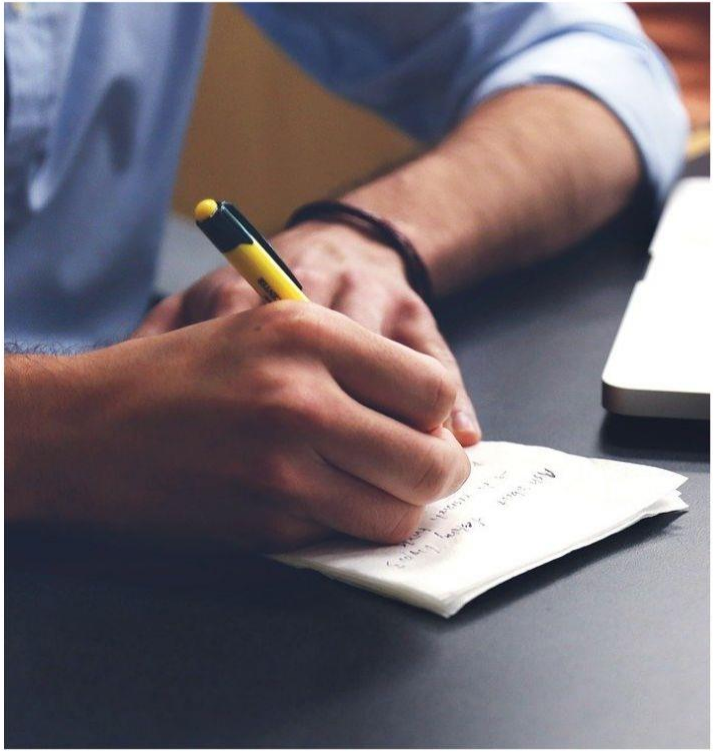
OPERATIONAL ANALYTICS

Using Starfish Retention Scores

Providing Proactive Student Support

Agenda



- Retention Scores - Overview
- An Advisor’s View of Retention Scores
- Understanding Predictive Scores and Score Factors
- Using Retention Scores to Support Students
- Questions Campuses Should Consider
- Q & A

Retention Scores

Overview

Hobsons data scientists use data from your institution combined with powerful statistical tools to make predictions about the retention and completion of your students.

Our Position

We believe in the power of data to *expand* opportunities for students

The Predictive Scores from our models are not guaranteed outcomes for individual students; they are ‘scientific forecasts’ based on available data and mathematical algorithms. We recommend combining scores with your own more personal knowledge of students in order to better target resources and supports toward the students who need them most.

Starfish Analytics Tools

Three components of our solution

Intervention Inventory

The Intervention Inventory (a.k.a. SSMx) is an evidence-based framework for documenting and categorizing student success interventions/ supports.

Predictors of student retention and success are used in both the Intervention Inventory and the Analytics reports so counselors, faculty, and institutional leaders can connect students to targeted interventions

Retention Scores

Leveraging the Operational Data Model, Retention Scores are provided to trained front-line staff through the Starfish system. Those predicted retention scores and score factors allow advisors to quickly come up to speed on challenges students on their caseloads may be facing. They also allow overloaded staff to prioritize their student outreach and support to those that need it most.

Strategic Dashboards

Starfish Analytics Dashboards help you to guide actions across identified student groups based on specific risk factors. The tools also provide history on courses and course outcomes at the institution, facilitating the analysis of curriculum at the institution in support of improved student success.

Each dashboard has a series of reports that provide focused perspectives of the data being reported.

Common Language and Goals for Student Success

Predicted Outcomes to Drive Analytics & Action

Operational Retention Score

- Used for short term, ongoing outreach and intervention activities
- Provided in Starfish Student Folders
- Outcome is retention from the end of the current term to 12 months from the end of this term
- Variables may change from day to day

Strategic Retention Model

- Used for longer term planning and intervention design
- Provided in Starfish Analytics reports and dashboards
- Outcome is retention or completion 12–18 months from the end date of the term of strategic data (usually the last completed term).
- Variables do not generally change during a term

Strategic Completion Model

- Used for both current and long-term support
- Currently provided in Starfish Student Folders
- Outcome is credential completion within 4 years from the student's starting date
- Variables are the same as those used for the Strategic Retention Model

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The Starfish Operational Retention predictions use student data from many categories

- Academic Performance & History
- At-Entry Variables
- Demographic
- On/Off Campus Living
- Costs and Financial Aid
- Time and Term Related
- Program/Major

Notes:

- Factors from these categories are commonly included in the Operational Retention Model
- The factors that are *not* strongly related to retention for your institution are excluded
- Financial aid information may be used in modeling, but it is *not* displayed to end users as significant score factors
- Details on predictive variables used are available in the Starfish Help Center

Detail

Operational scores use your data from the past 6 years to ensure statistical significance (1/2)

- **Academic Performance & History**
  - Academic Standing (last term)
  - Age at Entering the Academic Program
  - Attempted Credits (in current term)
  - Best Grade (last term)
  - Worst Grade (last term)
  - Change in Attempted Credits (current term vs prior term)
  - Change in Earned Credits (prior term and term preceding)
  - Change in term GPA (prior term and term preceding)
  - Credits Attempted with W/F (all time)
  - Cumulative GPA (end of last term)
  - Honors Status (last term)
  - Total Earned Credit Hours (at end of last term, computed)
- **On/Off Campus Living**
  - On/Off Campus (current term)
  - On/Off Campus (last term)
- **Demographics**
  - First Generation
  - Gender
  - Race/Ethnicity
  - Residency Type
  - US Citizenship Status
- **At-Entry Variables**
  - ACT: Subject Scores
  - SAT: Subject Scores
  - High School GPA
  - Pell Grant Eligibility
  - Transfer Student at entry
  - Transfer Credits at entry
  - Transfer GPA at entry
  - Zip Code (when admitted)

Operational scores use your data from the past 6 years to ensure statistical significance (2/2)

- **Financial Aid**
  - Expected Family Contribution
  - Change in Expected Family Contribution (current vs prior term)
  - Receipt of Financial Aid
  - Total Assistance
  - Change in Total Financial Aid (current vs prior term)
  - Unmet Need
  - Change in Unmet Need (current vs prior term)
  - Cost of Attendance
  - Change in Cost of Attendance (current vs prior term)
- **Program/Major**
  - Credential Pursuing
  - Primary Major/Program Name
  - Program CIP Code
- **Time/Term-Related**
  - Start Month of Previous Term
  - Term Length
  - Term Season
  - Term Start Month
  - Age at Start of First Term
  - Time in Program
  - Time Since First Term (first class)
  - Time Since Last Term Start

Notes:

Smaller institutions require more historical data to ensure adequate sample size
Factors from these categories are most commonly included in the Starfish Operational Retention Model
The factors that are not strongly related to retention for your institution are excluded from your model
While financial aid information is used in modeling, it is not displayed to end users as significant score factors
Details on predictive variables used are available in the Starfish Help Center

Retention Scores

Advisor or Staff View

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Predicted Retention Scores in Starfish – Home Screen

- A caseload summary is presented on the home screen.
- Links can be used to obtain a filtered list.

The total number each staff person sees is determined by their analytics-enabled role with access to the largest number of students.

My Students Screen

Starfish

Search for Students

Overview | My Students | Tracking | Intake | Zoom In | Attendance | Progress Surveys

Flag | Referral | To-Do | Kudos | Success Plan | Message | Note | Download

Search: Student Name, Usernam Go

Connection: All My Students

Term: All

Cohort:

