




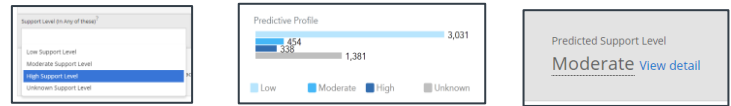
Student Success Predictive Model

An Introduction to Predictive Analytics

Why Use a Predictive Model?

- 
Visibility
Uncover Hidden Student Support Needs
- 
Early Intervention
Act Early, Avoid Later Problems
- 
Triage
Prioritize High Support Students

Early, General Guidance for Assessment & Intervention



Advanced Search

Population Health

Smart Student Profile

Leverage key features to...

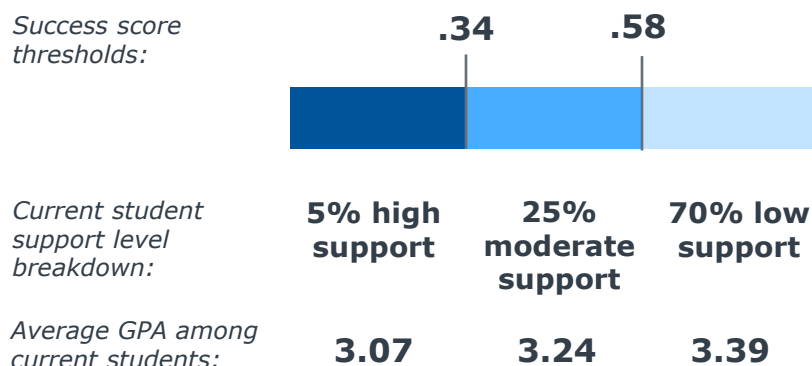
- Understand pockets of support needs to inform resource allocation
- Employ targeted outreach campaigns to monitor and track support needs at the institution-level
- Better understand individual student support needs and better inform one-on-one student conversations

How Does the Predictive Model Work?

The Student Success Predictive Model (SSPM) uses our institution's historical data coupled with the latest breakthroughs in statistics and data science to make informed predictions around current students' likelihood to achieve a given success outcome—for the University of Montana, the SSPM is evaluating **the likelihood that any chosen student will persist to the next fall term (or graduate before then).**

When applied to your current student population, the SSPM assigns a 'success score' (a numerical value between 0.0 and 1.0) to each student indicating their likelihood persist to the next fall given their unique characteristics and how similar students performed in the past. Once given this score, students are sorted into three levels: **high support, moderate support, and low support.**

At the University of Montana, these levels are defined as follows:



When applied to the historical student population, **31.6% of high support** students went on to persist, **49.1% of moderate support** students went on to persist, and **81.3% of low support** students went on to persist.

The SSPM According to the University of Montana: Data Deep Dive

Which Data Points Were Used to Train the SSPM?



Source: As EAB's Data Science team created your model, they evaluated many different data points for their predictive quality. Some of these data points are available directly in your SIS, others are derived by our Data Science team using proprietary methods.



Type: The model training process uses both variable data points, such as academic progress and performance metrics, as well as static factors, such as demographic indicators and pre-enrollment data.



Impact: These data points have different importance in the model depending on their evaluated predictive power, and the weight of a given factor can change over the course of a student's time at the institution.

Which Predictors are Most Influential on Student Success as Defined by the SSPM?

As students progress through his/her academic career, different factors will contribute more heavily to their success at different points in time. Below are the high impact predictors for each subgroup of students:

Day 1 Students

- Admit Code
- Lifetime Attempted Credits
- ...and 17 low impact predictors.

Students with Between 1-60 Accumulated Credits

- Admit Code
- Lifetime Attempted Credits
- Cumulative GPA
- ...and 40 low impact predictors.

Students with Between 61-120 Accumulated Credits

- Admit Code
- Average Outcome in Major
- Lifetime Attempted Credits
- ...and 40 low impact predictors.

Students with More Than 120 Accumulated Credits

- Gender
- Ethnicity
- Lifetime Attempted Credits
- ...and 40 low impact predictors.

For a full list of all predictors included in your model, ask your Strategic Leader.

Using the Predictive Model

How to understand what scores mean and use them effectively

The model is good at...

- Efficiently quantifying SIS data
- Estimating average drop-out rates for different populations of students
- Creating a probabilistic estimate of a student's likelihood of persistence
- Generating outreach campaigns, email lists, or advisor assignments
- Providing one signal among many that a student may need support

The model is not for...

- Understanding the whole student
- Making a definitive prediction about a student's fate
- Identifying "needle in a haystack" students who are going to drop out
- Telling an advisor what to do about an individual student's problems
- Creating a single, quantitative measure of the strength of a student

What does this mean for using the model?

- Interpreting individual scores can be difficult because we have a tendency to "round" scores to 0 or 1. **Probabilistic scores are easier to interpret when thinking about groups.**
- Causality can be hard to untangle in education, so **the model should only act as a starting point in the conversation with a student**, not as a stand-alone diagnostic tool.
- **The predictive model is valuable because it conserves advising resources by narrowing the search for at-risk students**, not because it definitively identifies them or suggests an intervention.