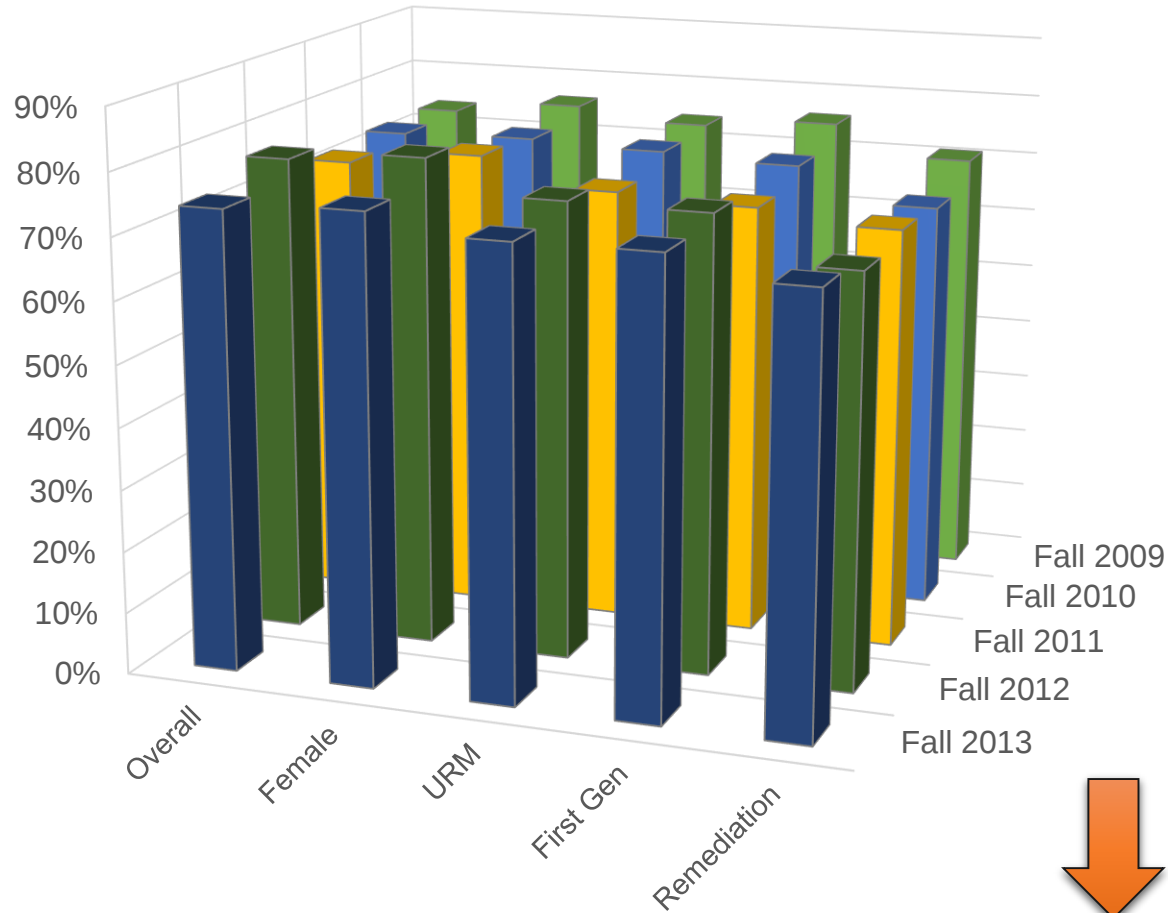
Persistence

Highlights

- Retention to 2nd Year
- 6-Year Graduation Rates
- Achievement Gap
 - Gender
 - URM
 - First Generation
 - Remediation



