



#### Who Should Read

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President's Council  
Data Governance Lead  
Unit Data Stewards

# Priority Data Analyses to Promote Student Success

Ten Smart Ways to Use Campus Data to Support Better Student Outcomes

## 3 Ways to Use This Resource

- Focus efforts in data governance to align with desired student success analyses and associated outcomes
- Generate leadership buy-in for institutional investment in business and analytics support on campus
- Develop a shared understanding of the potential value of standardized data and analysis for teaching and learning

# Table of Contents

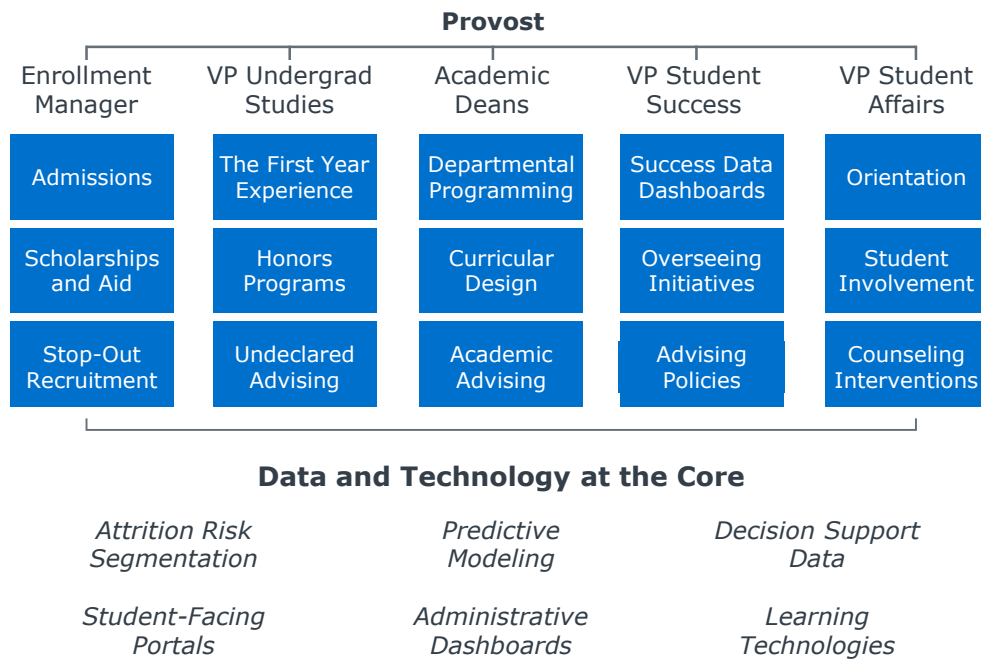
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Priority Analyses for Student Success. . . . .	3
#1: Identify High Drop-Fail-Withdrawal Courses. . . . .	4
#2: Respond to Section Capacity Red Flags. . . . .	5
#3: Map Term-to-Term Retention . . . . .	6
#4: Identify the Impact of Application Timing . . . . .	7
#5: Measure Advising Process Completion. . . . .	8
#6: Isolate Late Major Declaration . . . . .	9
#7: Encourage Full Credit Load. . . . .	10
#8: Identify Potential Credit Over-Accumulation. . . . .	11
#9: Track Term-to-Term GPA. . . . .	12
#10: Enable Standardized Course Attendance Tracking. . . . .	13

# Priority Analyses for Student Success

## Foundational Metrics to Enable Campus Partners in Student Success Initiatives

Student success is a foundational mission of all higher education institutions, and is therefore a prime focus area to build consensus around the need for data governance. These **Priority Data Analyses for Student Success** should be used to determine strategic focus areas for data governance work at the enterprise level. By determining enterprise definitions to the associated terms for these analyses, institutions will be able to run effective analytics and stage impactful interventions to generate widespread support for enterprise data governance and business intelligence work.



### Elements Included for Each Priority Analysis

- **Summary of Analysis:** Explains why the analysis is important and the role it plays in supporting improved student progress
- **How to Generate the Analysis:** Describes how to calculate metrics for the analysis and defines terms
- **Details for Analysis**
  - **Sub-Metrics:** More detailed ways that institutions have used the analysis to guide success efforts
  - **Measure by:** Most impactful categories to measure with the analysis on campus
  - **Data Quality Issues:** Potential challenges associated with how data elements are collected and stored
- **Details for Intervention**
  - **Intervention:** How academic and advising leaders use the results of the analysis
  - **Delivery Method:** The medium which IT should use to communicate the analysis metrics and results with campus stakeholders
  - **Intervention 'Owner':** Most common individuals and roles on campus responsible for implementing interventions identified by the analysis

# Identify High Drop-Fail-Withdrawal Courses

## Summary of Analysis

Centralized data should help academic leaders focus on high drop-fail-withdrawal (DFW) rate courses to minimize the number of unproductive credits (i.e., attempted but not completed) and to optimize the deployment of scarce teaching and advising resources toward courses that can offer the greatest return in student success for faculty time investment. Identify large courses (e.g., more than 100 students) with relatively low completion rates where minor improvements in course-level progress can have outsized impact in credit completion.

