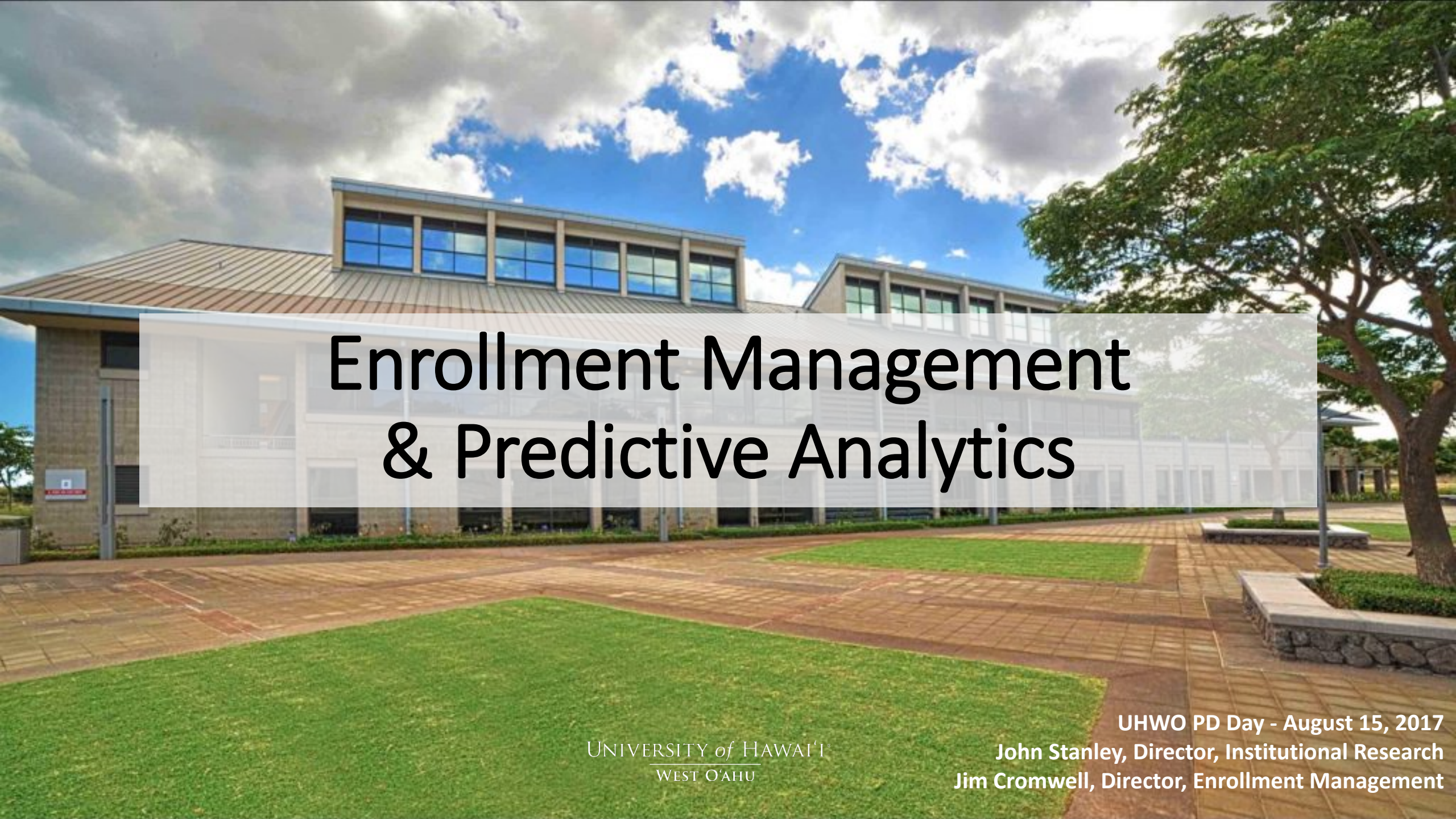


# Enrollment Management & Predictive Analytics

UNIVERSITY of HAWAI'I
WEST O'AHU

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

# Today's Objectives



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

UNIVERSITY of HAWAI'I® WEST O'AHU

- 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 |
|---|---|---|---|---|---|---|---|---|---|
| **UH*** | **47,391*** | ***-2.3**** | **48,484** | ***-4.5*** | **50,748** | ***-0.2*** | **50,867** | ***-5.3*** | **53,710** |
| 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 |
| **UHCC** | **25,370** | ***-4.4*** | **26,544** | ***-5.3*** | **28,017** | ***0.2*** | **27,968** | ***-7.3*** | **30,155** |
| 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 |

