

GPS Advising at Georgia State University



Background

Two years ago, academic advisement at Georgia State University was in need of an overhaul. Burdened with an advising system that had developed piecemeal over time across multiple colleges, the University supported six different advising offices with little coordination between them, no common record keeping, and no common training. Georgia State's undergraduate student body--60% non-white, 33% first generation, 53% on Pell--is typified by large numbers of at-risk students, precisely the type of students who most need guidance to navigate a college curriculum. But with student-to-advisor ratios topping 700 to 1 and little access to the data they needed, advisors were overwhelmed. Many of the students who were most in need of help were going unassisted.

Today, as a result of a major initiative launched as part of the 2011 University Strategic Plan, Georgia State has hired 42 additional academic advisors, bringing the student-advisor ratio to the national standard of 300 to 1. It has established a common electronic record system, common training, and a campus-wide University Advising Council. In January 2013, Georgia State opened a new, central advising office that houses almost 70 advisors (representing every college and every major) in a facility in the heart of campus. In its first five months of operation, the University Advisement Center saw 9,900 students--most of whom were proactively identified by their advisors as needing help.

Critical to the transformation of advisement across campus was the University's collaboration with the Education Advisory Board (EAB) to develop and to implement a web-based advising platform. The advising system currently tracks each of Georgia State's 24,000 undergraduates on a daily basis. Dubbed GPS (Graduation and Progression Success) Advising, the system uses seven years of RPG data from Georgia State--over 2 million grades earned by past and present students--to develop a varied set of predictive analytics designed to (a) identify when students have gone off path for graduation, and, with proactive interventions spearheaded by their advisors, (b) quickly get them back on track again. The system features more than 700 alerts--some applying to all students, others to specific majors--each indicating that the student has taken an action which puts him or her significantly at risk. GPS Advising also uses patterns of past students' performance to offer predictive analytics for how each student will fare in every major and most courses that the University offers.

Since going live with the GPS platform in August 2012, Georgia State has used the system to advise almost 13,000 students.

Implementation

Georgia State was one of the four "alpha partners" in EAB's Student Success Collaborative, a group of large public universities that helped to develop the common features of the platform. Georgia State contracted with EAB in late January 2012, hosted the first campus visit of EAB's implementation team in March 2012, and went live with the product in August 2012.

GPS Advising is a web-based system hosted off site, and implementation required no new hardware. Georgia State's IT department worked with EAB to upload the historical data and to establish nightly feeds of new data from GSU's student Banner system into the GPS platform. EAB's parent company is one of the nation's largest providers of hospital patient tracking systems, and Georgia State's IT and legal offices readily accepted the security protocols put in place by EAB to protect the student data. Georgia State's advising leadership hosted four campus visits of EAB personnel and participated in a series of conference calls between March and August to offer recommendations for needed features of the system and to provide EAB with details of Georgia State's academic requirements and majors. EAB developed the alerts and predictive analytics based on the specific contours of GSU's academic programs. Before going live, EAB staff provided on-campus training to all current advisors. The system went live ahead of schedule and on budget in August 2012.

Central Features

Student Dashboard

A single screen for each student offers all of the information that advisors reported was most essential to their work, including the student's major, GPA and credit hours (both depicted longitudinally), holds, alerts, risk factors, remaining courses, records of previous advisement sessions, contact information, and a means of e-mailing the student with one click. (See *Chart 1*.)

Record Keeping

In a feature central to campus needs, the system allows for all advisor contacts with students to be recorded and for notes to be written in a permanent platform accessible to every advisor across campus. Advisement records now follow the student through changes of major and college.

Alerts

Almost all students make bad academic decisions at some point in their studies, but not all bad decisions are equally harmful to graduation prospects. The 700 alerts in the GPS system employ historical data to determine which actions do the most damage to a student's chances for

completion. Alerts identify such things as failure to achieve a minimum grade in a course central to success in a major, failure to complete a course by a particular point in one's academic career, and registration for a course that does not apply to his or her program of study. The alerts do not merely mimic prerequisites. Rather, they are based on the mining of historical data to determine the difference between student success and failure. For instance, for students to be on track to graduate with a degree in nursing, the data show that they need to earn at least a B+ in their first math course, far above the minimum C grade required by the program. Each morning, all alerts triggered over the previous day are automatically sent to the advisor assigned to the impacted students, with a goal of advisor outreach to the student within 24 hours. (See *Chart 2.*)