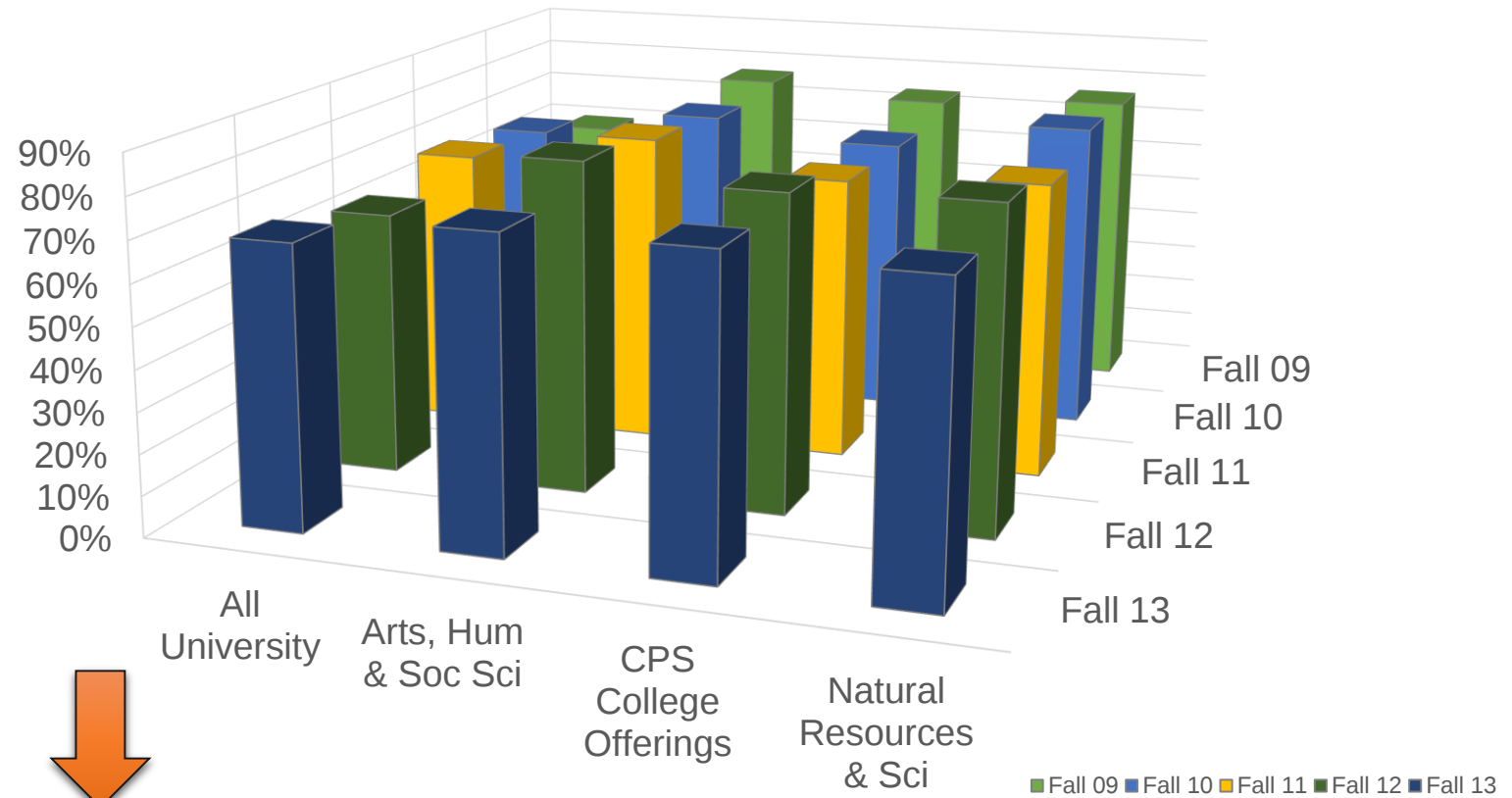
Slicing First-Year Retention



	F Non URM	F URM	M Non URM	M URM
Fall 2009	79%	73%	69%	77%
Fall 2010	75%	75%	75%	72%
Fall 2011	76%	75%	71%	66%
Fall 2012	83%	76%	79%	72%
Fall 2013	79%	74%	74%	70%