Additional Filters: Add Filters

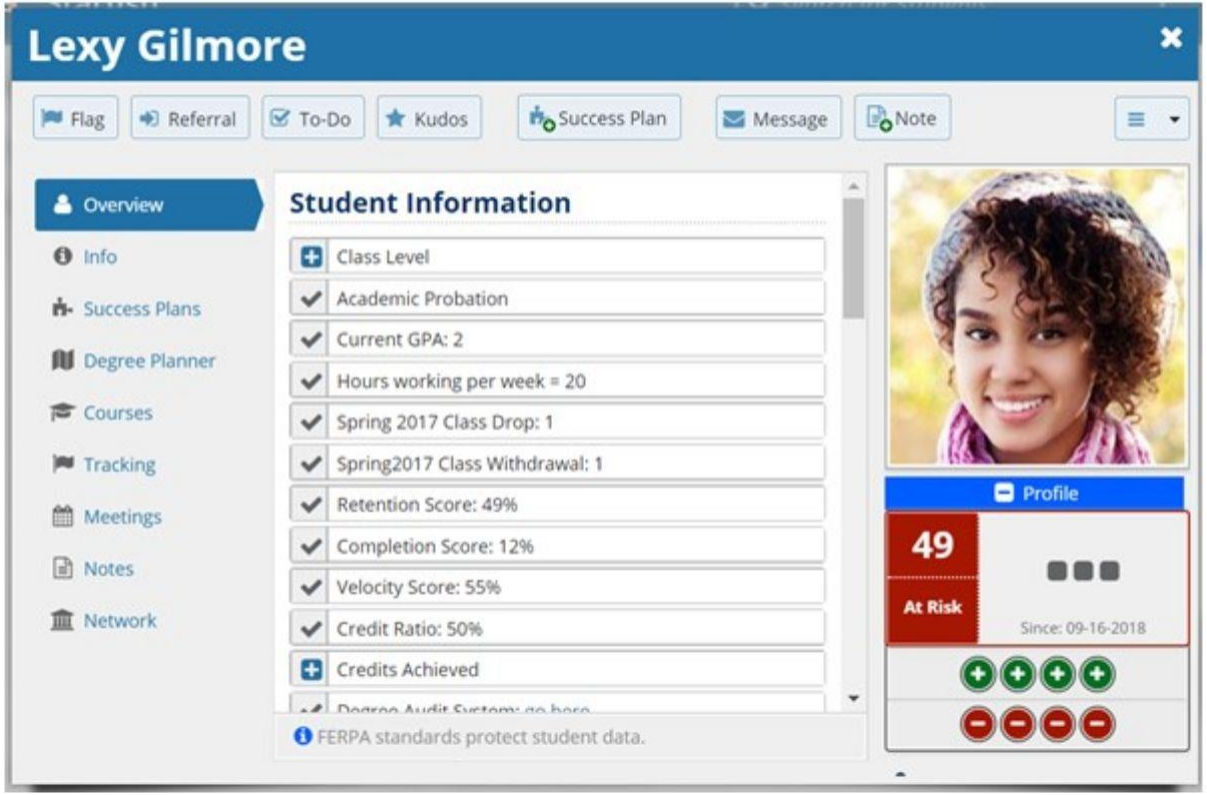
Name	Retention Score	Email	Phone	Cell Phone
David Acosta dalbright	49	briterian34@gmail.com	513-284-2342	513-272-2190
Brian Adams badams	92	Brian.Adams@starfishcollege.edu	513-284-2342	513-272-2190
Randy Albright ralbright	76	Randy.Albright@starfishcollege.edu	513-284-2342	513-272-2190
David Andrews dandrews	88	David.Andrews@starfishcollege.edu	513-284-2342	513-272-2190
Randy Andrews randrews	86	Randy.Andrews@starfishcollege.edu	513-284-2342	513-272-2190
Madelynn Arnold farnold	55	Madelynn.Arnold@starfishcollege.edu	513-284-2342	513-272-2190
Carlie Baldwin dbaldwin	77	Carlie.Baldwin@starfishcollege.edu	513-284-2342	513-272-2190

Page 1 of 9 | Total items selected: 0 | Displaying Students 1 - 25 of 207

Scores are presented as a sortable column in the My Students screen.

HOBSONS

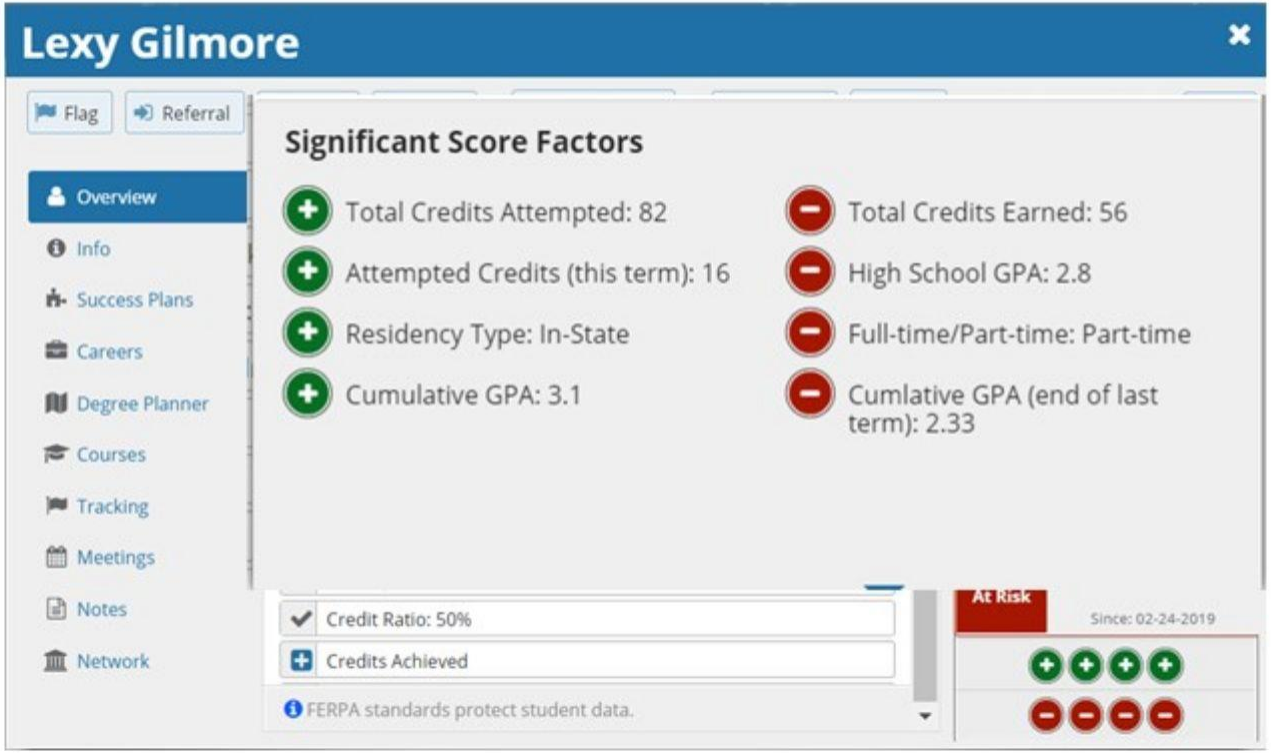
Individual Student View



Scores and score factors are provided in the individual student view.

HOBSONS

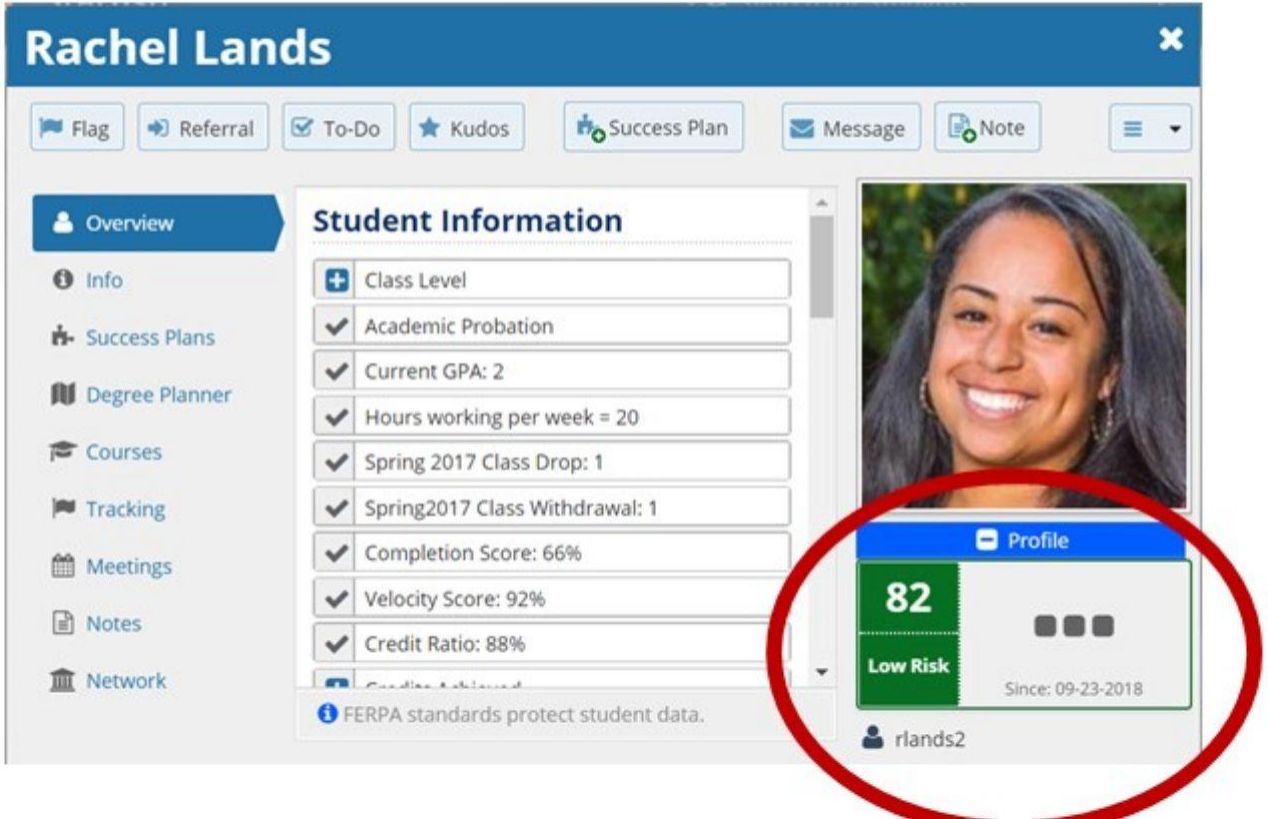
Individual Student View



Hovering over the score factors provides more information on the factors of risk and success.