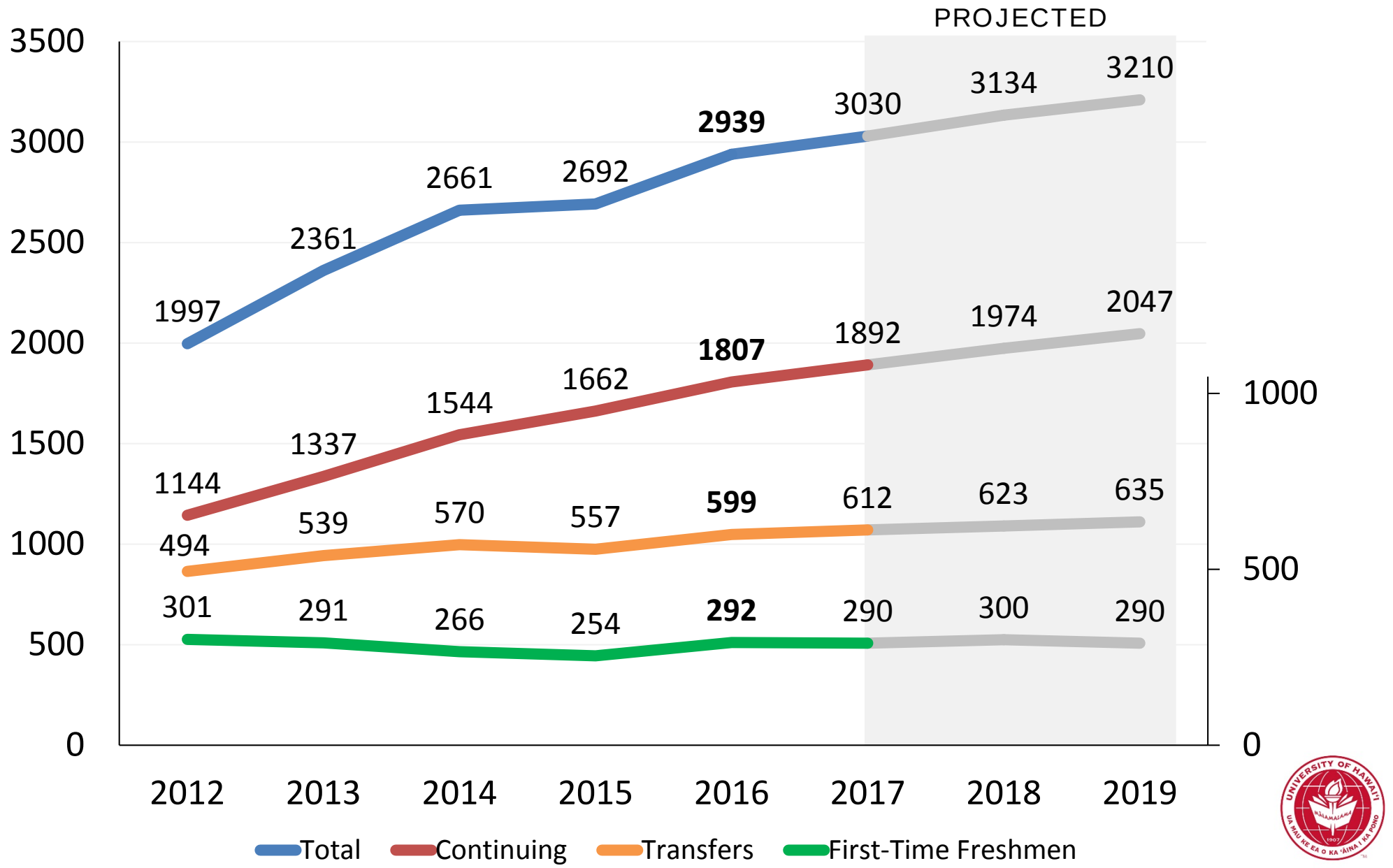
* Fall 2017 registration for all new students began on May 22, compared to August 10 for Fall 2016. Therefore, the comparable data between Fall 2017 and Fall 2016 show an increase that is due to the earlier registration for Fall 2017.