Program Choice

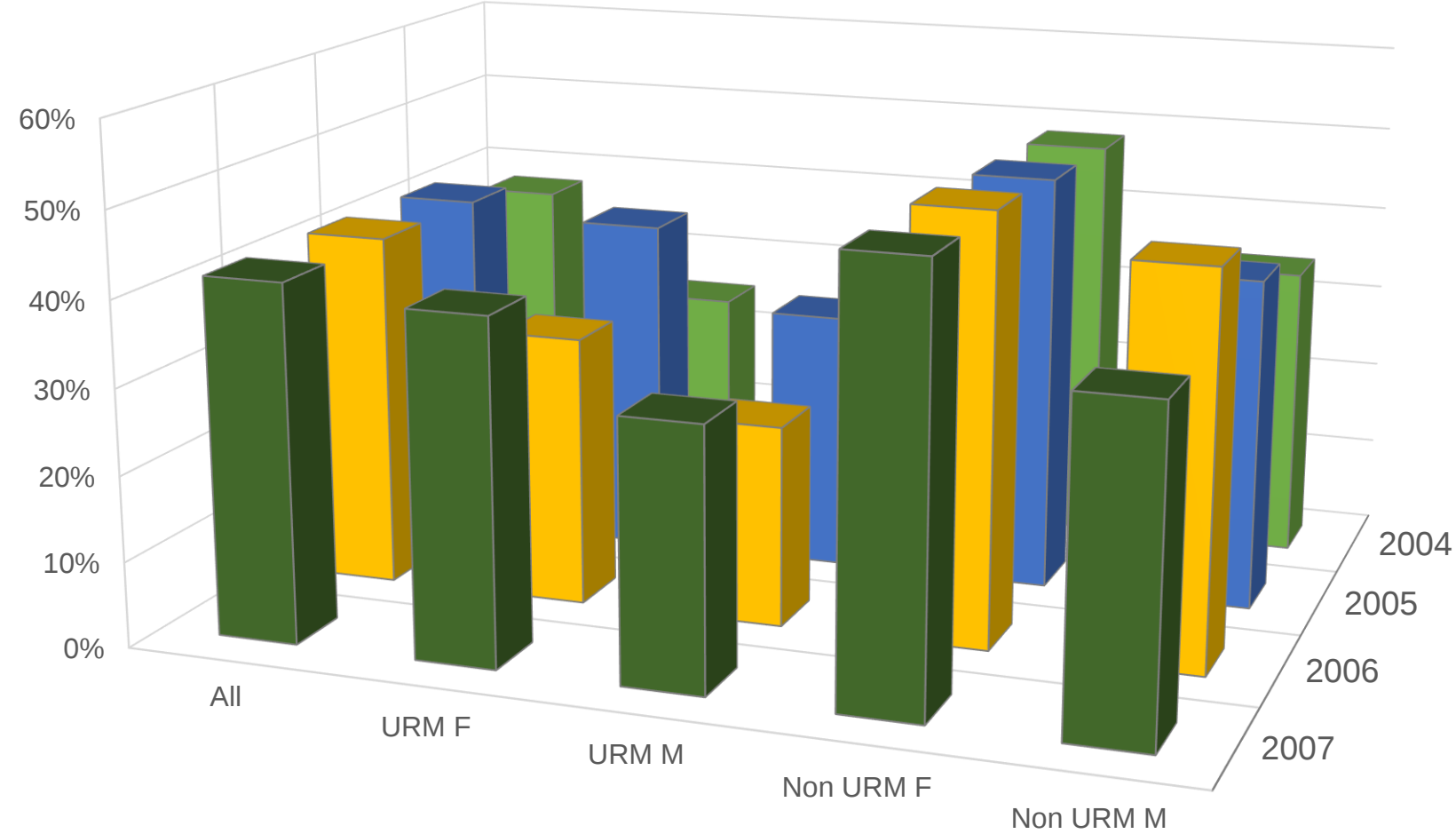
Choice of program seems to have a relationship to retention. Students who do not identify a field of study seem less likely to retain after the first year than others.



	All University	Arts, Hum & Soc Sci	CPS College Offerings	Natural Resources & Sci
Fall 09	60%	77%	74%	76%
Fall 10	68%	75%	70%	78%
Fall 11	70%	78%	71%	73%
Fall 12	65%	82%	78%	79%
Fall 13	69%	75%	76%	74%

