

A photograph of a modern university building with a brown metal roof and large windows. The building is set against a blue sky with white clouds. In the foreground, there is a paved plaza with green grass patches and a large tree on the right side.

# Enrollment Management & Predictive Analytics

UNIVERSITY of HAWAII  
WEST O'AHU

UHWO PD Day - August 15, 2017  
John Stanley, Director, Institutional Research  
Jim Cromwell, Director, Enrollment Management

1. Provide latest enrollment and retention figures, disaggregated by target populations.
2. Describe UHWO's predictive analytics strategy for increasing student enrollment and retention.

Slides available at:

<http://www.uhwo.hawaii.edu/academics/oie/research-and-presentations/>



# Enrollment by the Numbers



- Point in time comparison with previous year.
- 2017 changes in registration dates affecting figures.
- Numbers could level off by September.
- UH Manoa utilizing aggressive recruitment strategies.

View by Headcount | View by SSH

Opening Enrollment (Headcount, For-Credit Students only) as of: **August 15**

	Fall 2017	%C	Fall 2016	%C	Fall 2015	%C	Fall 2014	%C	Fall 2013
<b>UH*</b>	<b>47,391*</b>	<b>-2.3*</b>	<b>48,484</b>	<b>-4.5</b>	<b>50,748</b>	<b>-0.2</b>	<b>50,867</b>	<b>-5.3</b>	<b>53,710</b>
Mānoa*	15,950*	1.2*	15,760	-5.5	16,672	-1.1	16,860	-4.8	17,713
Hilo	3,277	-2.6	3,366	-5.0	3,542	-3.3	3,664	-0.5	3,684
West O'ahu	2,794	-0.7	2,814	11.8	2,517	6.0	2,375	10.1	2,158
<b>UHCC</b>	<b>25,370</b>	<b>-4.4</b>	<b>26,544</b>	<b>-5.3</b>	<b>28,017</b>	<b>0.2</b>	<b>27,968</b>	<b>-7.3</b>	<b>30,155</b>
Hawai'i Community College	2,508	-5.3	2,648	0.3	2,639	-3.8	2,743	-12.8	3,147
Honolulu Community College	3,389	-9.8	3,758	-9.0	4,129	6.7	3,870	-6.8	4,153
Kapi'olani Community College	6,586	-5.2	6,945	-6.3	7,414	-0.5	7,455	-6.0	7,934
Kaua'i Community College	1,137	-4.7	1,193	-1.4	1,210	-3.7	1,256	-10.2	1,399
Leeward Community College	6,366	-4.1	6,640	-4.2	6,930	2.1	6,788	-5.3	7,170
Maui College	3,142	1.8	3,085	-8.6	3,375	-4.3	3,528	-7.1	3,797
Windward Community College	2,242	-1.5	2,275	-1.9	2,320	-0.3	2,328	-8.9	2,555

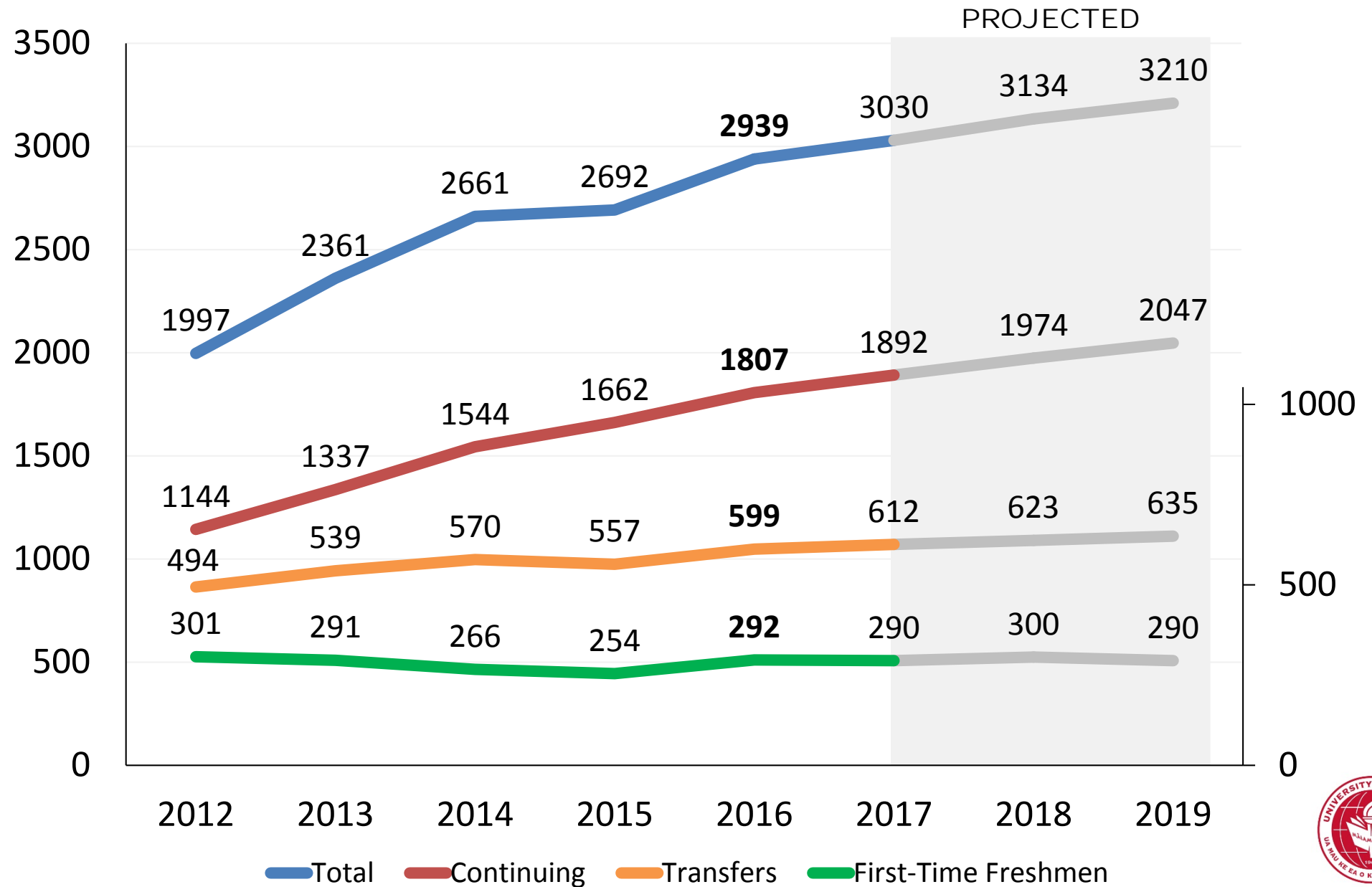
\* Fall 2017 registration for all new students began on May 22, compared to August 10 for Fall 2016. Therefore, the comparable data between Fall 2017 and Fall 2016 show an increase that is due to the earlier registration for Fall 2017.