**Source: www.hawaii.edu/iro**

# Historical and Projected Enrollment

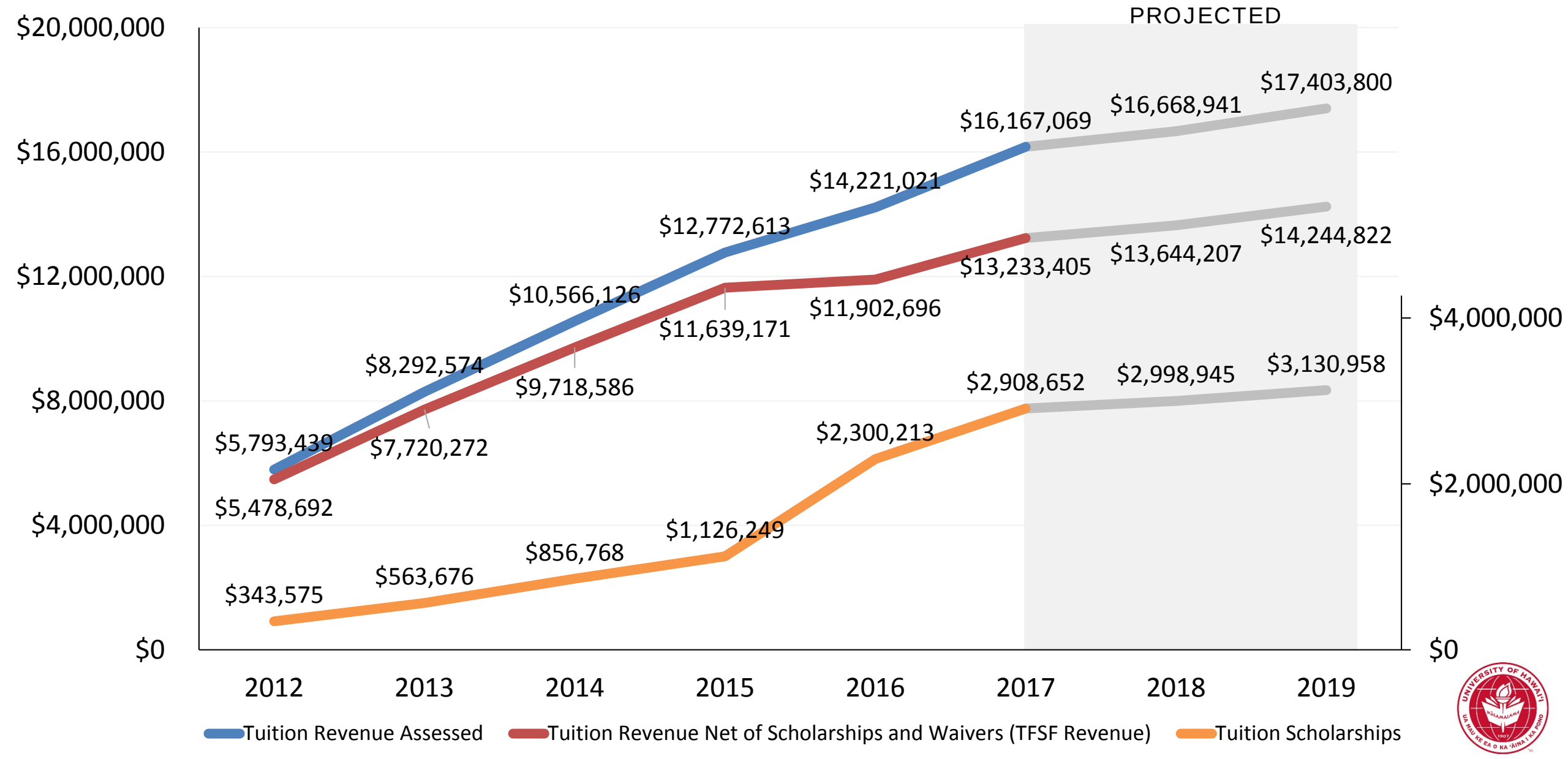
UNIVERSITY of HAWAI'I® WEST O'AHU

- 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

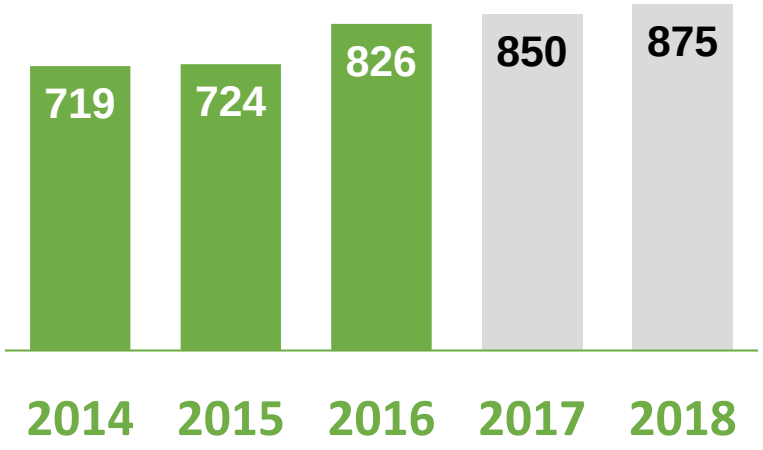
UNIVERSITY of HAWAI'I WEST O'AHU



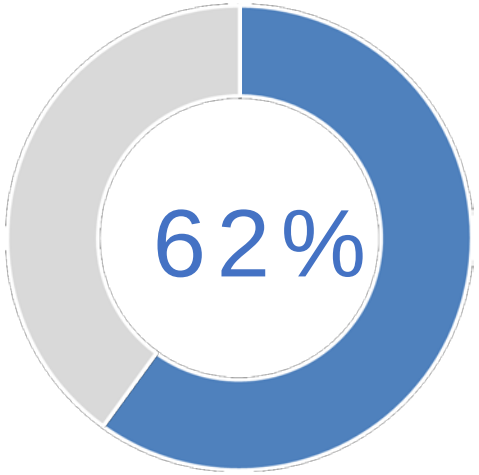
# Student Populations of Interest

UNIVERSITY of HAWAI'I WEST O'AHU

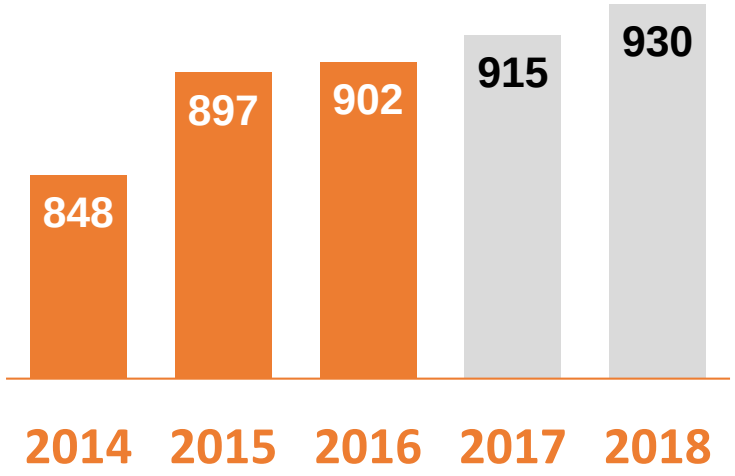
## Native/Part Hawaiians



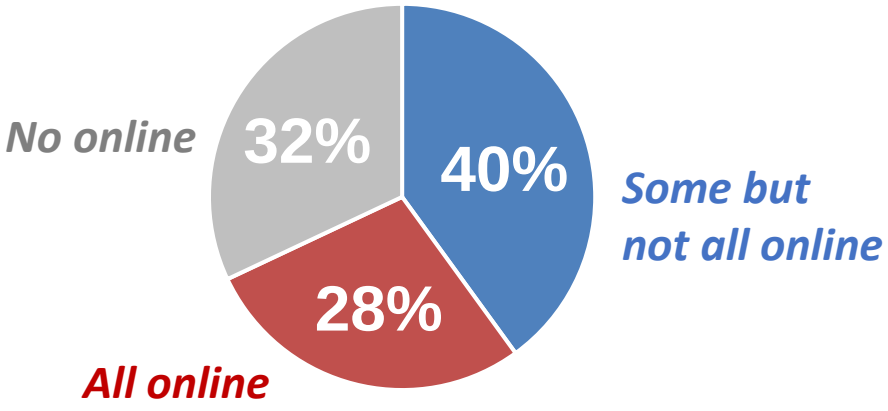

## Receiving Financial Aid




## Pell Eligible




## Online

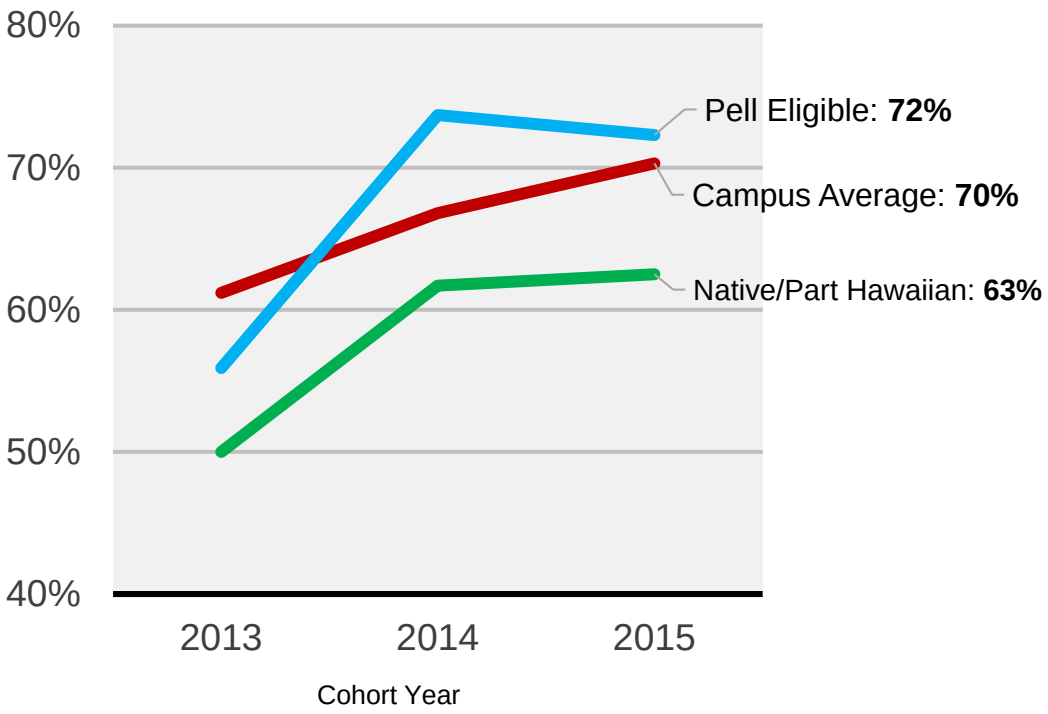



## Distance Education

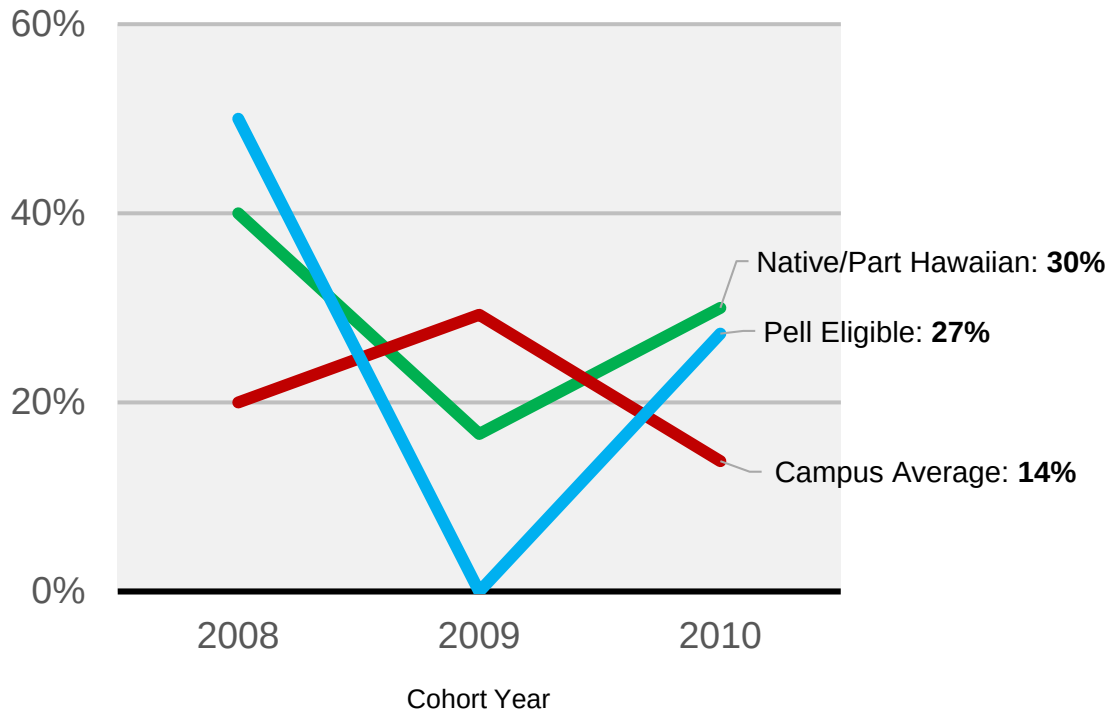
# Achievement Gaps

UNIVERSITY of HAWAI'I WEST O'AHU

## 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.

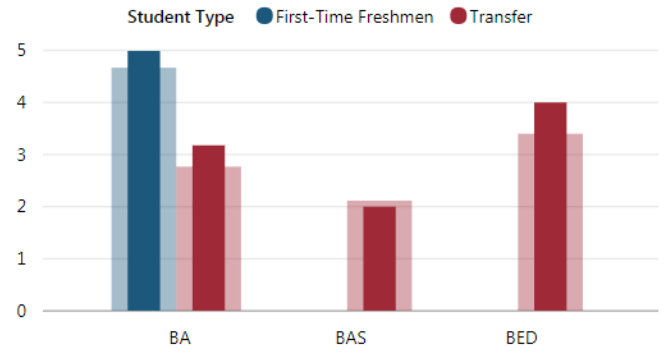