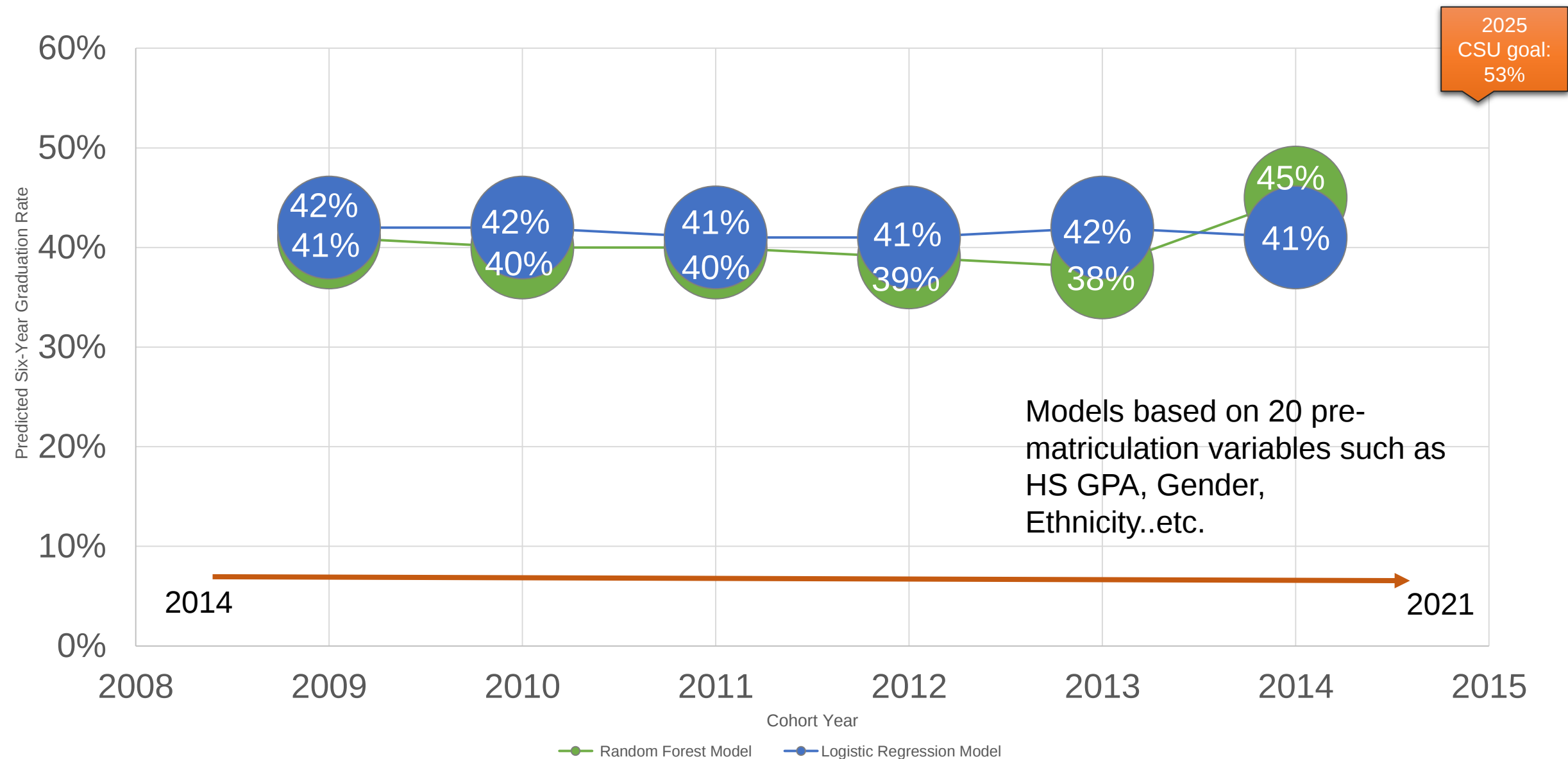
6-Year Graduation Rate

Student success is inconsistent across ethnic x gender categories. Students who are BOTH URM and Male tend to graduate at a lower rates than overall and Female counterparts. Conversely, Females who are also Non-URM have show higher than mean success rates.



	All	URM F	URM M	Non URM F	Non URM M
2004	38%	25%	21%	48%	34%
2005	41%	40%	30%	49%	39%
2006	42%	32%	24%	50%	46%
2007	42%	40%	30%	50%	38%

Predicting Future Six-Year Graduation Rates



Risk Assessment

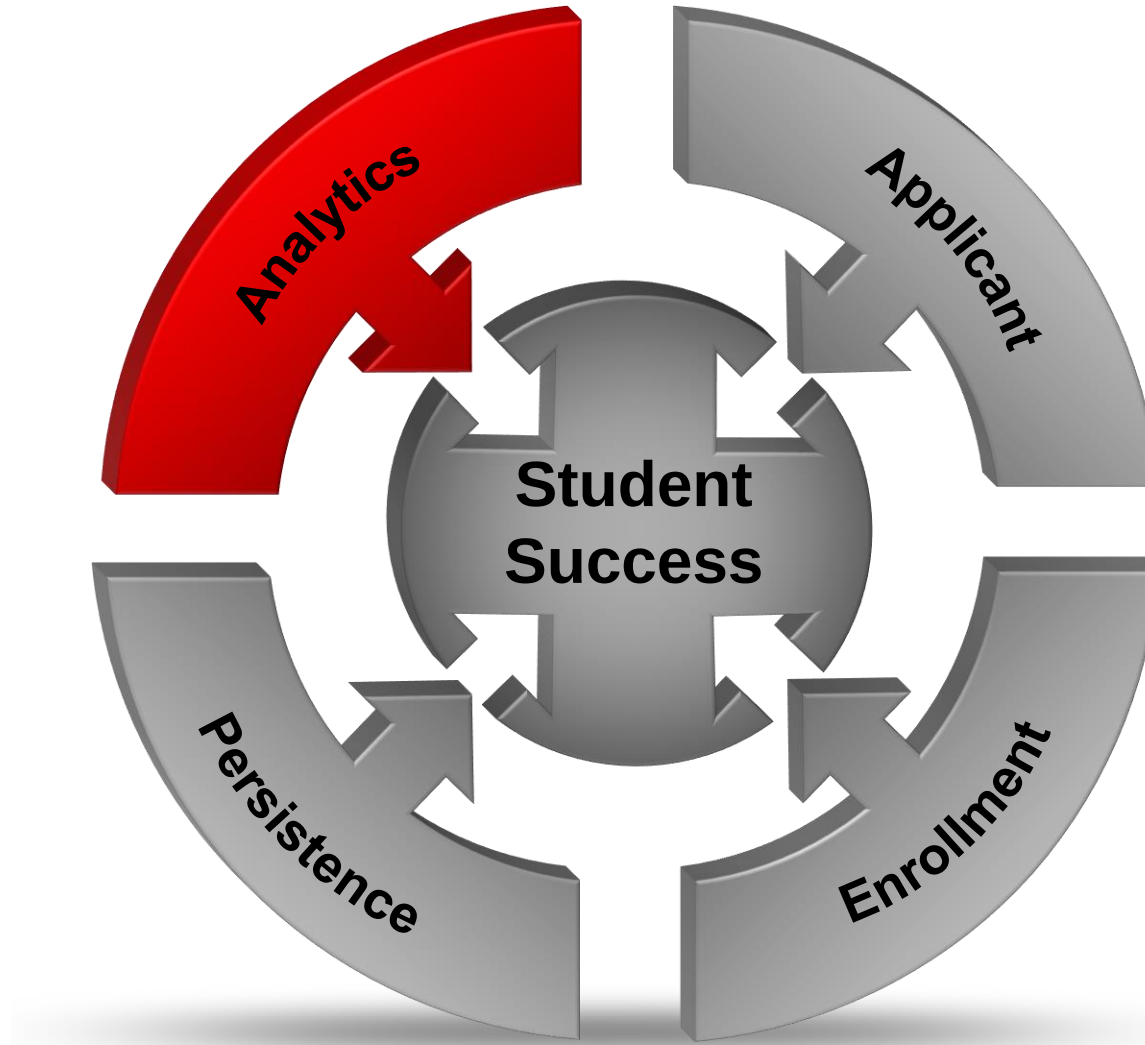
- If we do nothing, current rates will continue.
- Students who come to campus initially without a planned major and without college ready skill sets in BOTH Math and English are especially at risk.
- Male-URM students are also at risk.
- We do not know enough about our incoming students' perceptions, expectations, and goals to influence their migration through pipeline. What to do? When to do it?
- HSU Version of "Murky Middle"