HOBSONS

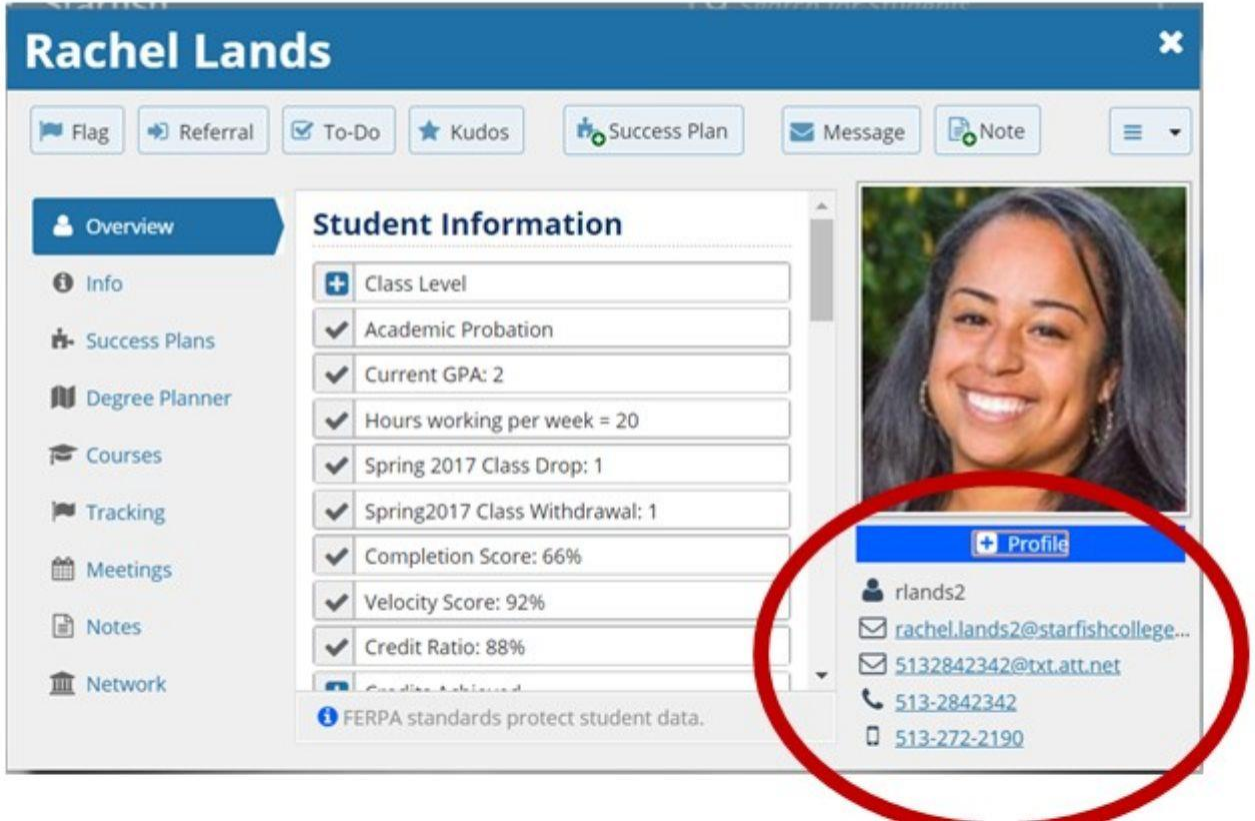
Individual Student View



Visibility of retention scores can be toggled on or off for 1:1 advising sessions

HOBSONS

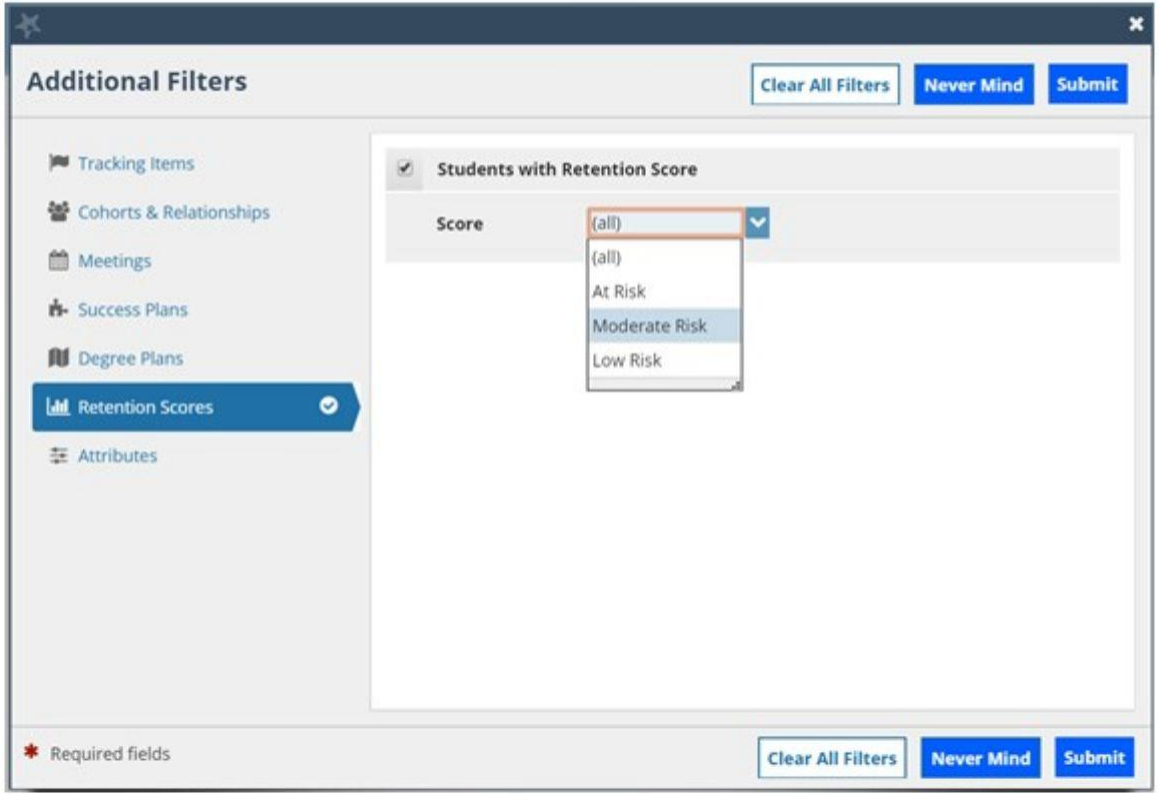
Individual Student View



Visibility of retention scores can be toggled on or off for 1:1 advising sessions

HOBSONS

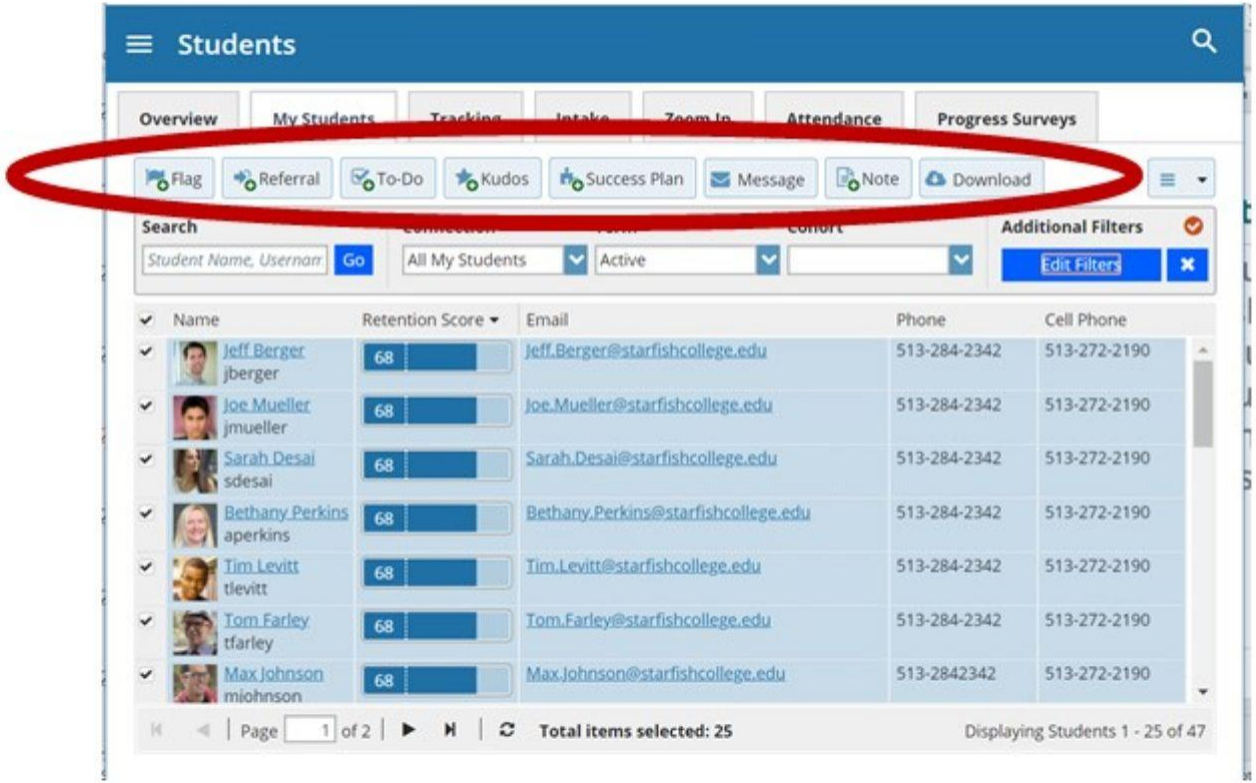
Filtering Student Lists



Support staff can filter student lists by risk levels...