# Interactive Monitoring of Student Success

UNIVERSITY of HAWAI'I® WEST O'AHU

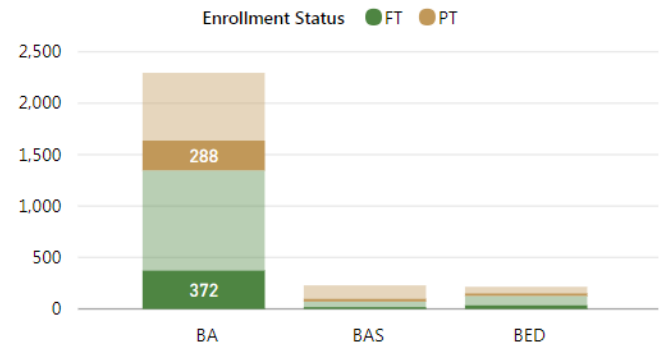
UNIVERSITY of HAWAI'I® WEST O'AHU

Applied Science | General | Public Administration
Business Administration | Humanities | Social Science
Education

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




## Enrollment - Fall 2016

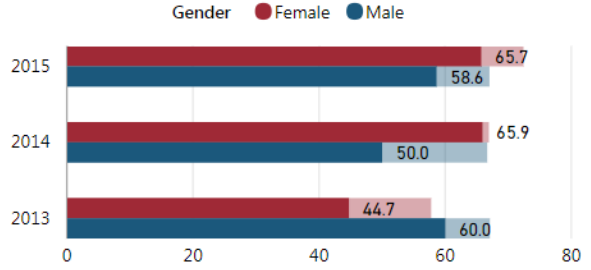



# Student Success

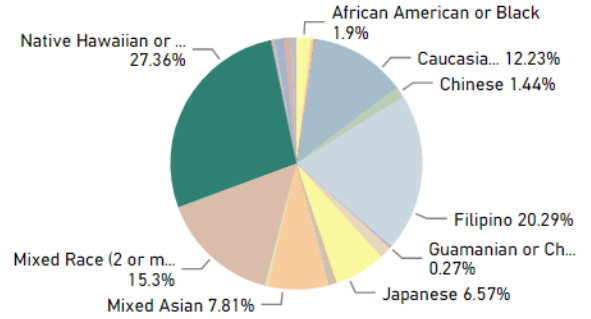
The University of Hawai'i – West O'ahu is committed to creating and fostering a campus environment that embraces diversity, values students as important members of our campus community, and respects and appreciates the diverse perspectives, lifestyles, cultures, and ethnicities of all students. UH West 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