Analytics

Actionable Intelligence

- Retention and Finance
- Beyond Demographics
- Modeling
- Assessing Program Efficacy



Moving the number: Retention

Cohort	1,386		Each percentage point represents 14 additional students from cohort
Average retention	74%	1,026	
> 1% point	75%	1,040	14
> 2% points	76%	1,053	27
> 3% points	77%	1,067	41
> 4% points	78%	1,081	55
> 5% points	79%	1,095	69
> 6% points	80%	1,109	83

Financial Implication of Improving Retention

Annual Revenue Generated (Based on Undergraduate Tuition Only)

Average student credit hours taken: 14

Per Student Tuition	Resident	WUE	Non-Resident
State Tuition Fee	5,472	8,208	5,472
Non-Resident Tuition			10,416
less waivers & other adjustments	(192)	(287)	(816)
Net Tuition per Student	5,280	7,921	15,072
# of Additional Students Retained	83	83	83
Total Tuition	\$ 438,240	\$ 657,443	\$ 1,250,976

Annual Revenue Generated (based on Undergraduate Tuition + State Funding)

Average student credit hours taken: 14

Per Student Tuition	Resident	WUE	Non-Resident
State Tuition Fee	5,472	8,208	5,472
Non-Resident Tuition			10,416
14/15 State Funding for Enrollment Growth	5,270		
less 1/3 Financial Aid Set Aside (14/15 CO)	(1,320)		
less waivers & other adjustments	(192)	(287)	(816)
Net Tuition per Student	9,230	7,921	15,072
# of Additional Students Retained	83	83	83
Total Tuition	\$ 766,090	\$ 657,443	\$ 1,250,976

Deconstructing the Class of 2013

What happened?