Source: [www.hawaii.edu/iro](http://www.hawaii.edu/iro)

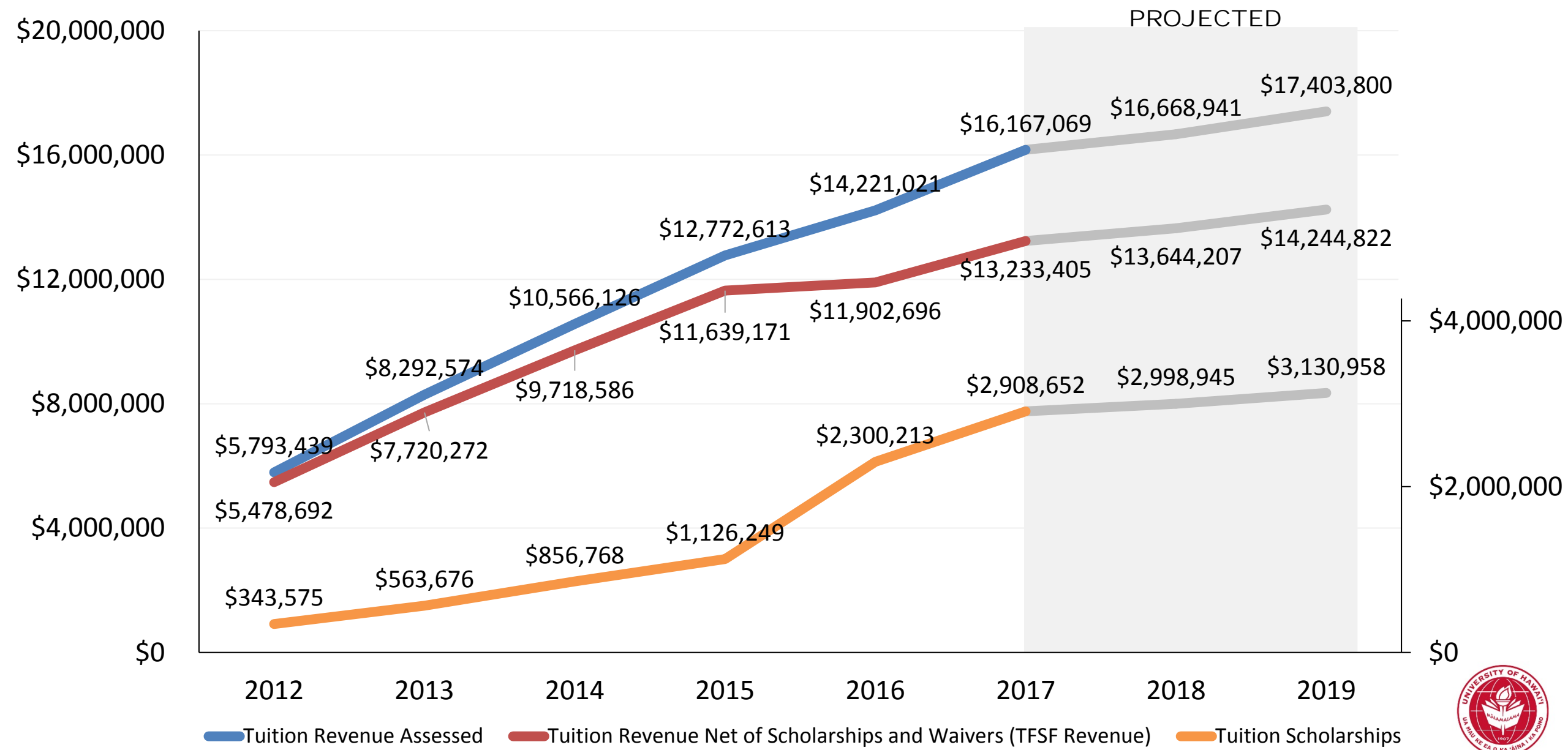


# Historical and Projected Enrollment

- Rapid 33% growth, 2012 to 2014 with new campus.
- Since then, modest growth among transfers; freshmen consistently between 250-300 students.
- Total growth dependent on new and continuing students, minus graduating students.
- Real-time enrollment figures currently tracking < 3,000.