HOBSONS

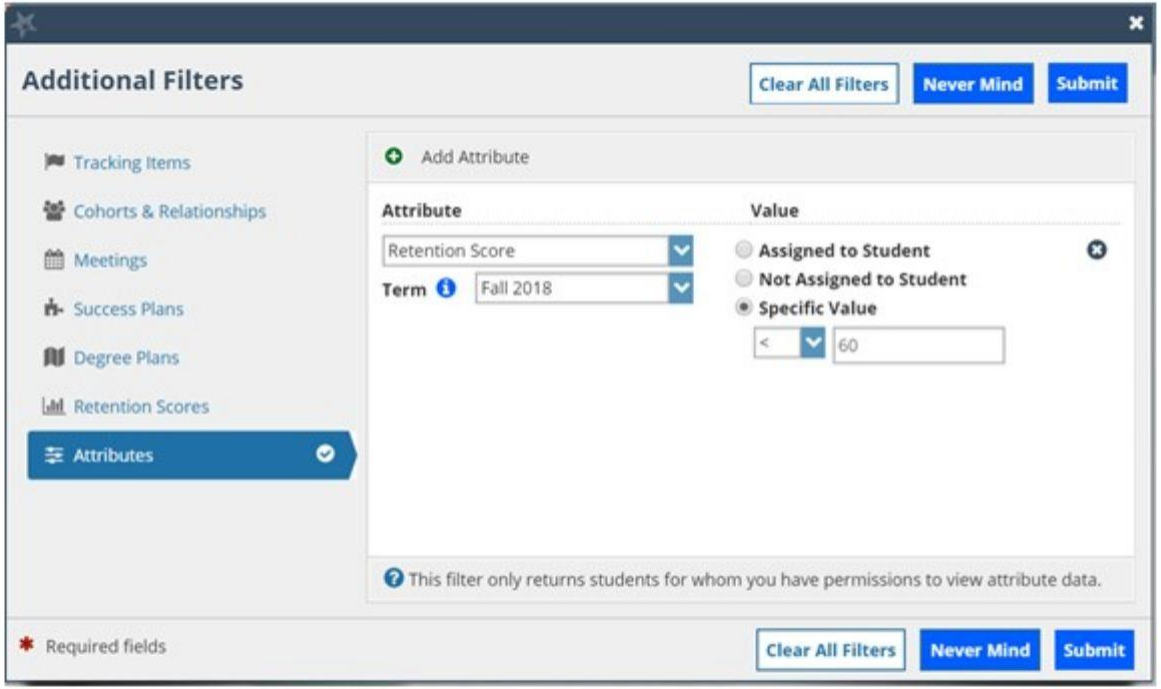
Filtering Student Lists



...and use Starfish tools for communication, referral, and outreach with students with different risk levels.

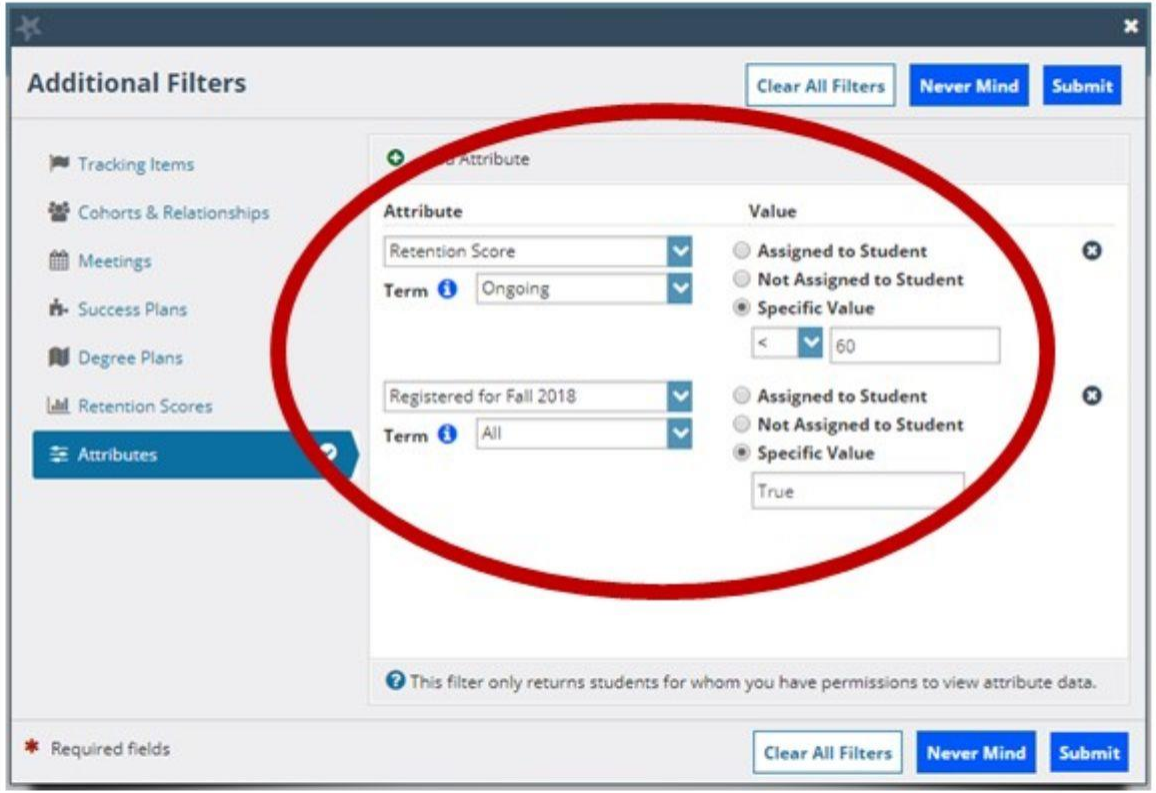
HOBSONS

Filtering Student Lists



Retention Scores are included as attributes - allowing very specific filtering.

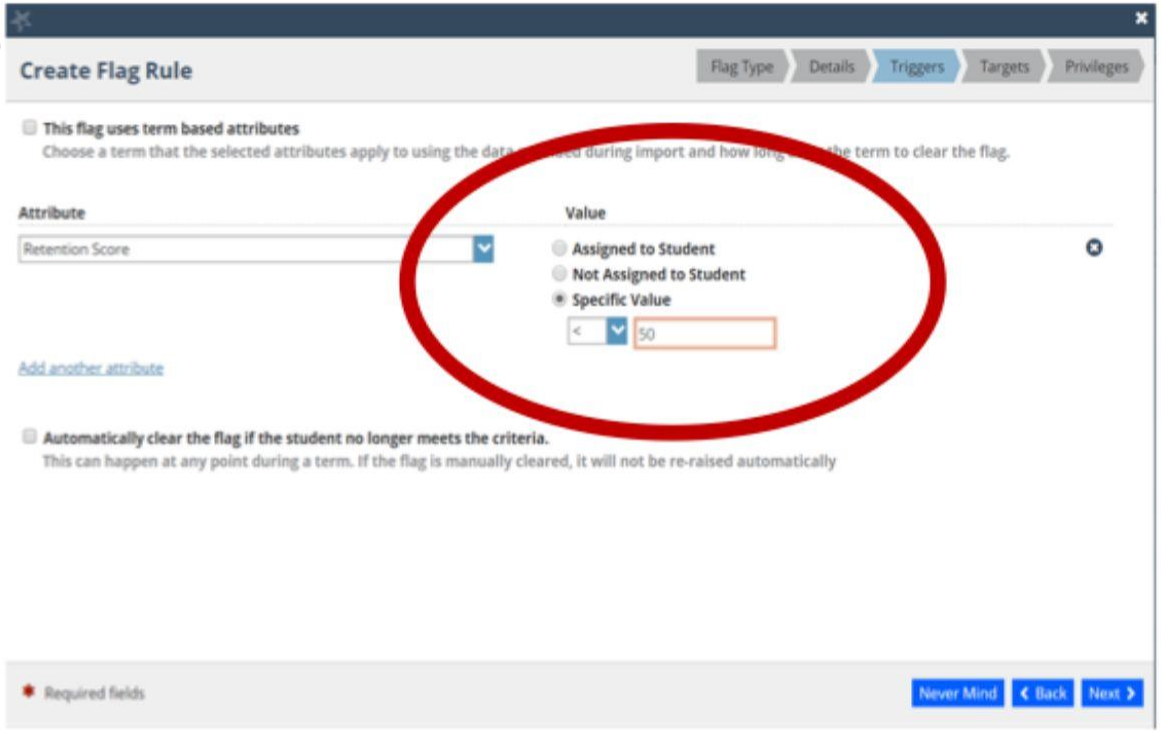
Filtering Student Lists



Combining filters can provide powerful tools for caseload management.