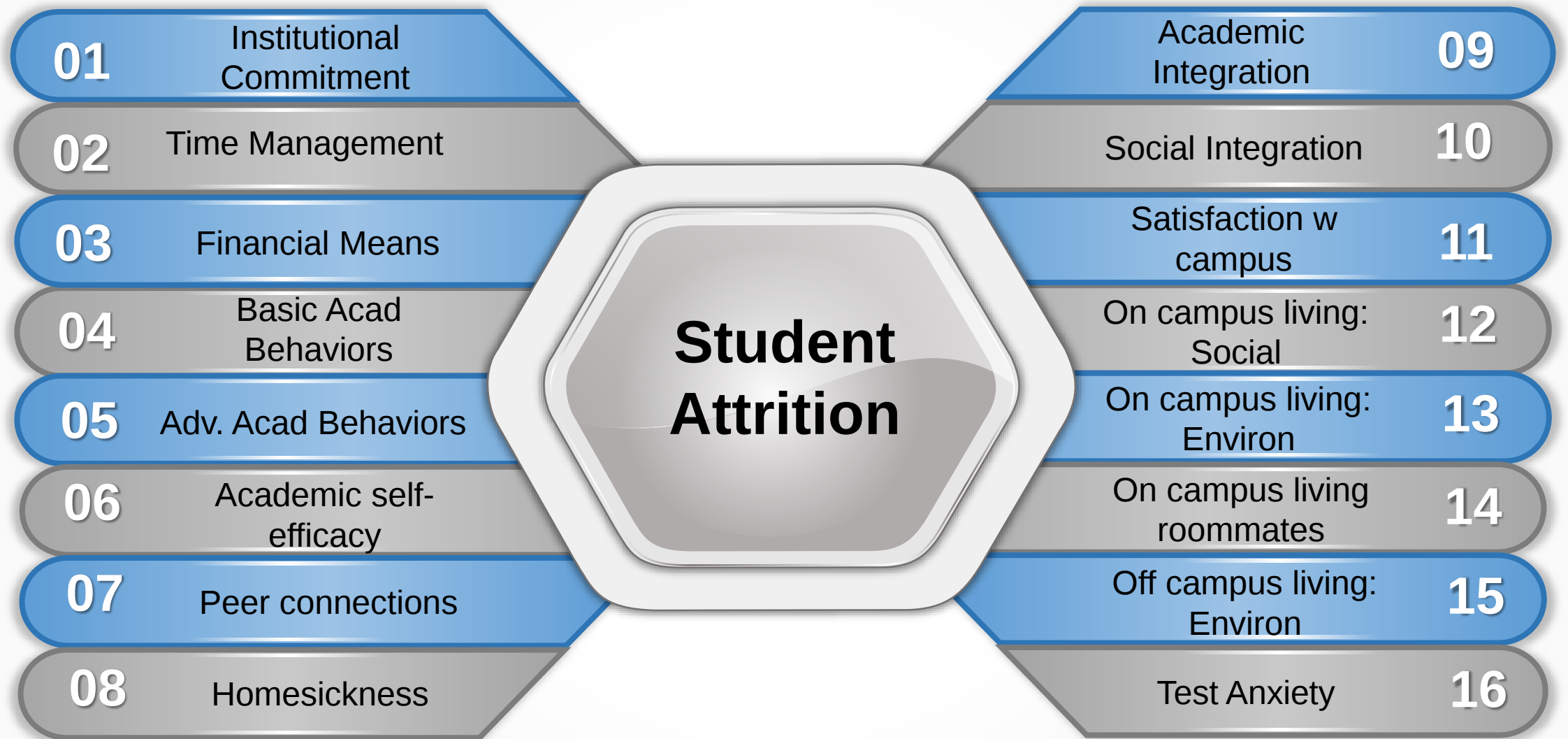
By the numbers

- When looking at the ‘traditional’ input measures typically used to predict retention we see the following differences between 2013 compared to 2012:

2013 had:

- 2% more URM
- 6% more female
- 7% more Pell
- 3% more Low Income
- 6% more First Generation
- 4% more from LA Area, local area and SF Bay down by 1% each
- 0.07 higher median High School GPA
- 10 point lower Total SAT score
- Median Loan Aid was \$1,475 lower in 2013 and Median unmet need was \$404 higher. With higher proportions of low income/Pell students this might be something to explore further.

The Role of Research



Descriptive Statistics Fall 2013 Transition Group (N = 926)

Sub-Group	Percent
Female	66.8%
Hispanic	40.3%
Multi-racial	6.8%
African American	4.4%
Asian	4%
STEM	46.9%
First Generation: Mother	40%
First Generation: Father	46%

Procedures*

- Tested data for normality
 - Where appropriate and necessary data were transformed
- Paired T-tests (Fall transition to Check up) or Repeated Measures ANOVA (Fall transition, Check up, Spring transition) to compare change in factor scores
- Bivariate correlations on factor scores and GPA (Fall 2013 and Spring 2014)
- Conducted Binary Logistic Regression relationship between factor scores, GPA and retention to Fall 2014
- Presentation is NOT exhaustive but illustrates what we can learn through inferential statistics about this class and what we may want to consider in future program planning. Analyses will be ongoing through rest of Fall term. (RFP Action Research and Data Readiness).