## How to Generate the Analysis

For a given term in a given year, for each course taught, what is the ratio of attempted minus earned student credit hours to attempted student credit hours?

- Earned Credits: Students earning a final passing grade in the course
- Attempted Credits: Students registered in the course after the add-drop deadline
- DFW Rate: Attempted Credits minus Earned Credits, divided by Attempted Credits
- Courses, Not Sections: This will help isolate very large courses with multiple sections

$$\frac{(\text{Attempted Credits} - \text{Earned Credits})}{\text{Attempted Credits}} = \text{DFW Rate}$$

### Requirements for Analysis

#### *Sub-metrics*

- DFW rate by course and section
- %A-F in high-enrollment courses
- Total unproductive credits in high-enrollment courses

#### *Measure by*

- College
- Department
- Course
- Section
- Faculty Member

#### *Data Quality Issues*

Inconsistent coding and definitions of D and F grades across colleges

### Details for Intervention

#### *Intervention*

Course redesign, provision of academic advising resources, flipped classrooms

#### *Intervention Owners*

- College Deans
- Department Chairs
- Academic Support Staff

#### *Delivery Method*

Self-service dashboard view for live comparison of DFW rates and potential drivers of grade distribution variance

# Respond to Section Capacity Red Flags

## Summary of Analysis

Because few institutions embed student demand data into course planning processes, many schools simultaneously have courses that are underfilled and overfilled, meaning that students lack access to critical courses even while instructors and space could theoretically be reallocated to high-demand courses. Provide deans and chairs with real-time data about how current course enrollment compares to maximum enrollment to let academic managers quickly identify under-enrolled sections and prioritize section addition candidates.

## How to Generate the Analysis

What is the ratio of students registered in a course section to the maximum section cap set by faculty?

- Section Fill Rate: Enrolled students divided by section maximum
- Target Section Fill Rate: Practitioners recommend aiming for a fill rate between 70-85%
- Overfilled: Section Fill Rate at or above 85%
- Underfilled: Section Fill Rate at or below 70%

$$\frac{\text{Currently Enrolled Students}}{\text{Section Maximum}} = \text{Section Fill Rate}$$

### Requirements for Analysis

#### *Sub-metrics*

- Average section fill
- Number and percentage of sections under 25% fill rate, over 85% fill rate, and over 100% fill rate

#### *Measure by*

- College
- Department
- Course
- Section

#### *Data Quality Issues*

False section maximums set to expedite faculty review of applying students  
Space maximums rarely recorded uniformly

### Details for Intervention

#### *Intervention*

New sections created to relieve pressure on over-filled courses, under-filled sections collapsed to re-allocate resources

#### *Intervention Owners*

- Provost
- College Deans
- Department Chairs

#### *Delivery Method*

Live-updating dashboard for faculty, department chairs on capacity

# Map Term-to-Term Retention

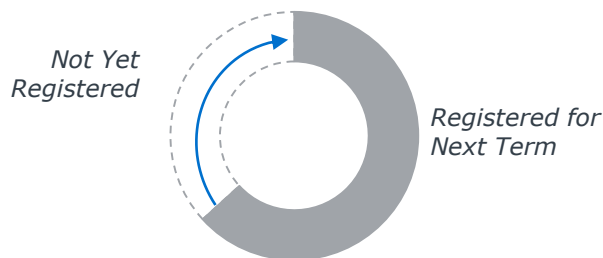
## Summary of Analysis

Overall student retention figures are driven by unit-level progress in registering current students for the following term, but few institutions share unit-level data to help academic managers and staff manage against enrollment goals. Data initiatives should help units understand and manage retention of local students by providing regular updates on unit-level progress to register students in the next semester. If possible, these updates should be weekly during peak registration periods, and delivered to campus in a transparent, clear format that rewards high performers for their successes.

## How to Generate the Analysis

How many students eligible to register for the next term are not yet registered?