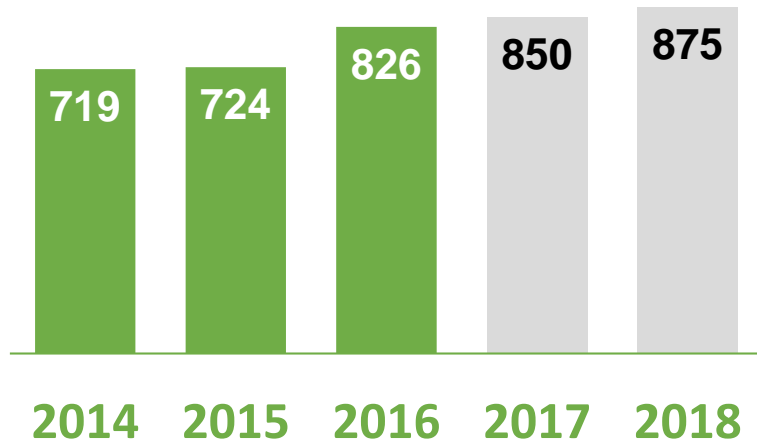


# Historical and Projected Tuition Revenues

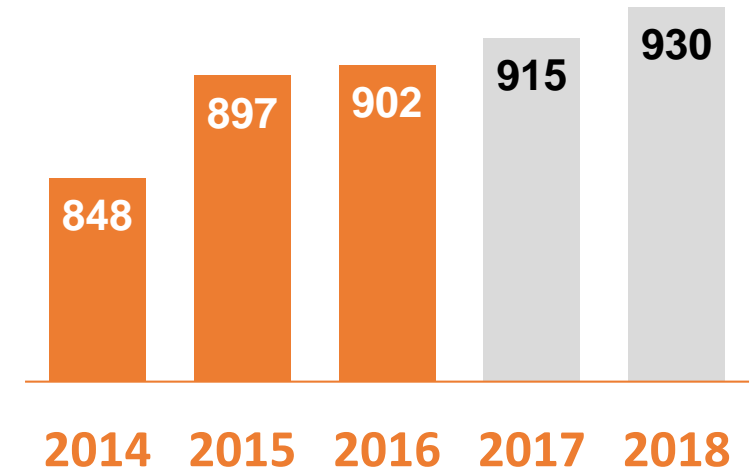


# Student Populations of Interest

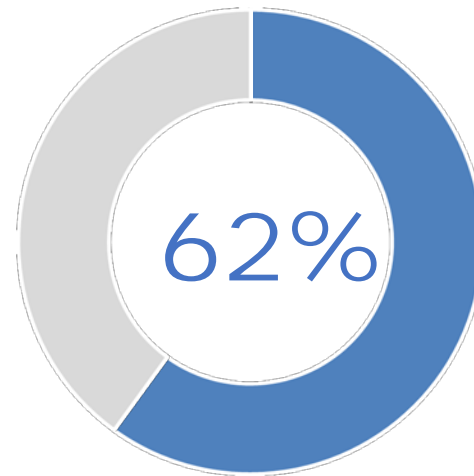
### Native/Part Hawaiians



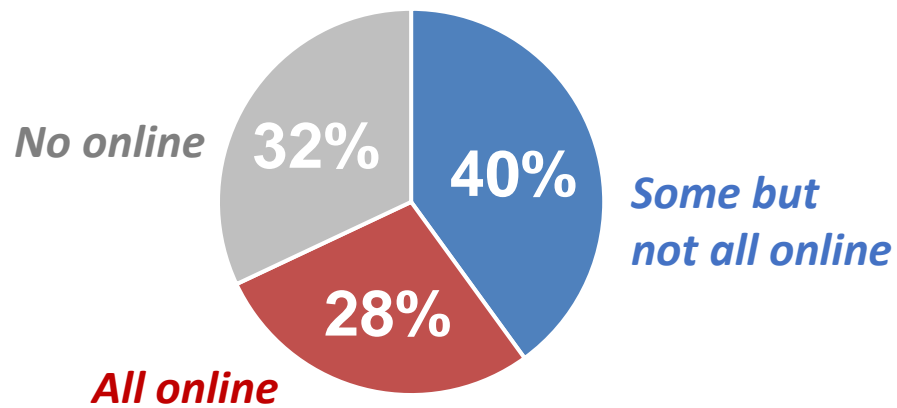
### Pell Eligible



### Receiving Financial Aid



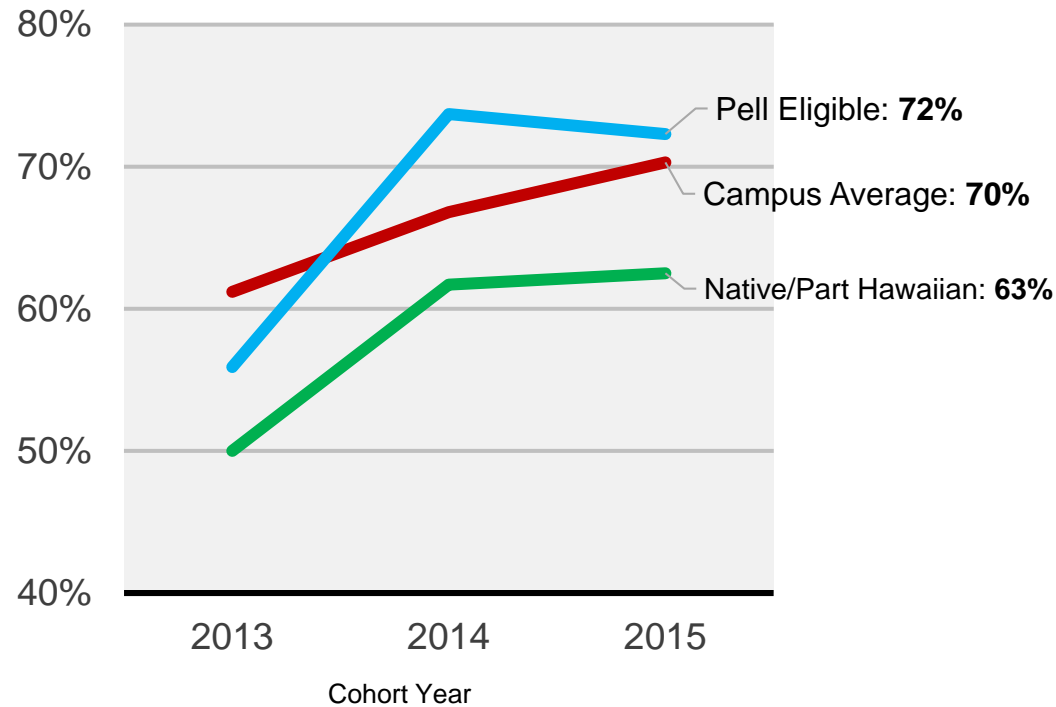
### Online



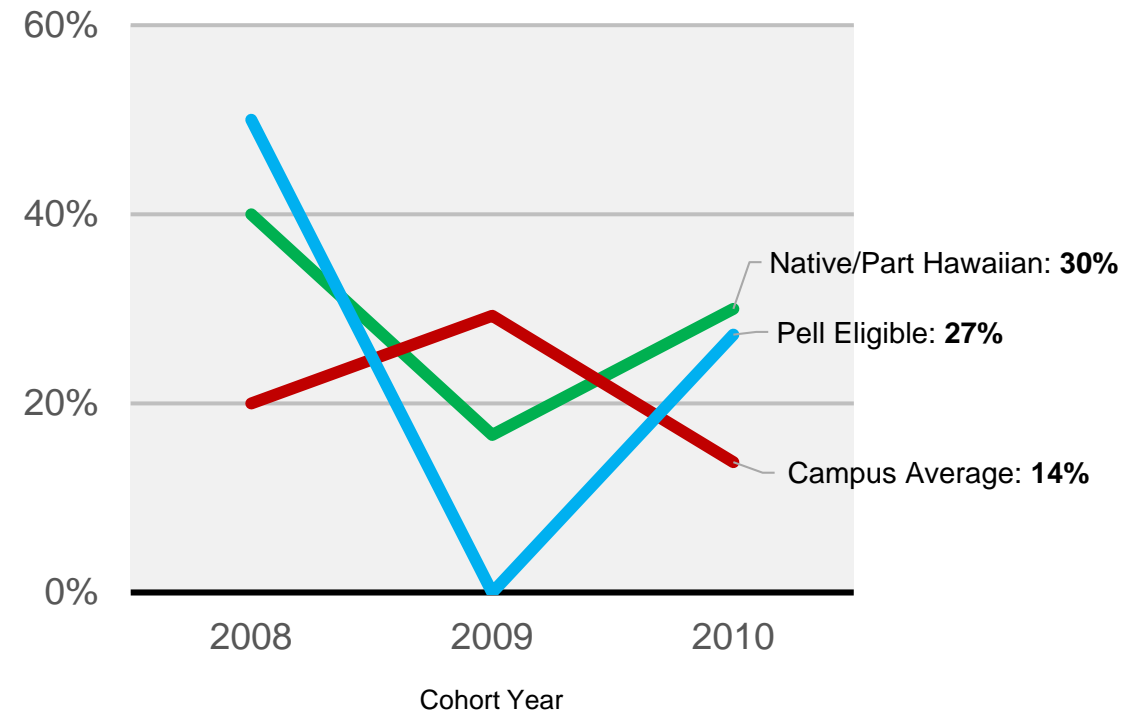
### Distance Education



## First-Time Retention



## First-Time 150% Graduation



- Retention