Example 1: Basic Academic Behaviors

Q044. Academic Behaviors - To what degree are you the kind of person who: Attends class

Q045. Academic Behaviors - To what degree are you the kind of person who: Takes good notes in class

Q046. Academic Behaviors - To what degree are you the kind of person who: Turns in required homework assignments

Q047. Academic Behaviors - To what degree are you the kind of person who: Spends sufficient study time to earn good grades

Q051. Advanced Study Skills - To what degree are you the kind of person who: Records your assignments and tests in a calendar

Test 1: Paired T-test Fall Transition to Fall Check-up

Paired Samples Statistics									
Pair 1		Mean	N	Std. Deviation	Std. Error Mean				
	xbasic_acad_behavior	2.4170	481	.15761	.00719				
	xbasic_acad_behaviorx	2.3386	481	.22150	.01010				
Paired Samples Test									
Paired Differences									
		95% Confidence Interval of the Difference							
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	xbasic_acad_behavior - xbasic_acad_behaviorx	.07843	.17588	.00802	.06267	.09419	9.780	480	.000

First-time undergraduate basic academic behavior factor scores significantly decreased by .08 points from fall transition ($M = 2.41$, $SD = 2.41$) to fall check up ($M = 2.33$, $SD = .221$), $t(480) = 9.780$, $p < .001$, $d = .4459$

Does this change matter?

Example 1: Relationship Between Basic Academic Behaviors / Fall and Spring GPA

Fall Transition Basic Academic Behavior Factor Score & GPA

Correlations			
		squ_basic_acad_behavior	sq_fall_13_gpa
xbasic_acad_behavior	Pearson	1	.244**
	Correlation		
	Sig. (2-tailed)		.000
xfall_13_gpa	N	919	919
	Pearson	.244**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	919	926

** . Correlation is significant at the 0.01 level (2-tailed).

		squ_basic_acad_behavior	sq_spring_14_gpa
xbasic_acad_behavior	Pearson	1	.241**
	Correlation		
	Sig. (2-tailed)		.000
xspring_14_gpa	N	919	919
	Pearson	.241**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	919	926

** . Correlation is significant at the 0.01 level (2-tailed).

Fall Check-Up Basic Academic Behavior Factor Score & GPA

Correlations			
		squ_basic_acad_behaviorx	sq_fall_13_gpa
xbasic_acad_behaviorx	Pearson	1	.380**
	Correlation		
	Sig. (2-tailed)		.000
xfall_13_gpa	N	482	482
	Pearson	.380**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	482	926

** . Correlation is significant at the 0.01 level (2-tailed).

		squ_basic_acad_behaviorx	sq_spring_14_gpa
xbasic_acad_behaviorx	Pearson	1	.390**
	Correlation		
	Sig. (2-tailed)		.000
xspring_14_gpa	N	482	482
	Pearson	.390**	1
	Correlation		
	Sig. (2-tailed)	.000	
	N	482	926

** . Correlation is significant at the 0.01 level (2-tailed).

Example 1 Logistic Regression: Using GPA to Predict Retention

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	210.541	2	.000
	Block	210.541	2	.000
	Model	210.541	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	785.824 ^a	.203	.309

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	sq_fall_13_gpa	-.368	1.012	1	.314	.692
	sq_spring_14_gpa	4.192	70.273	1	.000	66.124
	Constant	-4.594	75.179	1	.060	.010

a. Variable(s) entered on step 1: sq_fall_13_gpa, sq_spring_14_gpa.

Logistic regression was performed to ascertain the effects of Fall 2013 GPA and Spring 2014 GPA on the likelihood of students retaining to Fall 2014.

The model was statistically significant, $X^2(2) = 210.5$, $p < .001$. The model explained 30.9% (Nagelkerke R^2) of the variance in enrollment and correctly classified 84.3% of the cases. Of the two predictor variables, only one was statistically significant: Spring GPA.

Response: Partnership between AA and H&RL

Course Name	Number
General Biology	BIOL 104
Calculus I	MATH 109
Algebra and Elem. Functions	MATH 115
Calculus II	MATH 110
Introduction to Zoology	ZOOL 110
Intro Radio/TV/FILM	TFD 109B
General Botany	BOT 105
U.S. History to 1877	HIST 110
Cultural Anthropology	ANTH 104
General Chemistry	CHEM 109
Calculus for Bio / Sci	MATH 105
Elementary Statistics	STAT 108
Physical Geography	GEOG 106
Beginning Algebra	MATH 042
Intro to Human Communic.	COMM 105
Intro Statistics/Health Sci	STAT 106
Elementary Algebra	MATH 040
Intermediate Algebra	MATH 044

- Identify courses with high D/F/W rates and provide additional services
- Tutoring in residence halls

Example 2: Advanced Academic Behaviors

Q048. Academic Behaviors - To what degree are you the kind of person who: Participates in class
Q049. Academic Behaviors - To what degree are you the kind of person who: Communicates with instructors outside of class
Q050. Academic Behaviors - To what degree are you the kind of person who: Works on large projects well in advance of the due date
Q052. Advanced Study Skills - To what degree are you the kind of person who: Studies in a place where you can avoid distractions
Q053. Advanced Study Skills - To what degree are you the kind of person who: Studies on a regular schedule
Q054. Advanced Study Skills - To what degree are you the kind of person who: Reads the assigned readings within a day before class