- Unit-Level Term-to-Term Retention: Percentage of students currently enrolled that are also registered for the following academic term, pulled at the department and college level



### Requirements for Analysis

#### Sub-metrics

- Number and percentage registered for next term
- Number and percentage retained with no progress

#### Measure by

- College
- Department
- Major

#### Data Quality Issues

Different application dates may exist between colleges, affecting accuracy of lists

### Details for Intervention

#### Intervention

Targeted outreach to un-enrolled students through local campaigns

#### Intervention Owners

- College Deans
- Department Chairs
- Admissions and Enrollment

#### Delivery Method

Weekly list sent to all deans and chairs on course registrations

# Identify the Impact of Application Timing

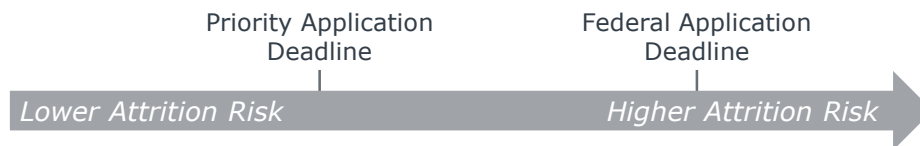
## Summary of Analysis

Virtually all institutions leverage content of financial aid and institutional applications from students to inform risk models and prioritize outreach to students, but few use the timing of those applications (i.e., the date on which a student submitted materials) as an additional way to identify attrition risks. In many institutional studies, students applying later and especially applying at or after federal deadlines are at much higher risk of attrition than students applying earlier; practitioners suspect that application timing demonstrates important non-cognitive factors (e.g., engagement with the institution, grit).

## How to Generate the Analysis

Which students are applying in time periods demonstrated to have higher attrition risks, and what is the measurable impact of that timing on their retention and graduation?

- Priority Deadline: Date established by institution to encourage early applications for admission and financial aid
- Federal Deadline: Final date that federal officials will accept financial aid application
- Application Timing: Distance (in days) from the date of application for admission or financial aid and Early Decision, Priority, and Federal Deadlines



## Requirements for Analysis

### *Sub-metrics*

- Number and percentage completing before priority and federal deadlines
- Retention and graduation outcomes by timing cohort

### *Measure by*

- College
- Department
- Major

### *Data Quality Issues*

Aid and grant codes may differ across colleges, complicating cross-institutional analysis

## Details for Intervention

### *Intervention*

Targeted outreach and education to students identified as applying in highest-risk (latest) times

### *Intervention Owners*

- Admissions and Enrollment
- Financial Aid Office

### *Delivery Method*

Live-updating list of students applying for FAFSA admission in risky times

# Measure Advising Process Completion

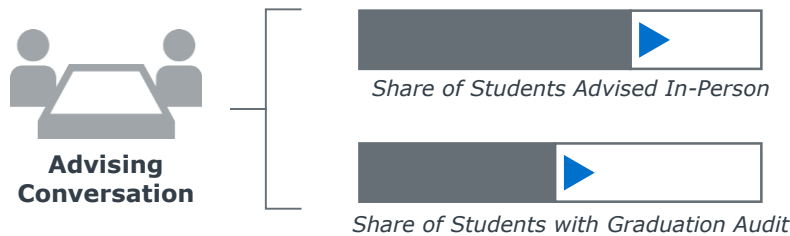
## Summary of Analysis

Academic advising can play a critical role in helping a struggling student get back on path to graduation and long-term success, but at many institutions, advising processes are not centrally monitored or managed. As a result, it is difficult if not impossible to know which advisors, and which interventions, are making the most positive difference for students. Data governance groups should support the collection and delivery of advising process completion data (i.e., record when students interact with advisors) to enable more effective management and leverage of advising appointments to help at-risk students.

## How to Generate the Analysis

How many students are completing advising appointments and receiving support from academic advisors?

- Face-to-Face Appointment: When a student sits down for a conversation with a faculty or professional advisor
- Course Needs Audit: Advisor checks what courses a student needs to take to stay on path to graduation
- Graduation or Time-to-Degree Audit: Advisor checks if current schedule will lead to on-time graduation
- Appointment Reason: Trigger for appointment (e.g., regular scheduling conversation, behavioral issues)



## Requirements for Analysis

### Sub-metrics

- Number of appointments scheduled and attended by reason (e.g., tutoring needed)
- Number and percentage advised in person

### Measure by

- College
- Department
- Major
- Advisor

### Data Quality Issues

College-specific advising systems may not connect with advising CRM; low compliance with attendance tracking among advisors

## Details for Intervention

### Intervention

Continuous assessment of per-advisor progress in reaching students; cohort- and college-level reviews every semester

### Intervention Owners

- Advising management (e.g., VP for Student Success)

### Delivery Method

Advisor-level weekly updates to advising management



# Isolate Late Major Declaration

## Summary of Analysis

While a student may change his or her major multiple times throughout undergraduate education, EAB research has demonstrated that student major switches often follow predictable patterns; some majors tend to remain relatively static (e.g., Nursing), while others may be net “donors” of students (e.g., Computer Science, Biology) or net “acceptors” of students (e.g., Marketing, Business). Available data should help analysts identify students who change their majors late to help prioritize outreach from advisors, and analyze major-major pathways to allow for advising based on the most frequent major clusters.