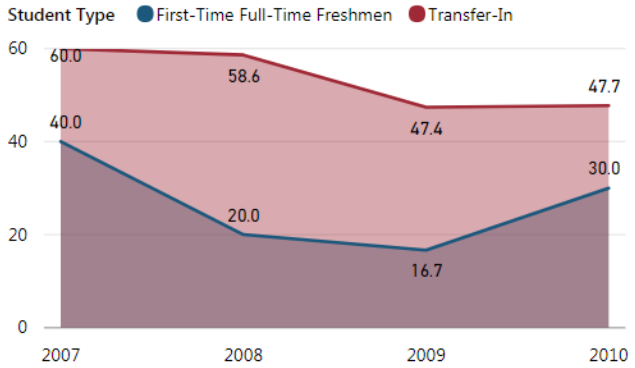



| Total Enrollment - Fall 2016 | Degrees Awards - AY 2016 |
|---|---|
| 2939 | 474 |

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
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Toll Free: 1-888-299-8656
Admissions: (808) 689-2900


Available at:
http://www.uhwo.hawaii.edu/academics/oie/

UNIVERSITY OF HAWAI'I® UA MAU KE EA O KA 'AINA I KA PONO

# Performance Funding 2016-17

UNIVERSITY of HAWAI'I WEST O'AHU

| 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

UNIVERSITY of HAWAI'I WEST O'AHU

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

| | | ENROLLED, FALL (%) | | | | | | | | GRADUATION (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| COHORT | Count | 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 | | | | | | | | | | | |