HOBSONS

Using Attribute for Flags

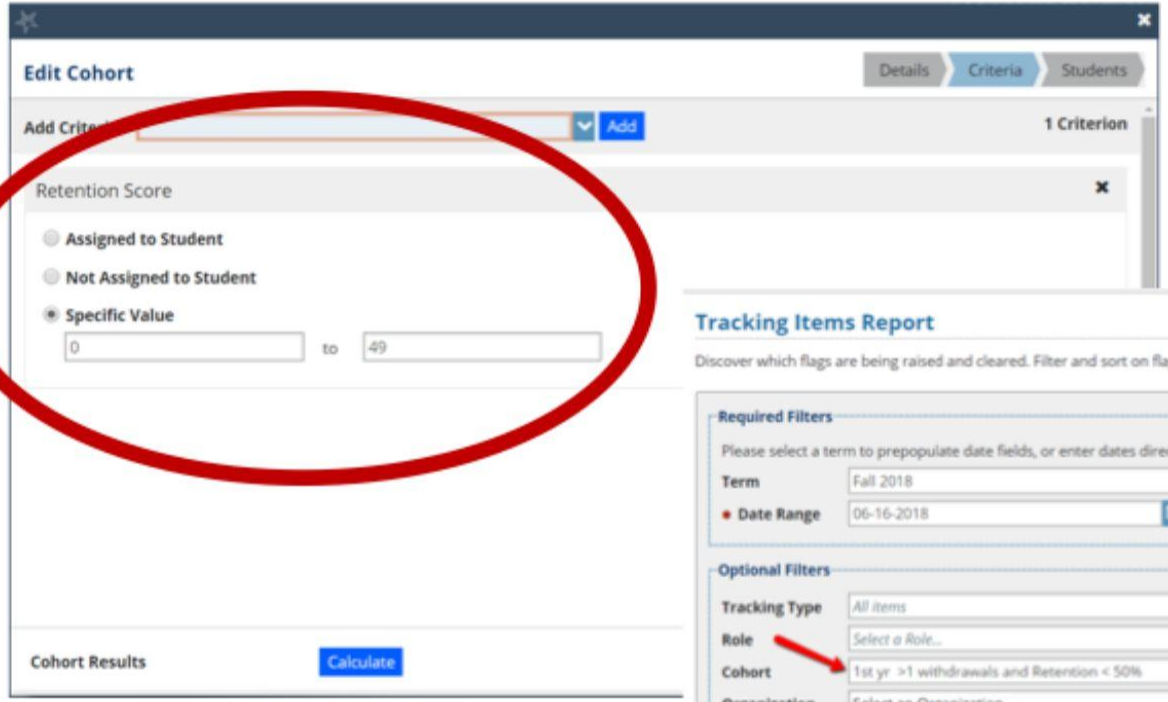


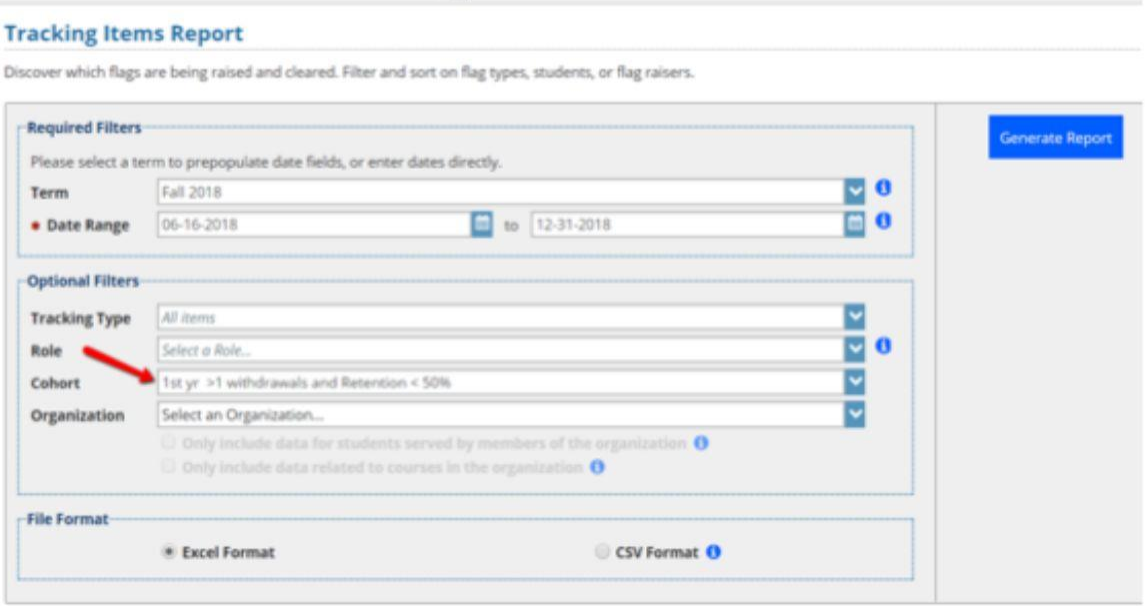
Use the Retention Score Attribute to create flags for Students with Specific Values

HOBSONS

Using Attribute for Cohorts

Use the Retention Score Attribute to create cohorts that can be used for quick filtering and reporting





Retention Scores

Understanding Predictive Scores and Score Factors

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Acting on Probabilities

- **15% chance of rain**
  Probably not too concerned, but may keep an eye on the report in case this increases

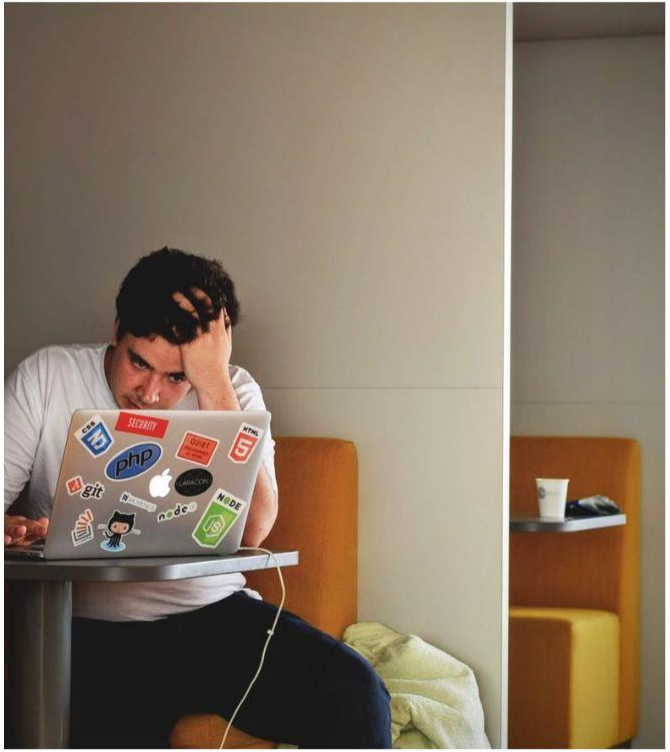
- **45% chance of rain**
  Wear a rain jacket, have an umbrella handy

- **55% chance of rain**
  Wear a rain jacket, have an umbrella handy

- **85% chance of rain**
  Rain boots, poncho, umbrella… maybe change plans altogether

There isn’t a single cut point in which we either totally prepare for rain, or assume it won’t rain at all. Instead we make decisions based on the probability of rain and perhaps our own internal knowledge (i.e., is rain already falling?)

More on Probability



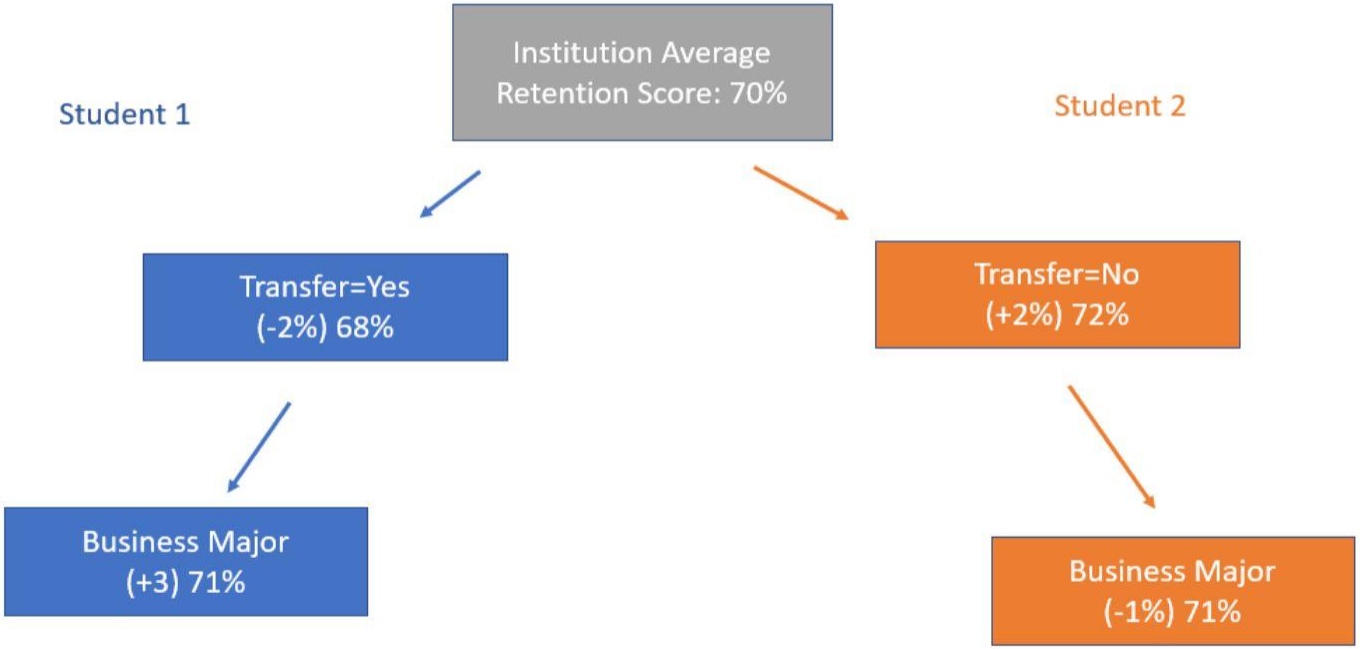
- Predictions are not guarantees of outcomes but give a sense of likelihood of an event based on historical patterns

