Known Limitations of Model 2.0

Useful for Most Members, But Not Good Enough

Inflexible Architecture
Not Customizable, Slow to Improve
- Increasingly diverse institutions and student populations require different approaches
- Revealed need for more flexible technology

Day 1 Risk
Not Consistent or Reliable
- Pre-enrollment data provided only indirect contribution to risk
- “Day 1 Risk” not consistent or reliable for many members

Time & Credit Accumulation
Not Fully Accounted for
- Risk model accounts for skills but not progress toward degree
- e.g. Seniors about to graduate who present as “high risk”

Subpopulations
Can’t Treat Different People Separately
- Certain factors should have more or less weight for specific populations
- e.g. Transfer students
What’s New in 2.5

Flexible Design, Better Use of Existing Data, Overall Improvement in Accuracy

Motivations
- Set the stage for future flexibility and customization
- Address some known limitations

Key Enhancements
- Pre-enrollment data used directly. More accurate impact on risk estimates.
- Improved accounting for time and credit accumulation. More trustworthy scores for all students.
- Better handling of multiple majors and major switching

Risk Model Report
- Serves as a checkpoint before the model is enabled in Production
- Option to stay with 2.0 model if appropriate

Includes:
- Model description
  - What data sources were used?
  - How can we customize even further?
- Model quality (for historical students)
  - How accurate is the model overall?
  - For students with different standing?
  - For students in different majors?
- Model comparison
  - Prediction quality compared to a simple rule-of-thumb model
Interpreting Risk Signals

Three Indicators of Student Risk in the Platform

Empirical
Calculated
Based on Historic Performance

Behavioral
Observed
Based on Current Performance

1. Predicted Risk Level
   - Biological Science
     - Low Risk
   - Search For Majors And Careers
     - Major Options
       - Sociology
         - Low Risk

2. Success Markers
   - Success Markers
     - The student has missed guidelines for progress. Acting on them can help get the student back on track for successful completion.

3. Observation-Based Staff Alerts
   - Staff Alerts
     - I want to...
       - Message Student
       - Add a Note on this Student
       - Add a Reminder to this Student
What is a Student Risk Prediction?

**Student Risk Prediction**

**Definition:** For SSC—Campus, a student risk prediction is the likelihood that a student will graduate from the institution according to the institution’s predictive model.

For each institution, a custom-built predictive model is created by EAB’s data science team using historical student records to identify which data points are important for predicting graduation. Student risk predictions are then generated by passing an individual student’s data (e.g., current Major, cumulative GPA) into the predictive model for calculation.
What Goes in Our Unique Risk Model?

Incorporated Today

**Institutional Academic Data**
- Attempted Credits Trend
- Completed Terms
- Credits Since Last Major Change
- Cumulative GPA
- Current Major Frequency
- Current Major(s)
- D-F-W Counts
- D-F-W Trend
- Earned-Attempted Credit Ratio
- Estimated Skills
- GPA Trend
- Grade Variance
- Lifetime Attempted Credits
- Major(s)-Skills Alignment
- Number of Current Majors
- Number of Former Majors
- Term GPA

**Pre-College Data**
- Standardized SAT/ACT Exam Scores
- Transfer Credit Proportion
- Transfer Student Indicator

**Demographic Data**
- Gender
- Ethnicity

Success Markers and Alerts Not Included

Success markers and staff alerts are not incorporated into the risk model. Therefore, a student’s risk prediction is not influenced by their presence or absence.
Risk Model Creates Individual Risk Predictions for Each Student

How the SSC—Campus Risk Model Works

We start with a student’s courses and grades

Analyze historical records, searching for academically similar students

And predict their likelihood to graduate

Student Data Inputs
- Academic and Course Registration Records
- Student Demographic Data
- Pre-College Academic Data

Predictive Model

Predictive Outputs
- Risk given current major
- Risk given other majors

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Mapping from Risk Prediction to Risk Level

### Risk Classification
- Low Risk: Graduates: \((0.50, 1]\)
- Moderate Risk: Non-Graduates: \([0, 0.50]\)

### Predictive Model
- Low Risk: \([0.67, 1]\)
- Moderate Risk: \([0.33, 0.67]\)
- High Risk: \([0, 0.33]\)

### SSC Platform
- Low Risk: Graduates: \((0.50, 1]\)
- Moderate Risk: Non-Graduates: \([0, 0.50]\)
- High Risk: \([0, 0.33]\)

### Student’s Risk Color

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Moderate Risk</th>
<th>High Risk</th>
<th>N/A Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probable graduate within major</td>
<td>Moderate risk to graduate within major</td>
<td>High risk to graduate within major</td>
<td>Insufficient institutional coursework to assess risk</td>
</tr>
</tbody>
</table>
How do I Use a Student’s Risk Prediction?

Tips from Our SSC Advisors on How to Use Risk Prediction Effectively

How to Use Predicted Risk Effectively

- Use risk levels to strategize which students to monitor more heavily
- Use risk predictions to explore major options and strengthen long-term academic planning conversations
- Explain to students their risk score to create a sense of urgency for resistant students
- Consider predicted difficulty to help students select and prepare for upcoming courses
- Contextualize a student’s risk score by remembering the group against which that student is being compared

...And How Not To

- Don’t only meet with “red” students
- Don’t ignore your intuition and experience in evaluating whether a student might be at risk
- Don’t make all your “red” students switch to a “green” major
- Don’t ignore a student’s passion if it’s in a “red” or “yellow” area
- Don’t assume a student won’t or can’t graduate because they are “red”; “red” is a probability, not a fate
Where Risk Level Appears in the Platform

**Student’s Overview Page**
- Current Risk Level in Declared Major

**Advanced Search**
- Risk Level as a Filter

**Student’s Major Explorer Tab**
- Predicted Risk Level in Alternate Majors
Success Markers

Success Markers help platform users gauge whether a student is on track in their major by comparing their behaviors and outcomes to standard milestones of degree progress and performance.