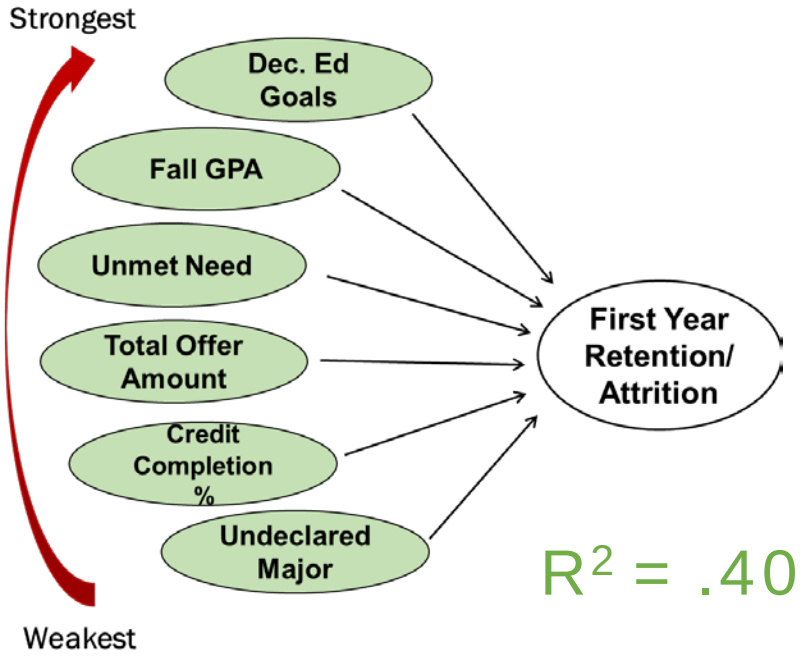
**2nd year retention good relative to peers**

**3rd, 4th, 5th year persistence concerning; affecting graduation rates.**

# Triangulating Student Departure Factors

UNIVERSITY of HAWAI'I WEST O'AHU

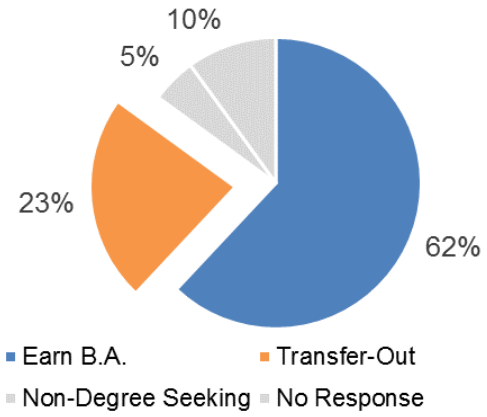
## 1. Statistical Model (End-of-semester)