- In other words, if Fred has a Retention Score of 70% that reflects that ~70% of past students who were similar to Fred went on to retain

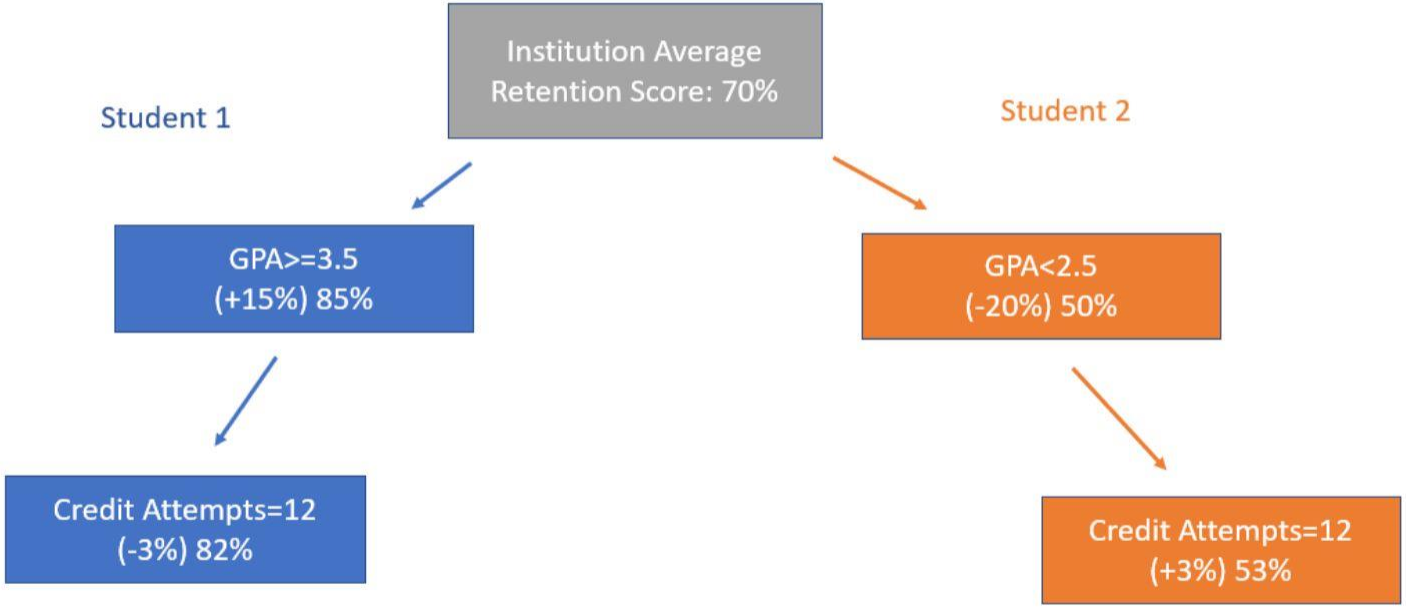
Student Factors

- Factors that appear for a given student are not average effects across the institution, but factors that significantly influenced the score for that particular student
- The influencers (factors that appear in the student folder) are essentially the result of running each individual student down the forest of decision trees and noting which factors significantly raised or decreased a student's score from the average.
- As a result, the same factor (e.g., being a Business Major) can be positive for one student and negative for another

Example 1:


Institution Average
Retention Score: 70%
Student 1
Student 2
Transfer=Yes
(-2%) 68%
Transfer=No
(+2%) 72%
Business Major
(+3) 71%
Business Major
(-1%) 71%

Example 2:


Institution Average
Retention Score: 70%
Student 1
Student 2
GPA>=3.5
(+15%) 85%
GPA<2.5
(-20%) 50%
Credit Attempts=12
(-3%) 82%
Credit Attempts=12
(+3%) 53%

Unexpected Results

- There can be instances where high GPAs, credits earned, etc. register as negative factors for an individual student
- This could indicate students who are likely to transfer to other institutions

Reading Between the Lines

- **Many students who are at-risk will have low GPAs as a risk factor, however there may be many different factors contributing to a low GPA**

  Lack of sense of belonging on campus

  Inadequate academic preparation

  Personal events (i.e. sick loved one, recent tragedy)

- **Meeting with the student can pinpoint the reason GPA may be low and enable advisors to direct the student to right resources to help**

Now what?

How to Use the Score

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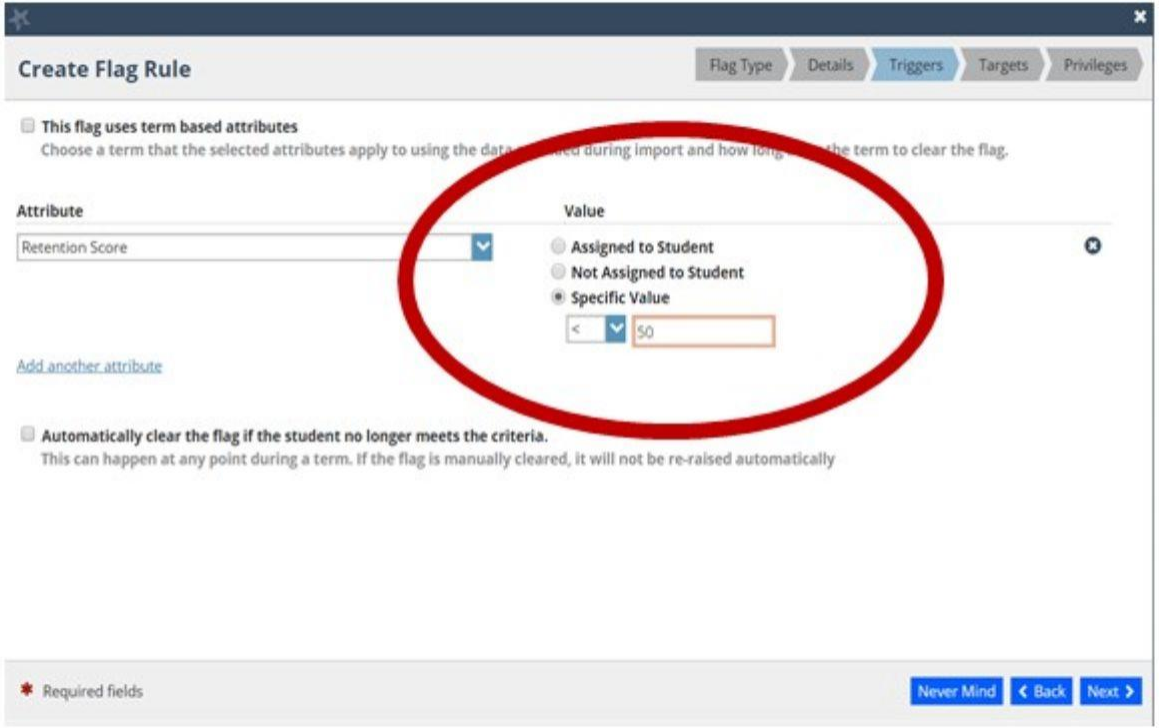
Ways to Leverage Retention Scores

- **Sorting your student lists & taking bulk actions**
- **Combining with other factors in Advanced filters**

  EX: Student has at-risk score and has not had a meeting with you this term
- **Attributes**

  Using to combine with other factors to target system flags
- **Using the “+/-” sign to expand or minimize the score on the folder**