Predictive Analytics

A cornerstone of GPS Advising is its range of predictive analytics. The system assigns each student a score based on his or her strengths in key areas--math and science, humanities and arts, business and policy--in order to facilitate advisors holding more productive conversations about potential academic directions with their advisees. A "Major Matcher" feature offers probabilities for the student succeeding in every undergraduate major. The matcher also automatically gathers all the courses that the student has taken that apply to each major and the grade he or she received, and it places this information alongside a list of the remaining courses the student would have to complete with predictions how he or she would fare in all of those courses. One of the main challenges for advisors is offering guidance to students foundering in their current majors. The GPS system offers multiple tools for advisors to use in such situations, from features that identify areas in which the student might need additional tutoring and coursework to those that map out entirely new (and promising) majors. (See *Chart 3.*)

Reports

The GPS system allows any advisor immediately to create custom reports based on more than two dozen variables. If an advisor wants to see, for example, a report featuring all of his or her advisees who have at least two alerts with GPAs below 2.5 and senior class standing, the generation of such a report requires only a few seconds.

University Level Analytics

The system tracks analytics by the university, college and department levels. The number of students who are off path, on path, and on the middle ground for graduation is tracked over time for all levels so that trends and the impact of interventions can be tracked. (See *Chart 4.*) In addition, units can gather information for practical actions. The Accounting Department, for instance, knows that it has 160 majors who failed to achieve the minimum grade for the introductory course, allowing it to invite students to group tutoring and advisement. (See *Chart 5.*)

Preliminary Results

The GPS system ultimately seeks to bring more students to the point of graduation and to do so with a lower average number of credit hours at completion. As such, any results 9 months into the initiative will be, at best, preliminary. The tentative results, though, are promising. Georgia State's institutional graduation rate will set a new record this fall, increasing by between 2 and 3 points. In fact, by the end of the spring 2013 semester, with a cohort of summer students still to graduate, a new institutional record had already been set. The spring 2013 semester also saw the highest number of degrees conferred in Georgia State history. Admittedly, both graduation rates and conferrals are impacted by a host of factors, and both metrics were already moving in highly positive directions at Georgia State. (See *charts 6-9.*)

More proximate indicators, though, are similarly positive. Since going live with the GPS platform in August 2012, Georgia State has used the system to advise almost 13,000 students. Between the fall and spring semesters, 64% of sophomores improved the probability of their graduating within four years as indicated by the predictive analytics of the system. Additionally, over the course of the 2012-2013 academic year, the total number of undergraduate students on path for 4-year graduation rose by 9%.

The advantage of the new, big-data systems that are now being introduced into the advisement realm is not merely that they have the potential for large-scale impacts. It is also that they very often replace existing campus advisement practices that are antiquated--practices almost completely devoid of analytics and the systematic use of data or in which precious advising resources are not targeted on the students most in need of help. This was the state of advisement at Georgia State two years ago. While the ultimate impacts of GPS Advising cannot be known at present, the system has every potential to be a game changer.

For more information:

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Chart 1

STUDENT In progress

I want to...

- Change student status
- Email student
- Remind me to follow-up
- Add a note on this student
- Browse student majors

OVERVIEW

Academic Summary

Major: **Biological Science** (College of Arts & Sciences) Map Not Available

| | | | | |
|---------|---------------|--------------|-----------------------------------------------------|-------------------|
| Cum GPA | Total Credits | Total Alerts | Overdue Reminder | Last Profile Edit |
| 1.15 | 34.00 | 12 | Dec 1, 2012 <small>Clear Reminder</small> | 1 month ago |

Student Progress

| | Fall 2009 | Spring 2010 | Summer 2010 | Fall 2010 | Spring 2011 | Summer 2011 | Fall 2011 | Spring 2012 |
|---------------|-----------|-------------|-------------|-----------|-------------|-------------|-----------|-------------|
| Cum GPA | 2.29 | 1.41 | 1.41 | 1.45 | 1.13 | 1.36 | 1.15 | 1.15 |
| Total Credits | 20.00 | 23.00 | 23.00 | 28.00 | 28.00 | 34.00 | 34.00 | 34.00 |

Forecasted Progress

Similar students have taken the following courses:

| Others Have Taken | Difficulty For You |
|-------------------|--------------------|
| BIOL2300 | High |
| BIOL3240 | High |
| BIOL3250 | High |
| BIOL3840 | High |

Chart 2

STUDENT Needs attention

I want to...