Chemistry Major

Anatomy of a Success Marker

- **Required milestone course for the major** (e.g., Chemistry 101)
- **Minimum recommended grade** (e.g., B-)
- **Appropriate timing** (e.g., 0 – 30 credits)

Success Marker Statuses

- ✓ Success markers already **completed**
- ✗ Success markers **missed** due to grade or timing
- ✧ Success markers that are **upcoming**
Where Do They Come From?

Analysis of Historical Records Identifies Highly-Predictive Courses and Grades

Two Required Courses for a Chemistry Major

**CHEM101**

- Graduation Rate in Major:
  - Grade A: 64%
  - Grade B: 58%
  - Grade C: 25%
  - Grade D: 13%
  - Grade F: 10%
  - Grade W: 30%

**BIOL305**

- Graduation Rate in Major:
  - Grade A: 52%
  - Grade B: 55%
  - Grade C: 48%
  - Grade D: 43%
  - Grade F: 12%
  - Grade W: 27%

**Predictive**

**Not Predictive**
Success Markers in the Platform

Summary of All Success Markers in the Success Progress Tab

An Ongoing Process
Initially, Success Markers will not be available for all programs. As Success Marker development progresses, additional programs will see Success Markers become available in the platform.
Staff Alerts

Alerts Triggered by Observation-Based Risk Assessment

**Staff Alerts**

**Definition:** Staff alerts are risk alerts created by platform users (e.g., faculty member, advisor) when they observe a student behavior (e.g., multiple absences, emotional distress) or performance indicator (e.g., failed test) that suggests the student is struggling to succeed and may potentially be at-risk to leave your institution.

Unlike student risk predictions and success markers, which rely on end-of-term data (e.g., final course grades, term credit completion ratio), staff alerts are based on in-term data.
How Are Alerts Created?

Two Mechanisms for Generating Alerts

1. **Course-Specific Alerts Issued by Professors through the Progress Report Process**

   - Staff initiates request for progress reports
   - Professor receives email notification of request
   - Professor submits student feedback
   - Alert created for any student marked “at-risk”

   *Professors can also submit unsolicited progress reports at any time in the platform

2. **General or Course-Specific Alerts Issued by Platform Users at Any Time**

   - Faculty or Staff observes concerning behavior
   - Issues an alert from the student’s profile page or the advising home page
Where Alerts Appear in the Platform

Summary of Alerts on a Student’s Overview Page

Alert Details on a Student’s Reports/Notes Tab
Practice Question

Ask Yourself

Risk prediction, success markers, and staff alerts measure student risk in different ways. Users who are less familiar with the way risk predictions and success markers are generated may struggle to interpret “contradictory” signals about a student.

If you found a student with a low risk prediction (GREEN) but also three missed success markers and two staff alerts, what could be happening?
Campaigns and Reports
What is a Campaign?

Focus
Focus in on one of your institution’s areas of greatest opportunity for improvement

Resources:
• Institution Reports
• EAB Best-Practice Research

Contact
Send proactive outreach to students to establish contact and encourage action

Resources:
• CSV Exportation
• Campaign Toolkit

Identify
Create a list of students with target attributes to define your target population

Resources:
• Filtering & Work Lists

Intervene
Meet with students and provide tailored advising support to this population’s shared needs

Resources:
• Student Profiles
• Risk Analysis & Major Explorer

Follow Up
Follow up on student progress and track campaign outcomes

Resources:
• Notes & Statuses
## Examples

### Common Campaigns from SSC Member Institutions

<table>
<thead>
<tr>
<th>Campaign Population</th>
<th>Example Filters</th>
<th>Action</th>
</tr>
</thead>
</table>
| Students who have not enrolled for the fall semester                                | **Type:** Students  
**Enrollment Status:** Not Enrolled  
**Enrollment Term:** Fall 2016  
**Check Box:** My Students Only | Encourage students to meet with their advisor and enroll in courses for the following semester |
| At-risk students that may need to switch majors                                     | **Risk Level:** High  
**Earned Credits:** 45-70                                                        | Encourage students to evaluate their academic performance and consider a major change |
| Undeclared students above a certain credit threshold                                | **Major:** Undeclared, Pre-major  
**Earned Credits:** At least 30, 45, or 60 credits (depending on the institution) | Help students select the appropriate major and declare as soon as possible |
| Potential recruits for the honors program                                           | **Enrollment:** Currently enrolled  
**Risk Level:** Low  
**Missed Success Markers:** Less than 2  
**GPA:** Over 3.70                                                                   | Discuss strong academic performance and potential enrollment in the honors program |
| High-performing students for recruitment to a particular major                      | **Enrollment:** Currently enrolled  
**Risk Level:** Low  
**Major:** Undeclared                                                              | Ensure high-performing students know they are capable of taking on challenging majors |
User Tools and Resources

SSC Resources Available to Support Platform Learning and Usage

**SSC Help Center**

**eLearning Modules**
Training videos that guide users on how to use the major features and functionalities in the SSC—Campus platform.

**User Guide**
Web-based reference documentation that gives detailed explanations and instructions for using the SSC—Campus platform.

**Topic-Specific Help Pages**
Search for additional help on a specific topic through the help page links. Topics are divided by user type to help quickly identify features related to your question.