$R^2 = .400$

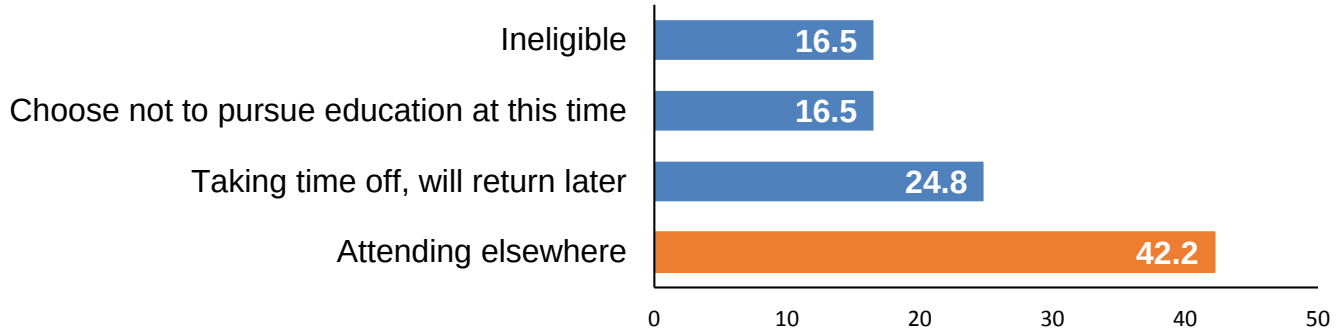
## 2. Ed. Goals Survey

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

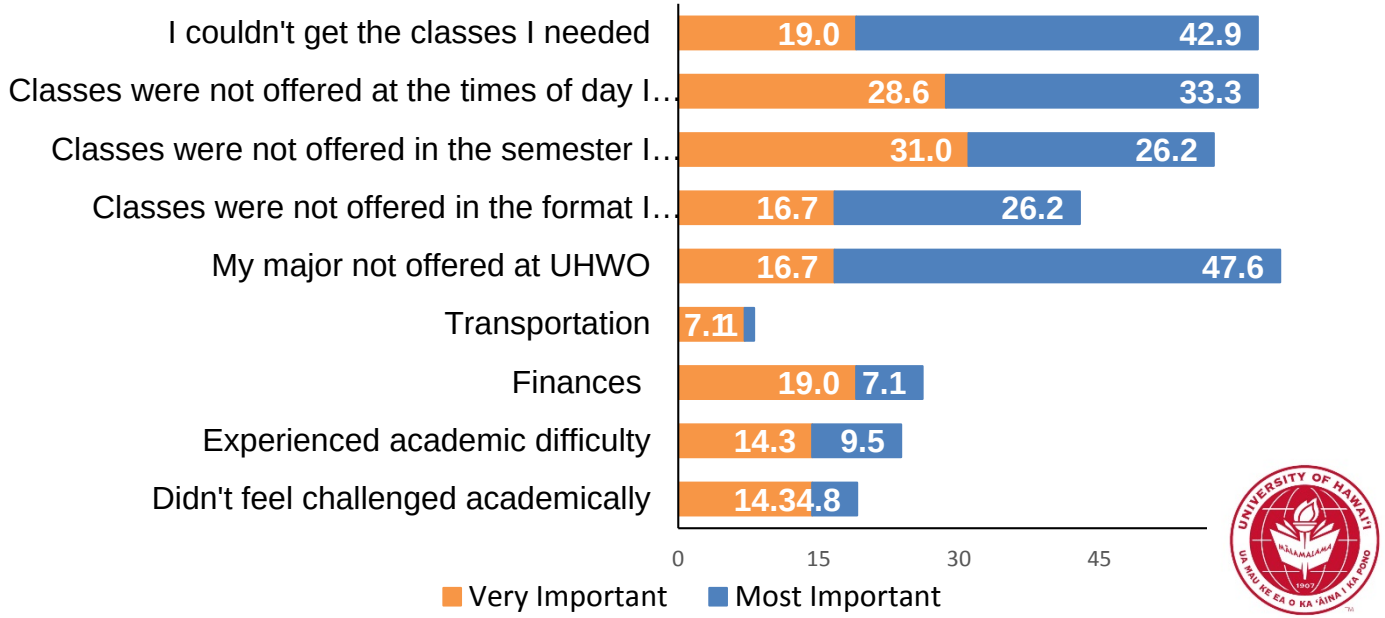



## 3. Leavers Survey

### Reasons For Not Re-Enrolling




### Reasons Why Students Transferred to Other UH Campus



# Enrollment Targets*

UNIVERSITY of HAWAI'I® WEST O'AHU

| 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% |

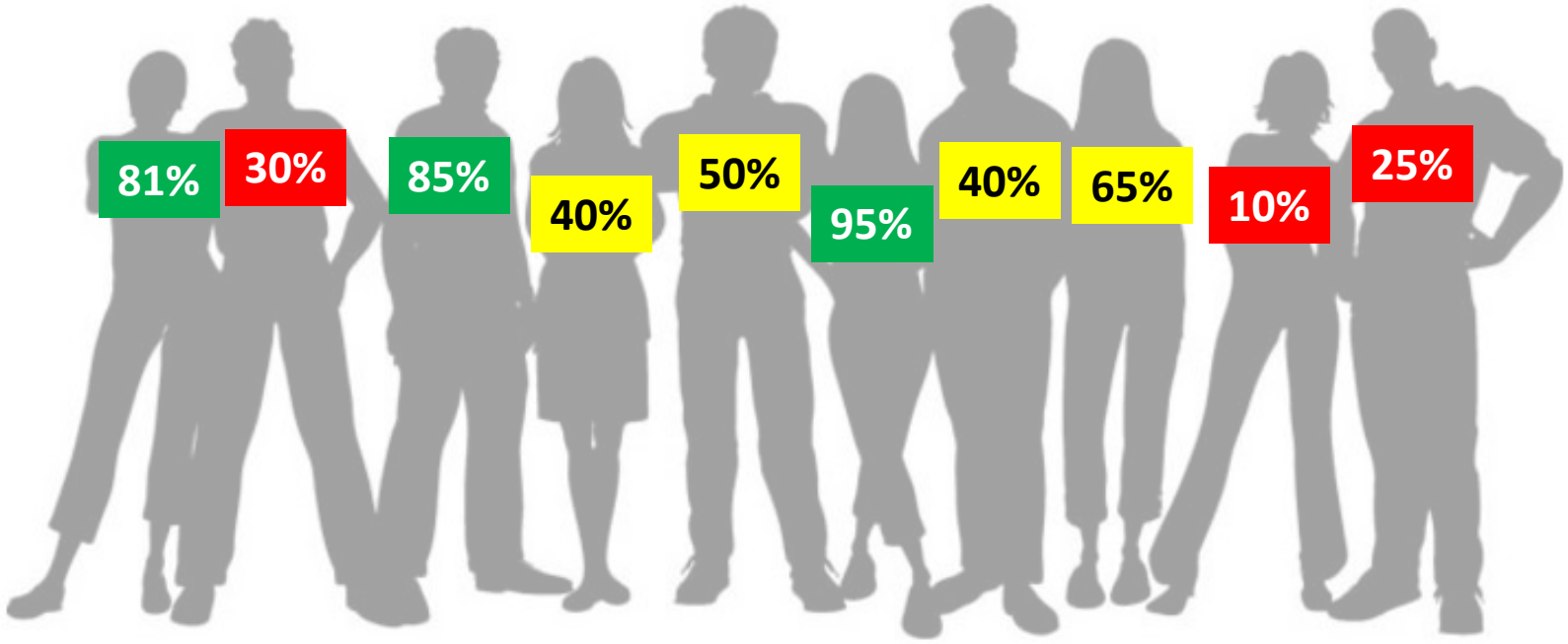
**Official targets per 2017 UH System Enrollment Management Initiative*