Using Attribute for Flags



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HOBSONS

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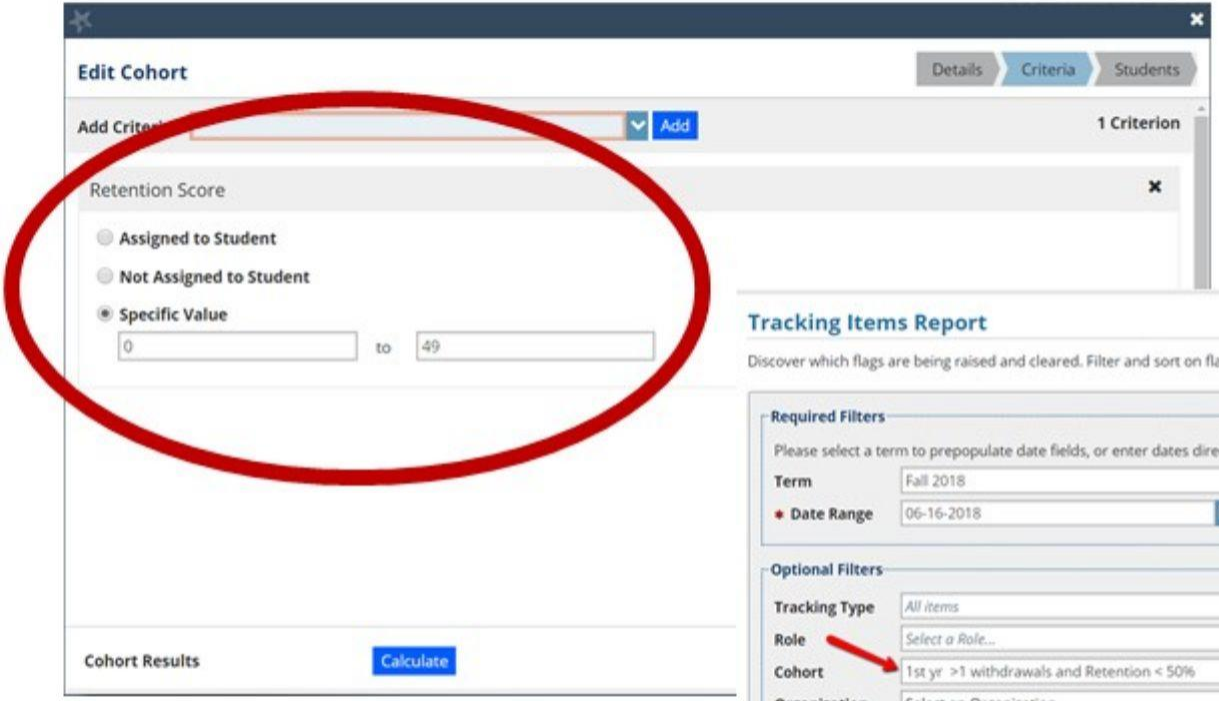
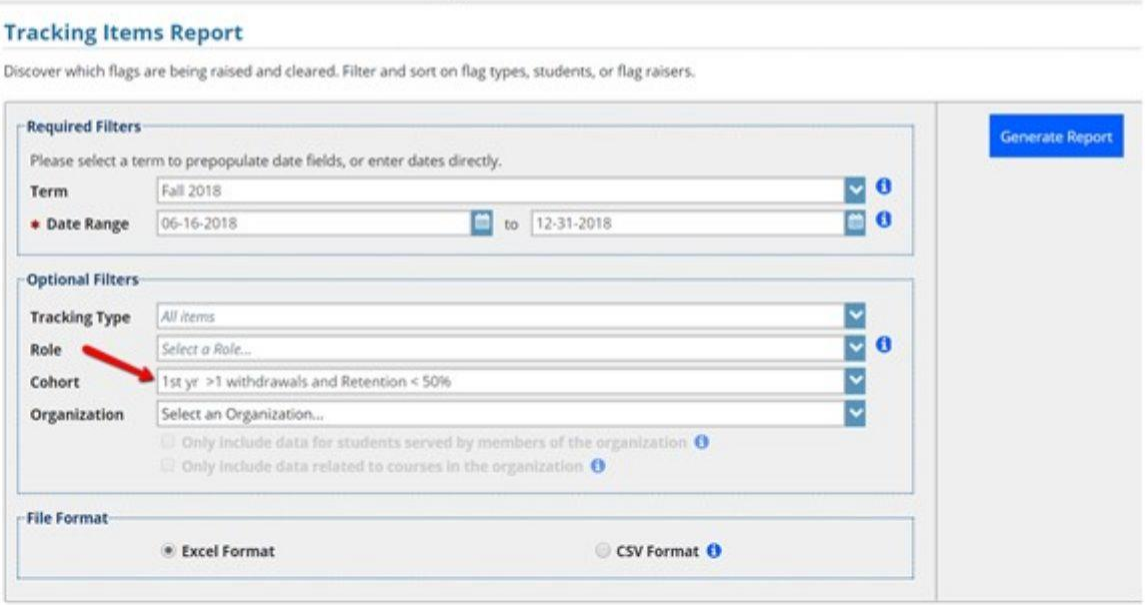
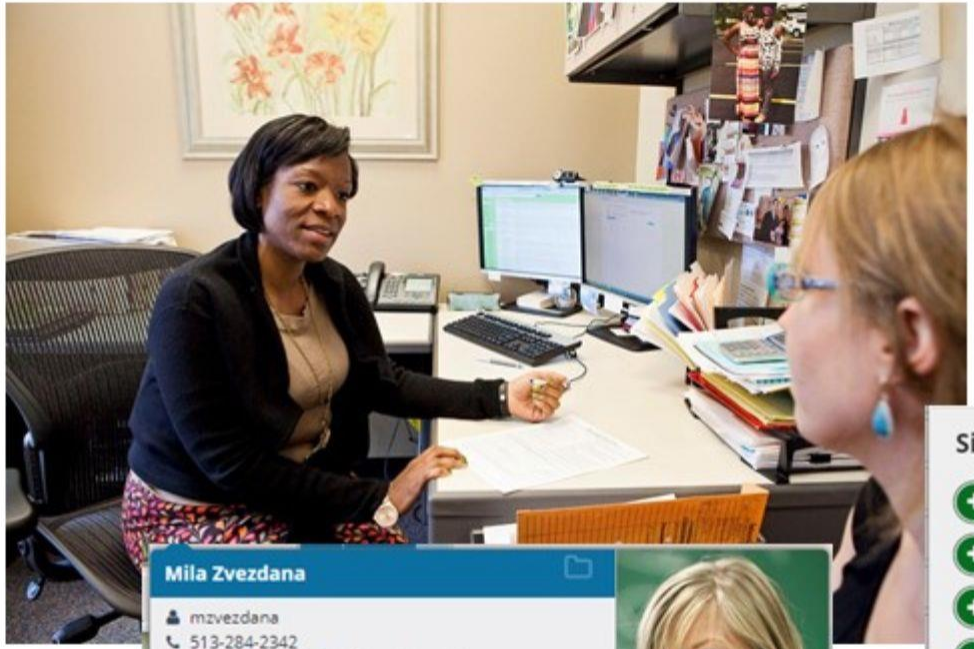


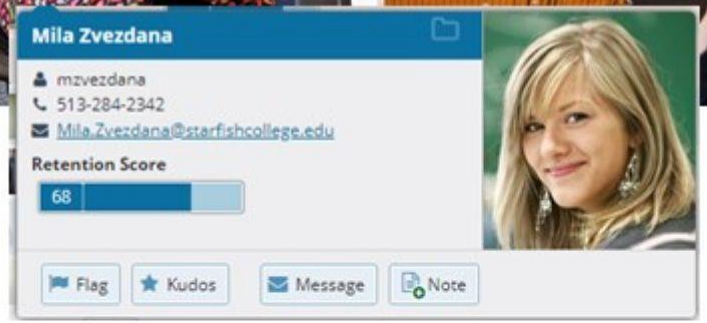


How can scores be used by staff on your campus?



Individual Insights

- Quickly understand student challenges



Significant Score Factors

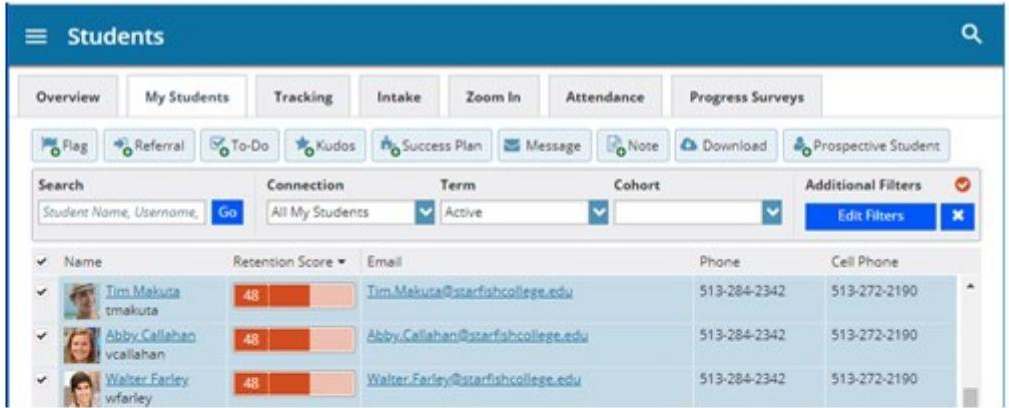
- Total Credits Attempted: 82
- In-State student: Yes
- Attempted Credits (this term): 16
- DevEd taken: None
- Medium Ongoing GPA: 2.4
- Total Credits Earned: 56
- High School GPA: 2.8
- Course Withdrawls: More than 1

HOBSONS

How can scores be used by staff on your campus?