## How to Generate the Analysis

How many students are declaring their majors late in their academic careers? What are common major pathways?

- Late Major Declaration: Students declaring first major or changing major after sophomore year (for first-time, full-time students seeking a bachelor’s degree) or after two semesters in the institution (for transfer students and those seeking an associate’s degree or certificate)
- Major Cluster: Common major-to-major pathway for students that begin in one academic area and move to another; these clusters or “meta-majors” should have coordinated advising and administrative process to streamline predictable major switches

### Major Declaration Periods by Academic Term



## Requirements for Analysis

### Sub-metrics

- Percentage of declared majors at sophomore status
- Percentage of declared majors after two semesters (associates and transfers)

### Measure by

- College
- Department
- Major

### Data Quality Issues

Transfer major articulation can take months to complete in system; “First” major may not be consistently coded across departments

## Details for Intervention

### Intervention

Major cluster advising based on most common major-major pathways

### Intervention Owners

- Academic advisors (faculty and/or professional)

### Delivery Method

Identification of common major-major pathways for advising restructure

# Encourage Full Credit Load

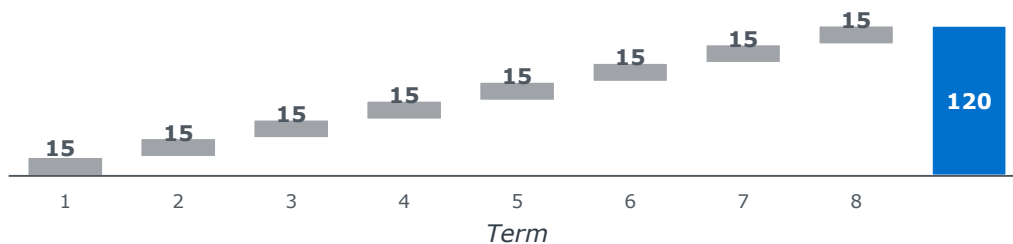
## Summary of Analysis

Across levels of student academic preparation, researchers have found that taking 15 credits per semester rather than 12 improves retention and time to degree. To help encourage more students to enroll with 15 credits per semester, Data governance groups should encourage standardizing definitions for data to perform historical analysis of credit completion ratios, retention, graduation, and time to degree by credits attempted, separating out low and high academic cohorts.

## How to Generate the Analysis

How many students are taking too few credits per semester (i.e., less than 15 per semester on average) to graduate within four years?

- Attempted Credits: Current attempted credits per student per term
- On-Track to Degree: Having enough current credits and enrolled at adequate credit velocity to complete major requirements within four years



### Requirements for Analysis

#### Sub-metrics

- Percentage enrolled with less than 12, 12-15, and 15+ credits per semester
- Percentage of students on track to graduate in four years

#### Measure by

- College
- Department
- Major

#### Data Quality Issues

Credit-bearing course value can differ across colleges and departments (e.g., lab, independent study vs. full course)

### Details for Intervention

#### Intervention

Unit-level campaigns to hit threshold credits for degree progress

#### Intervention Owners

- Provost
- College Deans
- Department Chairs

#### Delivery Method

Data analysis of full-credit impact by student cohort and academic preparation level

# Identify Potential Credit Over-Accumulation

## Summary of Analysis

Because students frequently change majors, transfer, and suffer setbacks during their academic journey, many will graduate with more credits than are mandated by their degree; these students could have graduated sooner, saving themselves in tuition dollars and the institution in capacity. Not all students that graduate with extra credits are in a bad situation (some may simply wish to explore more academic options) but data governance efforts should help campus partners give all students a clear choice by prioritizing data that makes it possible to reach out to students that have between two-thirds and three-quarters of final requirements complete to ensure that final semesters will align to degree.

## How to Generate the Analysis

Which students in junior year are at risk of not completing in their senior year, and are likely to accumulate more credits than they need before leaving the institution?