rates, although steadily improving, show persistent achievement gaps among Native/Part Hawaiian students.
- Due to small population of cohorts (N= 25, 41, & 29 respectively), caution should be used when interpreting 150% graduation rates.





UNIVERSITY  
of HAWAII<sup>®</sup>  
WEST O'AHU

Applied Science

General

Public Administration

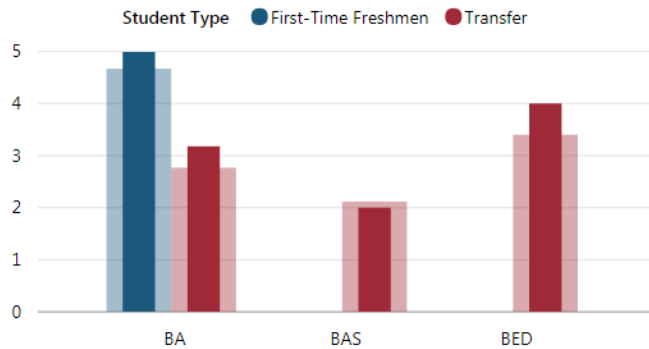
Business Administration

Humanities

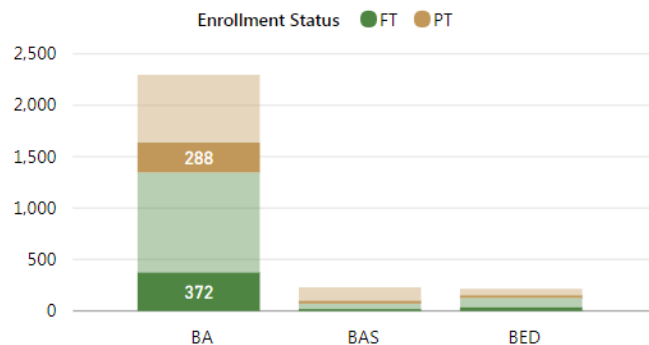
Social Science

Education

Time-to-Degree by Degree Program (AY 2016)