# What is Predictive Analytics?



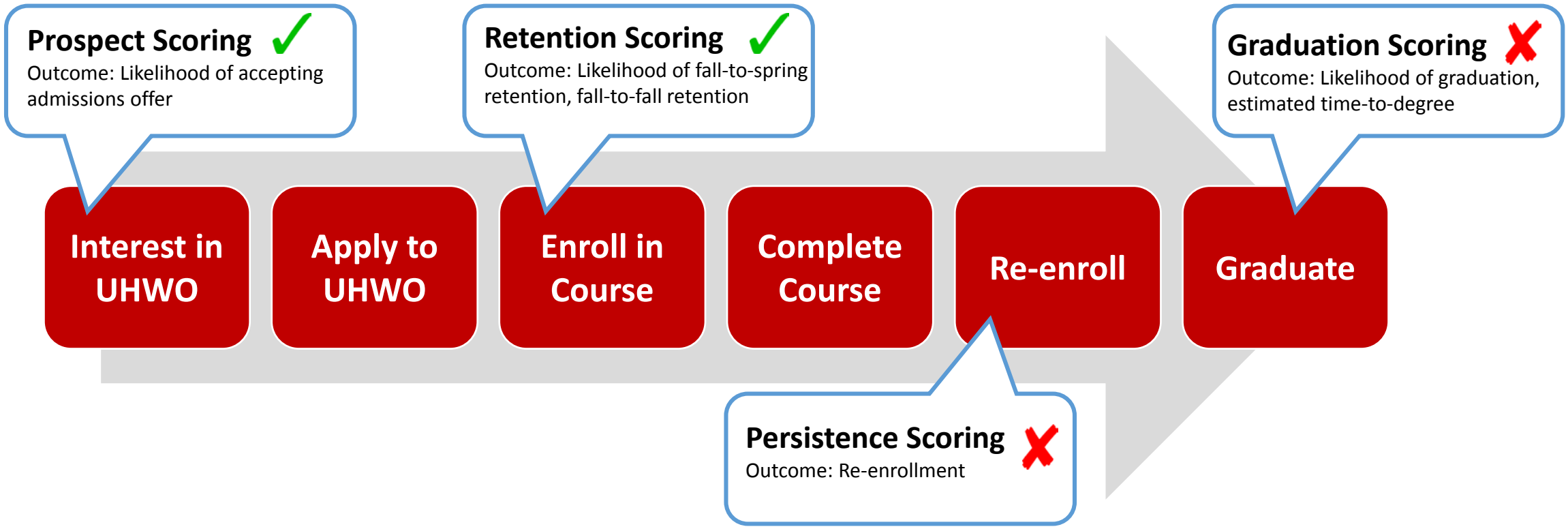
- Uses historical data to predict or forecast future behaviors, trends, or outcomes.

  (i.e. enrollment likelihood, retention, course success, degree completion/time-to-degree, etc.)



# Predictive Analytics for the Enrollment "Pipeline"

UNIVERSITY of HAWAI'I® WEST O'AHU




✓ 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.

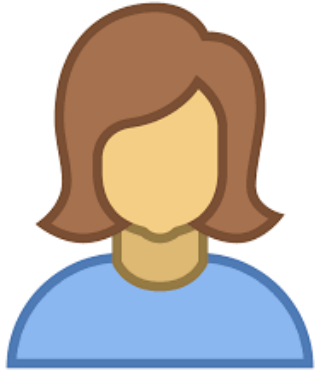
Starfish by HOBSONS

# How does predictive modeling work?

UNIVERSITY of HAWAI'I® WEST O'AHU

## 1.

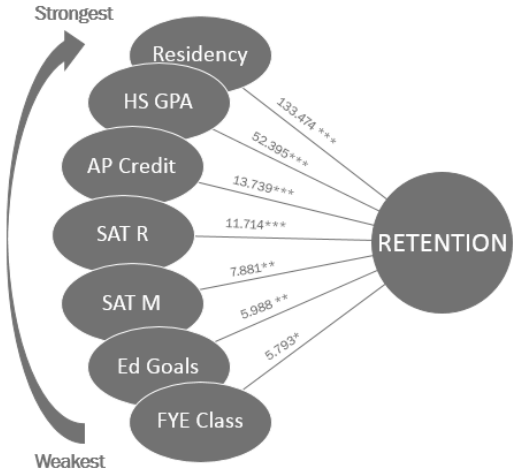
Data collected from student information system.



**10110101**
**11010001**

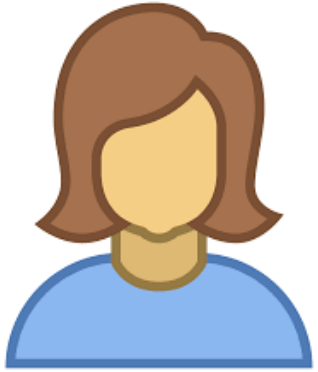
## 2.

Train and validate prediction model using standard statistical methods.




## 3.

Prediction estimates calculated per student



**%75**

**EXAMPLE**

**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%**

*Example of calculating student dropout risk levels*

# Sample data for faculty and advisors

UNIVERSITY of HAWAI'I® WEST O'AHU

| 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 |

# Academic advising intervention example

UNIVERSITY of HAWAI'I® WEST O'AHU

## 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

# Starfish Results – Spring 2017, 3rd Week



- 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.

*Source: UHWO Student Affairs*

# Challenges to Establishing P.A. at UHWO

UNIVERSITY of HAWAI'I® WEST O'AHU

**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