- Change student status
- Email student
- Remind me to follow-up
- Add a note on this student
- Browse student majors

SUCCESS PROGRESS

11 alerts (11 new alerts)

Academic Summary

Expand All | Collapse All Legend: 11 New Alerts 0 Alerts

Fall Semester 2008 (2 alerts (2 new alerts))

| Requirement | Status | Minimum performance | Student's performance |
|---------------------------------------------------|-----------------|-----------------------|---------------------------------------------|
| CHEM1211K | Needs attention | Grade: C- | Did not register |
| MATH1101 or Higher <small>View details</small> | Needs attention | 1 course Grade: B- | Needs 1 more course to complete requirement |
| ONE INTRO ENGL <small>View details</small> | Completed | 1 course Grade: C | 1 course completed |

Spring Semester 2009 (3 alerts (3 new alerts))

| Requirement | Status | Minimum performance | Student's performance |
|-----------------------------------------------------|-----------------|-----------------------|------------------------------|
| BIOL2107K <small>View details</small> | Needs attention | 1 course Grade: B- | Did not register for courses |
| ENGL1102 or ENGL1103 <small>View details</small> | Completed | 1 course Grade: C | 1 course completed |

Chart 3

Students > ← Previous student Next student ▶

[Close](#)

Major Matcher

Browse Majors (71) **Saved Majors (3)**

Majors sorted by college

| College of Education | College of Arts & Sciences | College of Health Sciences | Sch of Nursing & Health Prof. | A. Young School Policy Studies |
|---------------------------------|----------------------------|----------------------------|-------------------------------|--------------------------------|
| ● Birth Through Five | ● Art Education | ● Undeclared | ● Undeclared | ● Criminal Justice |
| ● Early Childhood Education | ● Studio | ● Criminal Justice | ● Pre-licensure Nursing | ● Pre-SW |
| ● Health and Physical Education | ● Art | ● Social Work | ● Nutrition | ● Social Work |
| ● Undeclared | ● History | ● Respiratory Therapy | ● Pre-Nutrition | ● Economics |
| ● Middle Level Education | ● Religious Studies | ● Nursing | ● Pre-Respiratory Therapy | ● Inter Economics and Mod Lang |
| ● Exercise Science | ● Undeclared | ● Pre-Nursing | ● Respiratory Therapy | ● Public Policy |
| | ● Music | | ● Pre-Nursing | |
| | ● Journalism | | | |

Next

Filter View:

Show Strong Matches Only

- A. Young School Policy Studies
- College of Arts & Sciences
- College of Education
- College of Health Sciences
- Robinson College of Business
- Sch of Nursing & Health Prof.
- University College(Undeclared)

Total Credits Earned: 171.00
Cumulative GPA: 2.23
Major: Pre-Nutrition, BS

Chart 4

Students Institutional Analytics

INSTITUTIONAL ANALYTICS

Colleges > Major Comparison Predicted Risk Level: ■ Low ■ Med ■ High ■ N/A

Major Comparison for College of Arts & Sciences

3 Majors **4,205** Students

Selected Majors:

- African American Studies
- Anthropology
- Applied Linguistics
- Art
- Art Education
- Biological Science
- Chemistry
- Computer Science
- English
- Film and Video
- French
- Geography
- Geology
- German
- History
- Interdisciplinary Studies

Chemistry 2.70 Avg. Cumulative GPA

606 Total % Risk Levels: ■ Low ■ Med ■ High ■ N/A **94** Low **186** Med **112** High **214** N/A **0** Students on Academic Probation

Biological Science 2.58 Avg. Cumulative GPA

2,712 Total % Risk Levels: ■ Low ■ Med ■ High ■ N/A **887** Low **882** Med **412** High **531** N/A **0** Students on Academic Probation

Art 2.50 Avg. Cumulative GPA

887 Total % Risk Levels: ■ Low ■ Med ■ High ■ N/A **420** Low **257** Med **59** High **151** N/A **0** Students on Academic Probation

Chart 5

| Course | Alert Desc | Total |
|------------|----------------------|-------|
| ACCT 2101 | Did not register | 559 |
| | Missed Minimum Grade | 218 |
| | Course not completed | 53 |
| | Updated by advisor | 5 |
| ACCT 2102 | Did not register | 468 |
| | Missed Minimum Grade | 160 |
| | Course not completed | 46 |
| | Updated by advisor | 8 |
| BIOL 1110K | Did not register | 532 |
| | Missed Minimum Grade | 189 |
| | Course not completed | 36 |
| | Updated by advisor | 1 |
| BIOL 1120K | Did not register | 490 |
| | Missed Minimum Grade | 128 |
| | Course not completed | 14 |
| BIOL 2300 | Did not register | 224 |
| | Missed Minimum Grade | 169 |
| | Course not completed | 55 |
| BIOL 2310 | Did not register | 286 |
| | Missed Minimum Grade | 43 |
| | Course not completed | 19 |
| BUSA 3000 | Did not register | 376 |
| | Missed Minimum Grade | 76 |
| | Course not completed | 37 |
| | Updated by advisor | 6 |
| CHEM 1151K | Did not register | 104 |
| | Missed Minimum Grade | 48 |
| | Course not completed | 4 |

Why are so many students missing the threshold grade in Accounting?