Enrollment - Fall 2016

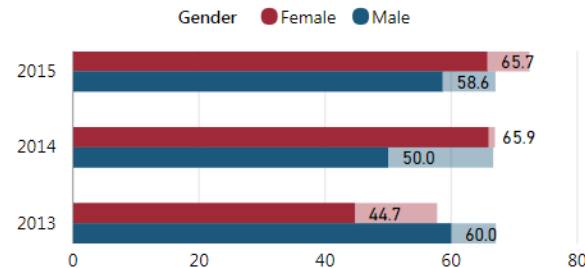


## Student Success

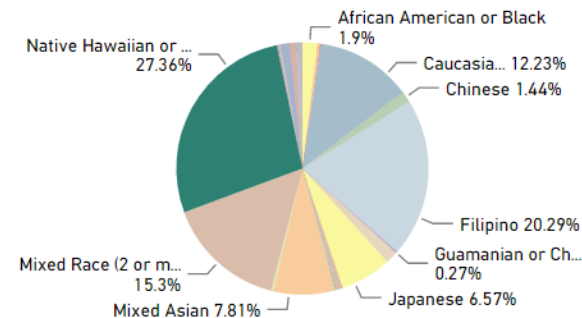
The University of Hawai'i – West O'ahu is committed to creating and fostering a campus environment that embraces diversity, values students as important members of our campus community, and respects and appreciates the diverse perspectives, lifestyles, cultures, and ethnicities of all students. UH West O'ahu believes that student success is enhanced by a vibrant campus life experience that inspires students to engage in their campus community and in the greater community, thereby developing their skills as global citizens.

Whether it is the self-directed, independent thinker who takes distance education courses online or the engaged, articulate student government leader active in clubs and events, the "typical" UH West O'ahu student and his or her classmates are diverse with wide-ranging interests.

First-Time Full-Time Freshmen Retention Rates by Gender



Class of 2016 - Student Diversity



Total Enrollment - Fall 2016

2939

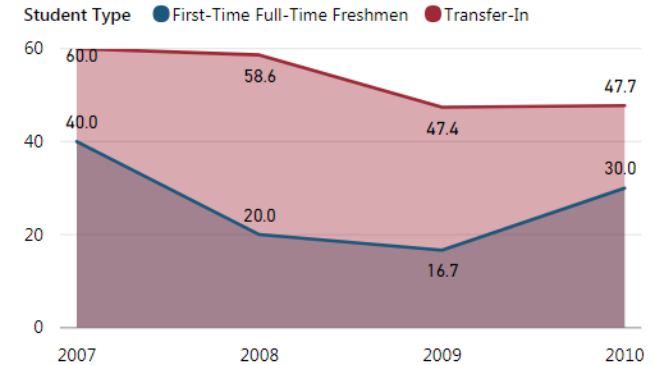
Degrees Awards - AY 2016

474

UH West O'ahu has moved into a new phase of growth with the transition to a full four-year university in 2007. The expanded capacity allows UH West O'ahu to serve both regional and statewide educational needs. A four-year, indigenous-serving institution, UH West O'ahu provides an intellectually challenging higher education experience in a supportive setting, offering more than 30 academic concentrations in six degree programs designed for career success.

The programs of the University are designed to be responsive to the needs of our students. UH West O'ahu faculty are engaged in three basic types of activities: teaching, research, and service. The University's curriculum offerings are founded on the principle that career training, the humanities, and social sciences are complementary.

150% Graduation Rates by Student Type



University of Hawai'i - West Oahu

91-1001 Farrington Hwy, Kapolei, HI 96707

Phone: (808) 689-2800

Toll Free: 1-888-299-8656

Admissions: (808) 689-2900

Available at:

<http://www.uhwo.hawaii.edu/academics/oie/>





# Performance Funding 2016-17

Measure	Baseline	Goal	Actual	%	Weight	Amount
Degrees and Certificates	380	399	474	200%	30	\$195,282
Degrees and Certificates - Native Hawaiian	84	88	116	200%	15	\$97,641
Degrees and Certificates - STEM	NA	NA	NA	NA	0	NA
Degrees and Certificates - Pell Recipients	205	215	263	200%	10	\$65,094
Graduation Rate 150%	25	29.8	13.8	0%	30	\$0
Transfers in from UHCC F15/Spr16	639	652	700	200%	15	\$97,641
Total Allocation						\$455,658

Source: UH System



# First-Time Student Tracking

## GRADUATION AND RETENTION RATE SUMMARY UH WEST O'AHU FIRST-TIME, FULL-TIME STUDENTS

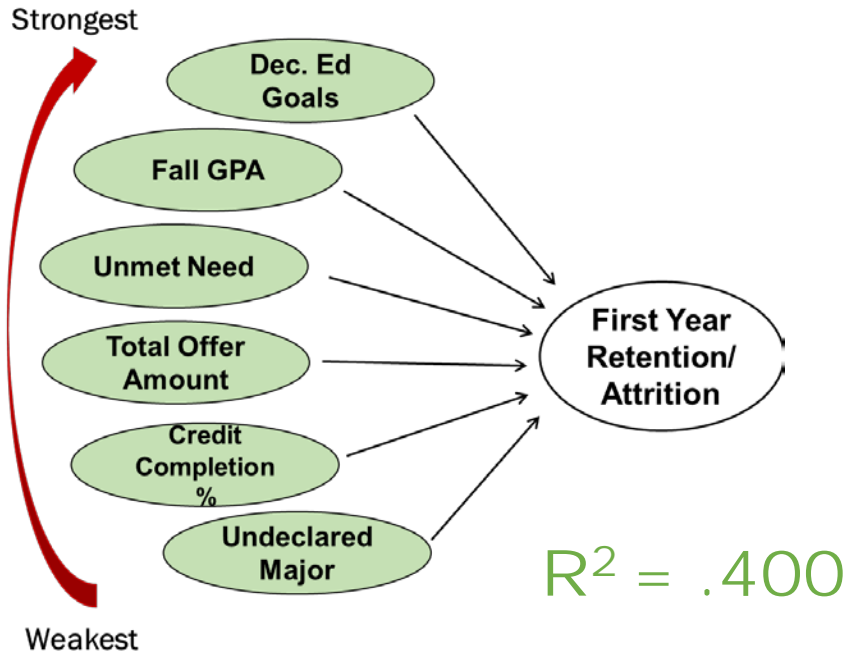
COHORT	Count	ENROLLED, FALL (%)								GRADUATION (%)		
		2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	4YR	5YR	6YR
Fall 2007	16	68.8	50	56.3	37.5	12.5	6.3	0	0	6.3	25	25
Fall 2008	25	60	52	48	44	20	8	4	8	8	32	40
Fall 2009	41	56.1	39	31.7	24.4	7.3	7.3	4.9		9.8	24.4	29.3
Fall 2010	29	37.9	34.5	27.6	17.2	10.3	6.9			0	10.3	13.8
Fall 2011	36	66.7	52.8	52.8	30.6	11.1				16.7	33.3	
Fall 2012	161	67.7	45.3	40.4	29.8					9.9		
Fall 2013	214	61.2	38.3	34.6								
Fall 2014	196	66.8	51									
Fall 2015	239	70.3										
Fall 2016	266											