- Required Credits: Total credits mandated by major
- Completed Credits: Number of credits that student has completed to-date
- Credit Over-Accumulation: When Completed Credits exceeds major Required Credits



Average Undergraduate Final Credits

## Requirements for Analysis

### Sub-metrics

- Major-required completion credits
- Number of credits completed

### Measure by

- College
- Department
- Major

### Data Quality Issues

Major requirements incomplete, decay with organizational/coding changes

## Details for Intervention

### Intervention

Reach out for graduation audit when student has earned between two-thirds and three-quarters of required major credits

### Intervention Owners

- Academic advisors (faculty and/or professional)

### Delivery Method

Identify over-credit students (and recent stop-outs close to graduation) for personalized outreach

# Track Term-to-Term GPA

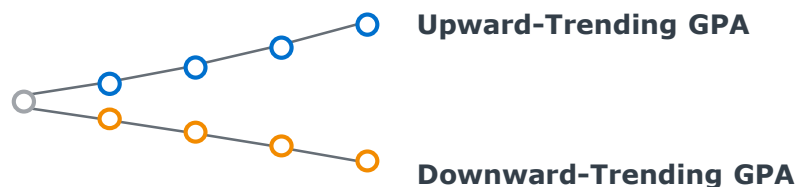
## Summary of Analysis

Cumulative grade point average (GPA) is the most commonly used indicator of academic health, and is usually the main input for early-alert technologies and advising priorities. However, analysis of current GPA is greatly enhanced by also studying the trend of GPA over time, because students that have declining GPAs drop out at much higher frequency than those with ascending GPAs. Identifying and intervening with declining-GPA students will allow student success teams to reach and support at-risk students in time to course-correct and before challenges become too severe.

## How to Generate the Analysis

Are students' GPAs going up or down term to term?

- Cumulative GPA: Total number of grade points earned divided by total number of credit hours attempted
- Major GPA: Grade points earned divided by total number of credit hours attempted for courses within the student's first major
- GPA Trend: Current-term GPA compared to past-term GPA



## Requirements for Analysis

### Sub-metrics

- Term-over-term trend in major and cumulative GPA
- Number of students with downward-trending GPAs

### Measure by

- College
- Department
- Individual Student

### Data Quality Issues

"Curved" majors may generate false-positive GPA trends in students on track to graduate

## Details for Intervention

### Intervention

Direct outreach from advisors to students with higher demonstrated attrition risks

### Intervention Owners

- Academic advisors (faculty and/or professional)

### Delivery Method

Visual of GPA trend to inform advising conversation between students, advisors

# Enable Standardized Course Attendance Tracking

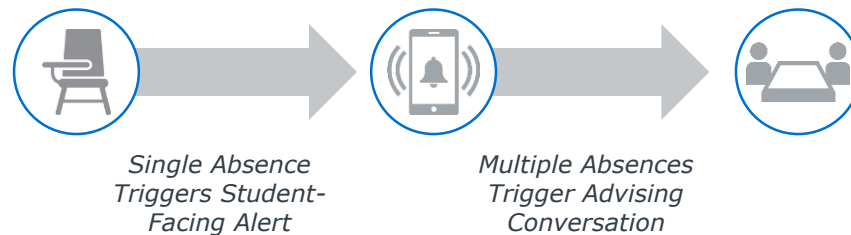
## Summary of Analysis

Many institution-level analyses have identified that course attendance is highly predictive of critical student success metrics like GPA, retention, and graduation; students that go to class tend to do better, across academic preparation levels. Rather than attempt to achieve complete adoption of attendance-tracking software, intervention should focus efforts on the largest, highest-attrition courses, where the implementation of a single tracking tool could impact hundreds of students. Absences should trigger automatic outreach to missing students; multiple absences should trigger mandatory advising conversations.

## How to Generate the Analysis

How many students are not attending class, and how many have multiple absences?

- Course Attendance: Binary flag either generated by faculty action (i.e., taking attendance) or automatically triggered through a technology tool



## Requirements for Analysis

### *Sub-metrics*

- Number of courses not attended
- Average missed courses
- Number and percentage of faculty that record attendance

### *Measure by*

- College
- Department
- Major
- Course
- Section

### *Data Quality Issues*

Strongest in larger gateway courses with mandatory digital inputs; manual faculty tracking difficult to incent and sustain

## Details for Intervention

### *Intervention*

Direct outreach from automated system and/or advising staff to students crossing missed course thresholds

### *Intervention Owners*

- Academic advisors (faculty and/or professional)

### *Delivery Method*

Automatic outreach to students missing class; multiple absences trigger advising conversation



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