Why are so many students not taking introductory science courses on time?

Chart 6

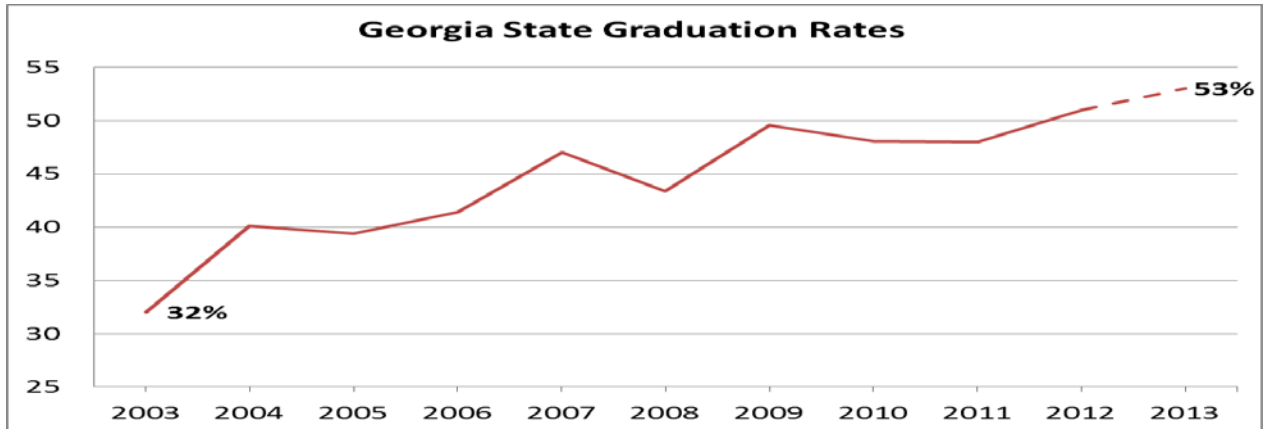


Chart 7

| Georgia State Degree Conferrals | | | | | | |
|----------------------------------------|--------------|--------------|--------------|--------------|-------------|-------------|
| 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 1-Yr Change | 4-Yr Change |
| 5,857 | 6,188 | 6,419 | 6,901 | 7,365 | +7% | +26% |

Chart 8

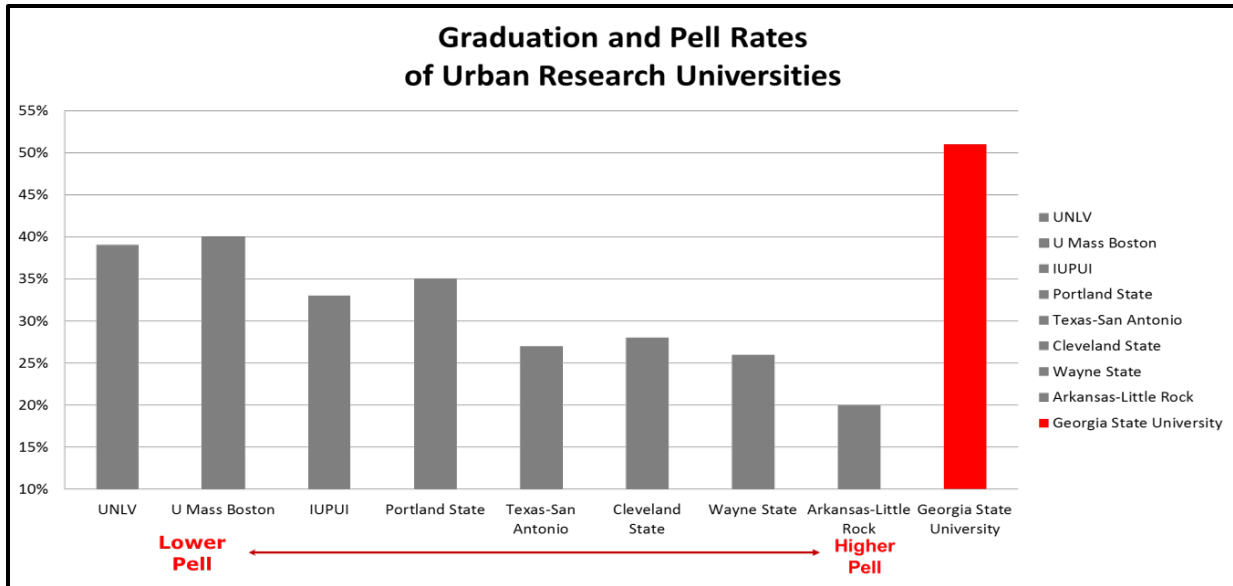


Chart 9