2<sup>nd</sup> year retention  
good relative to peers

3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> year persistence concerning;  
affecting graduation rates.

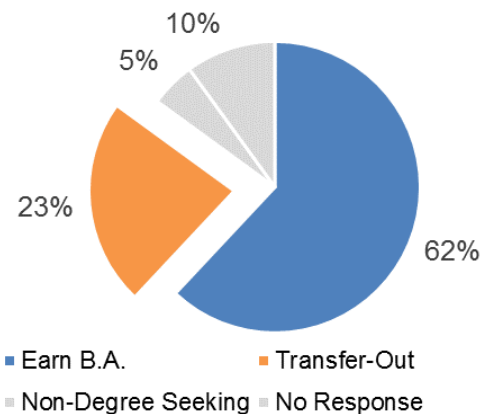


## 1. Statistical Model (End-of-semester)



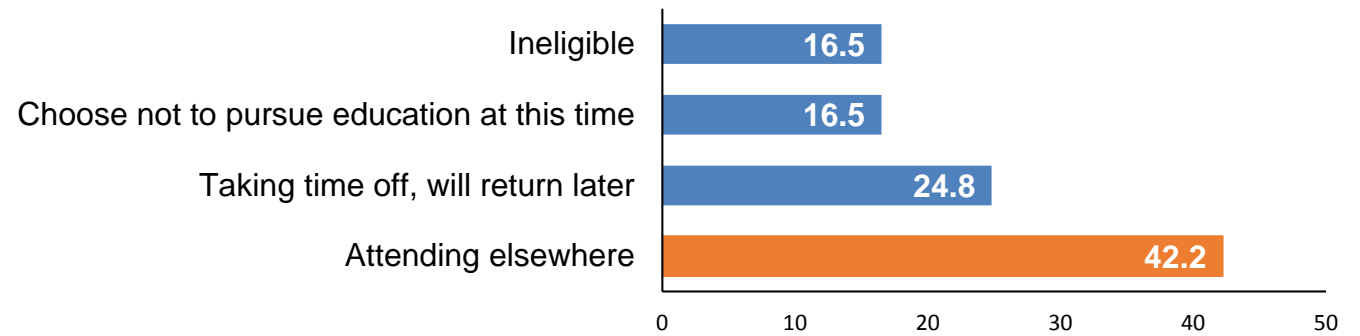
## 2. Ed. Goals Survey

*What is your immediate educational goal at this campus?*

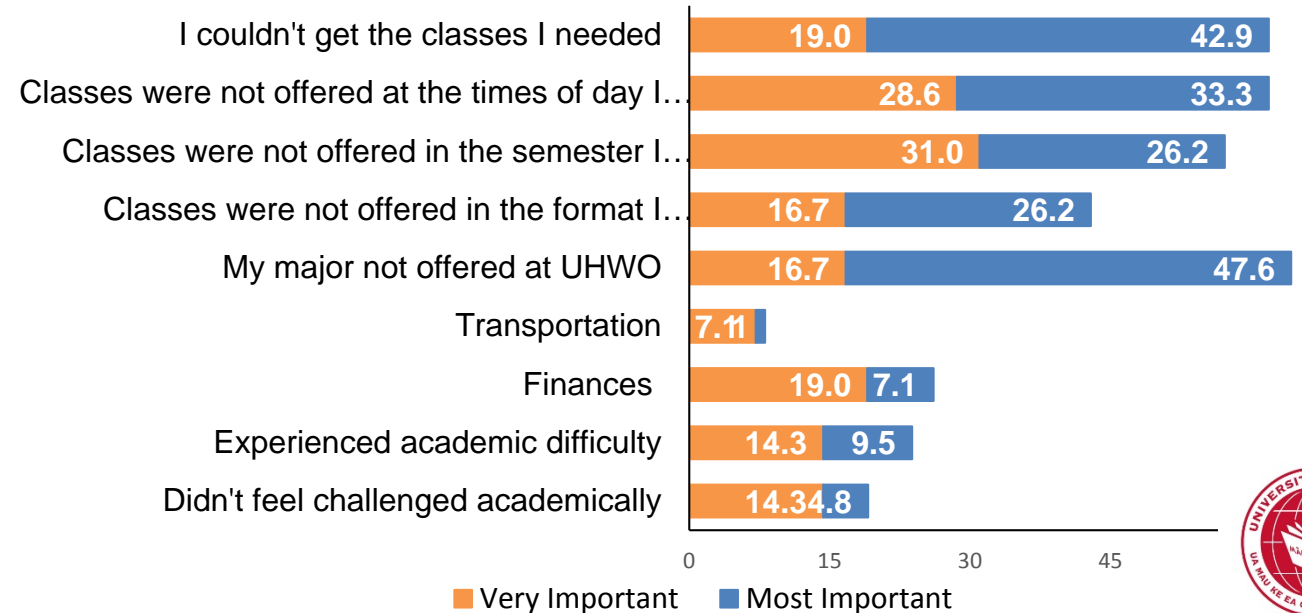