Successfully Manage Large Caseloads

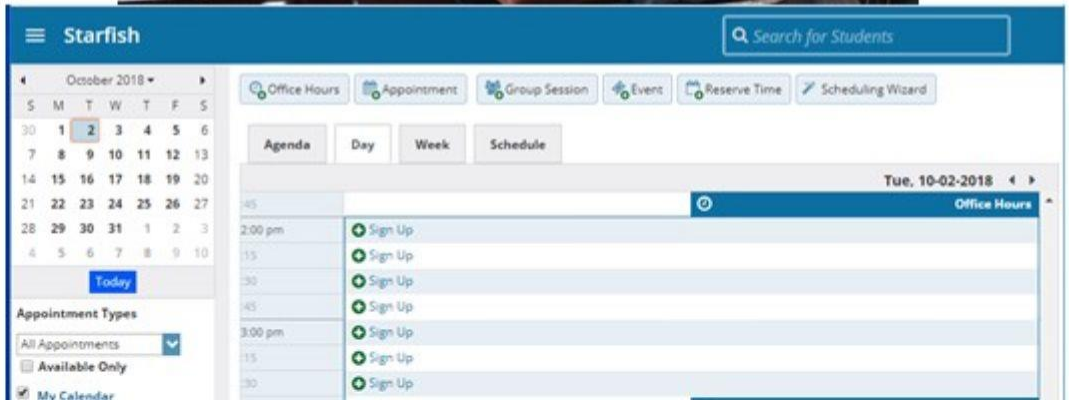
- Provide outreach to those most in need

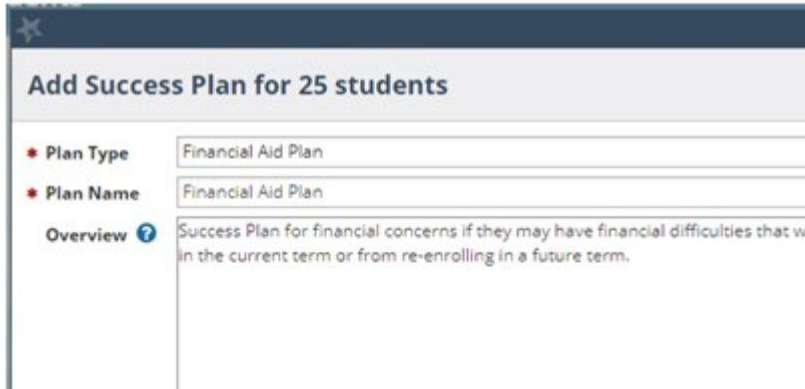


How can scores be used by staff on your campus?

Filter by Score to Identify and Communicate with those at risk

- Proactive versus Reactive Support

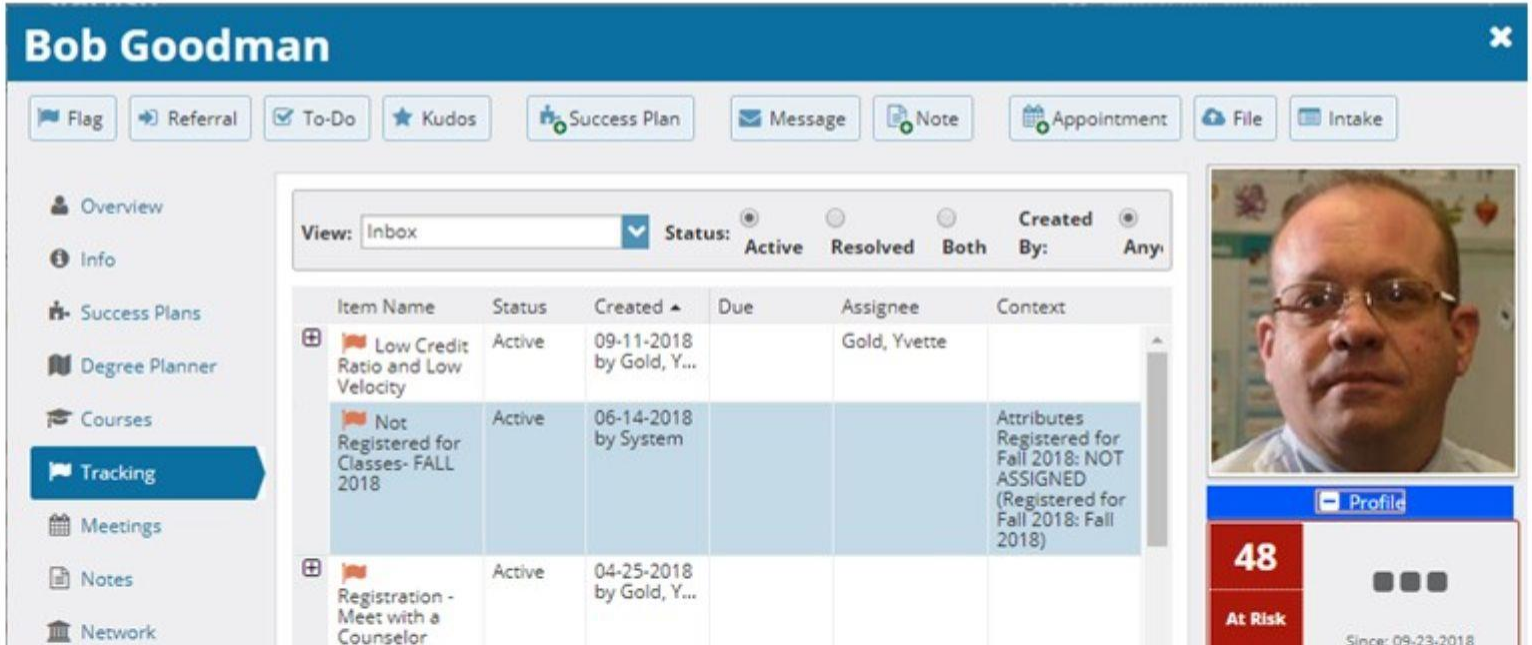




Use the Tools Available!

Starfish flags, referrals, success plans, and reports can help track and evaluate outreach effectiveness

- Close the loop to communicate outreach status



HOBSONS

Other Considerations for Use

- **The score and score reasons can be helpful but may not tell the full story**
  - Personal knowledge and conversations with the student provide the context needed
  - Sometimes reasons interact together in ways that can't be understood without conversations or additional analysis. EX: Undeclared students on campus
- **Leverage the Intervention Inventory to support students**
  - Review the available interventions and ensure that you address the most important score factors for your institution
  - Add Referrals for key interventions
  - Consider large-scale, low cost-per-student proactive interventions when possible

Use the Tools Available!

The Intervention Inventory can document your outreach plans

- Build consistency in how outreach is conducted

Home | Appointments | Students | Services | Analytics | Admin | Search for Students | Kim Gilliam | help | logout

Catalog | Inventory

Starfish University > Interventions List

Intervention	Connection	Entry	Progress	Completion	Students	Staff	Est. Cost	Measured?	Shareable?
Academic Services for Student Athletes (ASSA)	✓	✓	✓	✓	255	1.25			✓
Accelerated Student Advising	✓	✓	✓	✓	2000	4.00			✓
Ask a Librarian	✓	✓	✓						
Brother to Brother Program (B2B)	✓	✓	✓						
Campus Faith and Ministries (CFM)	✓	✓	✓						
Career Days	✓	✓	✓						
College Achievement Program (CAP)	✓	✓	✓						
College Advising Offices	✓	✓	✓						
College Prep Day	✓	✓	✓						

Home | Appointments | Students | Services | Analytics | Admin | Search for Students | Kim Gilliam | help | logout

Catalog | Inventory

Starfish University > Interventions Matrix > Summary

Brother to Brother Program (B2B)

Delete | Save As | Edit

Description

The mission of the Brother to Brother (B2B) program is to provide academic, career, and leadership assessment (development), social and financial support to multicultural or first generation undergraduate males who are enrolled part- or full-time at PAR College. The program offers leadership development, career exploration, academic skill building, and social enrichment activities.

To be eligible for the B2B scholarship students must meet general eligibility as well as scholarship requirements. In order to be eligible for the scholarship, the student

Administration & Outcome Details

Implementation Time Period: Prior to 2009

Implementation Phase: Maintenance/Ongoing

Delivery Mode:

- Face to Face/In person

Delivered by: MASS Staff

Administered/Monitored by: Multicultural Academic & Support Services

Intervention ID

470620

This intervention is marked as shareable. Interventions can only be shared with the community after they have been Verified. The following intervention attributes are allowed to be copied by another institution:

- Intervention Name
- Intervention Description
- Predictors

Closing Thoughts

Situations That Can Lead to Seemingly Inaccurate Data

- If the student population substantially changes in a given year, or patterns between student factors and retention begin to change at your institution, the model may not pick this up as it is built on past data

- Important factors that are not included in the data can also lead to inaccuracies- for example, if financial need is not included, students at risk due to unmet need may not be appropriately identified by the model alone

- We hope students will exceed scores shown in the model, as taking action to help at-risk students could lead to more students being retained than what is predicted