Test 1: Paired T-test Fall Transition to Fall Check up

Paired Samples Statistics									
		Mean	N	Std. Deviation	Std. Error Mean				
Pair 1	squ_advanced_acad_behavior	2.1893	481	.26412	.01204				
	squ_advanced_acad_behaviorx	2.2373	481	.24806	.01131				
Paired Samples Test									
Paired Differences									
				95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)	
Mean	Std. Deviation	Std. Error Mean	Lower	Upper					
Pair 1	squ_advanced_acad_behavior - squ_advanced_acad_behaviorx	-.04801	.23702	.01081	-.06924 .02677	-4.442	480	.000	

Advanced academic behavior factor scores significantly increased by .045 points from fall transition ($M = 2.1893$, $SD = .2641$) to fall check up ($M = 2.23$, $SD = .248$), $t(480) = -4.442$, $p < .001$, $d = -.2025$

Does this change matter?

Example 2: Advanced Academic Behaviors (cont.) (bivariate correlations)

Fall Transition Advanced Academic Behavior Factor Score & GPA		Correlations	
		squ_advanced_acad_behavior	sq_fall_13_gpa
squ_advanced_acad_behavior	Pearson Correlation	1	.158**
	Sig. (2-tailed)		.000
	N	919	919
sq_fall_13_gpa	Pearson Correlation	.158**	1
	Sig. (2-tailed)	.000	
	N	919	926

** . Correlation is significant at the 0.01 level (2-tailed).

		squ_advanced_acad_behavior	sq_spring_14_gpa
squ_advanced_acad_behavior	Pearson Correlation	1	.151**
	Sig. (2-tailed)		.000
	N	919	919
sq_spring_14_gpa	Pearson Correlation	.151**	1
	Sig. (2-tailed)	.000	
	N	919	926

** . Correlation is significant at the 0.01 level (2-tailed).

Fall Check-Up Advanced Academic Behavior Factor Score & GPA		Correlations	
		squ_advanced_acad_behaviorx	sq_fall_13_gpa
squ_advanced_acad_behaviorx	Pearson Correlation	1	.256**
	Sig. (2-tailed)		.000
	N	482	482
sq_fall_13_gpa	Pearson Correlation	.256**	1
	Sig. (2-tailed)	.000	
	N	482	926

** . Correlation is significant at the 0.01 level (2-tailed).

		squ_advanced_acad_behaviorx	sq_spring_14_gpa
squ_advanced_acad_behaviorx	Pearson Correlation	1	.208**
	Sig. (2-tailed)		.000
	N	482	482
sq_spring_14_gpa	Pearson Correlation	.208**	1
	Sig. (2-tailed)	.000	
	N	482	926

** . Correlation is significant at the 0.01 level (2-tailed).

Example 2 Logistic Regression: Using GPA & Adv. Academic Behaviors to Predict Retention

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	85.247	4	.000
	Block	85.247	4	.000
	Model	85.247	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	395.585 ^a	.162	.257

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	squ_advanced_acad_behavior	.773	.564	1.878	1	.171	2.167
	squ_advanced_acad_behaviorx	-1.294	.660	3.845	1	.050	.274
	sq_fall_13_gpa	.661	.569	1.349	1	.245	1.937
	sq_spring_14_gpa	3.188	.673	22.446	1	.000	24.244
	Constant	-1.448	1.343	6.591	1	.059	.032

a. Variable(s) entered on step 1: squ_advanced_acad_behavior, squ_advanced_acad_behaviorx, sq_fall_13_gpa, sq_spring_14_gpa.

Logistic regression was performed to ascertain the effects Fall 2013 GPA, Spring 2014 GPA and Advanced Academic Behavior Factor Scores on the likelihood of students retaining to Fall 2014.

The model was statistically significant, $X^2(4) = 85.247$, $p < .001$. The model explained 25.7% (Nagelkerke R^2) of the variance in enrollment and correctly classified 84.5% of the cases. Of the four predictor variables, only two were statistically significant: Spring GPA and advanced academic behavior factor scores at check up.

Response: Further Review Needed

- Literature suggests increased participation in advanced academic behaviors such as discussing assignments outside of class; positively influences URM retention, particularly Males.
- Significance found in results indicate a need to further refine the model to study covariance between the relationships between these behaviors and retention among different student populations.

Considerations and Follow-up

- The statement “HSU is not like other campuses” has some merit. But we really don’t know what we are like.
- We need a comprehensive assessment of student characteristics beyond demographics to help design and deploy support programming.
 - Factors related to persistence—how do we encourage, model, and support?
- A need for a more robust assessment mechanism for support programs that results in actionable intelligence-grounded in theory, research design, and inferential statistics.
- Looking ahead- MAP works? EAB SSC? Etc.