## 3. Leavers Survey

### Reasons For Not Re-Enrolling



### Reasons Why Students Transferred to Other UH Campus



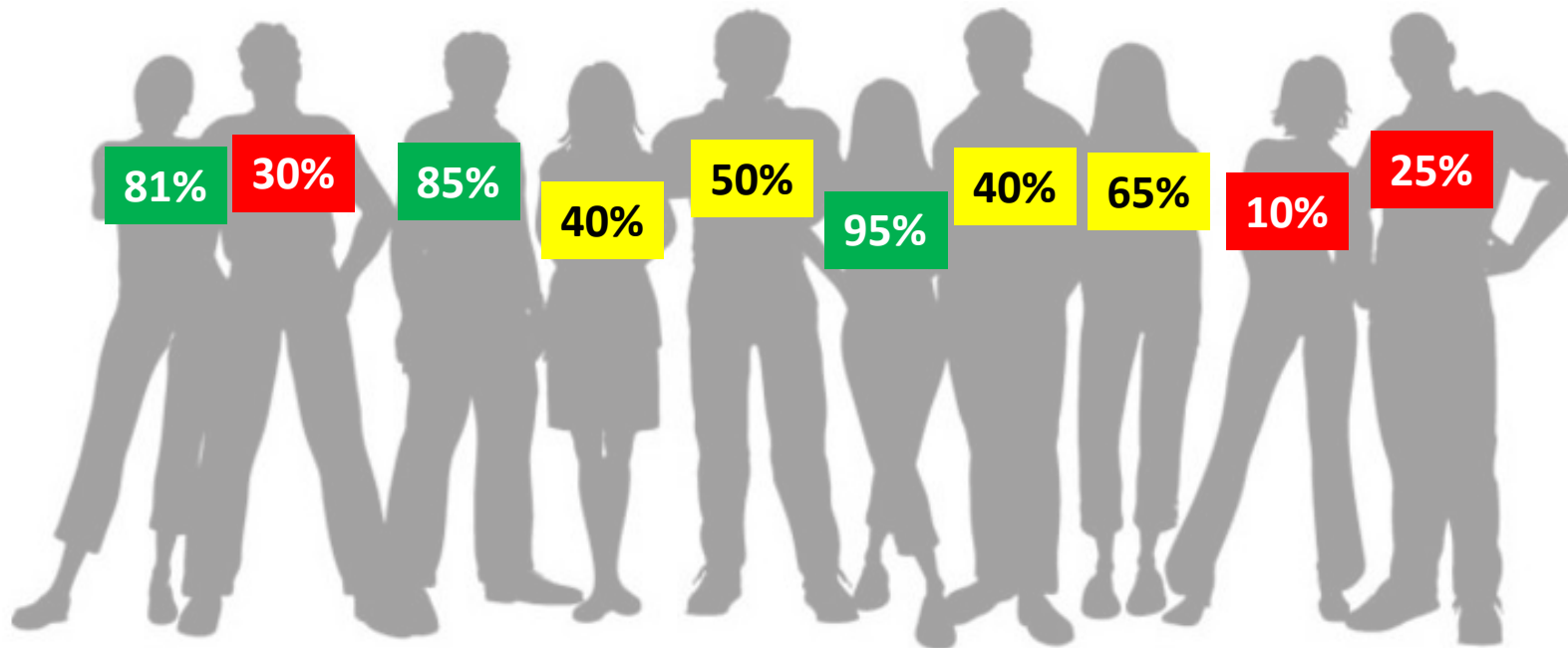
# Enrollment Targets\*

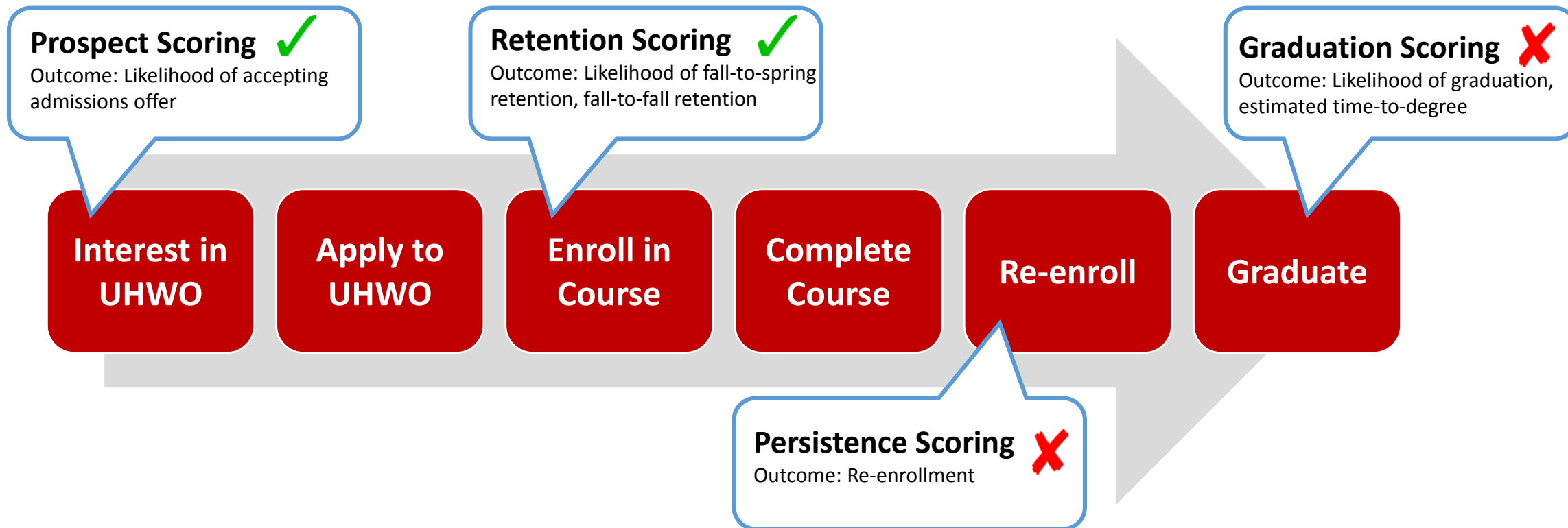
Priority	Measure	2016	Past 3-Year Avg. Growth	5 Year Target	Change	5-Year % Change
1	Total Enrollment	2939	10.5%	4625	1686	52%
2	Academic Majors	6	0	12	6	100%
3	Freshmen Retention	70.3	3%	72%	1.7	1.7%
4	6 Year Graduation Rate	29.3	31% avg	41%	10.5	100.5%
5	Freshmen Entering Class	292	9.8%	380	88	30%
6	Transfer Entering Class	599	2.7%	680	81	13%

*\*Official targets per 2017 UH System Enrollment Management Initiative*



- Uses historical data to predict or forecast future behaviors, trends, or outcomes.  
(i.e. enrollment likelihood, retention, course success, degree completion/time-to-degree, etc.)





- ✓ UHWO currently implementing this practice.
- ✗ UHWO not currently implementing this practice.



## Two active initiatives at UHWO:

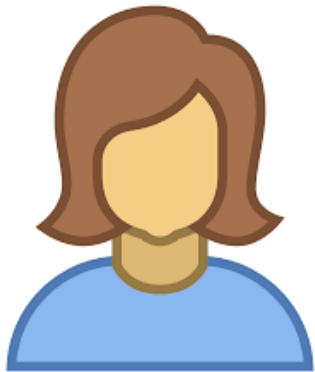
1. In-house development of custom prediction models by UHWO Institutional Research Office.
2. Starfish© early alert software administered by UHWO Student Affairs.



## EXAMPLE

# 1.

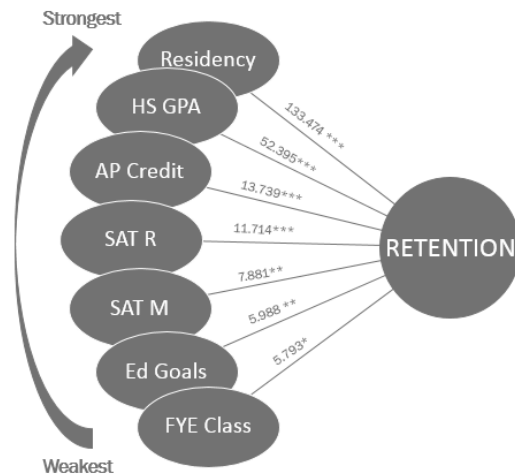
Data collected from student information system.



10110101  
11010001

# 2.

Train and validate prediction model using standard statistical methods.



# 3.

Prediction estimates calculated per student



**%75**

**New student at the beginning of their first semester:**

- First Generation
- High School GPA (2.89)
- Registered for 12 credits
- Lower socio-economic
- Undeclared major
- No freshmen exp. course
- No educational goals survey completed

Probability of Drop-Out:

**75%**





# Sample data for faculty and advisors

ID	LAST NAME	FIRST NAME	EMAIL	CURRENT CREDITS	RESIDENT	AP/ CLEP	HS GPA	WORK ON CAMP	1st YR EXP CLASS	% FIN NEED MET	STAR LOGINS	ADVISOR PREVIOUS CONTACT
001				15	HI	6	3.80	Y	Y	77%	5	Y
002				14	HI	0	3.33	N	Y	63%	3	N
003				12	CA	6	3.00	N	N	45%	0	N

ID	AGE	GENDER	ETHNICITY	COLLEGE	MAJOR	DEGREE	Ed Goal Specified	Relative Risk Value	Risk Level
001	18	F	CH	CA&H	ART	BA	Yes	14.92	LOW
002	18	F	HW	CSS	SOC	BA	Yes	36.88	MEDIUM
003	18	M	UNDEC	UNDEC	UNDEC	UNDEC	No	89.18	HIGH



## John

- First Generation
- SAT Combined = 900
- H.S. GPA = 2.99
- 75% Unmet Financial Need
- Undeclared



- Dropout risk probability: **70%**
- Risk group: **7 of 10 (moderate risk)**

### Intervention strategy:

- Proactive advising
- Meta major pathway mapping
- Revisit financial aid support
- Check for ill-advised registration choices

## Jim

- SAT Combined = 1100
- H.S. GPA = 3.50
- Accounting Major
- 15 credits registration
- Educational Goals = “Earn B.A.”



- Dropout risk probability: **10%**
- Risk group: **1 of 10 (low risk)**

### Intervention strategy:

- Monitor *Starfish* reporting
- Mid-semester check-in
- Re-assess dropout risk at end-of-semester

- 51 faculty/lecturers participated (32% of all faculty and lecturers).
- 87% of student referrals submitted were “kudos” (1,133 of 1,306).
- 100 students referred to academic advising (3.6% of Spring 2017 enrollment).
- 51 students referred for academic support.



## Affordability

- ~~Infrastructure~~
- ~~Technology~~
- ~~People/Expertise~~
- ~~Opportunity Costs~~

## Data availability

- ~~Student Information System~~
- Learning Management System
- ~~Budget/ Human Resource Silos~~

## Implementation of predictive data

- Senior-level coordination
- Culture change
- Wary of misuse of data
- Questions about data used to generate scores
- Students' access to risk scores



## Enrollment Management Work Group

- Judy Oliveira, Co-Chair
- Jeff Moniz, Co-Chair
- Jan Javinar
- Jim Cromwell
- Stefanie Wilson
- John Stanley
- John Murakami
- Bonnie Arakawa
- Garyn Tsuru
- Leila Shimokawa

