INSTITUTIONAL DATA ANALYTICS PLATFORM (IDAP)

FORECAST: A TOOL TO PROMOTE BEHAVIORS OF SUCCESSFUL STUDENTS

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• Additional behavior markers
  • Class activity (LMS)
  • Use of services (card transactions)
  • Physical location (network log)

Models (correlation, not causality) for student outcomes
COLLABORATORS

- Ming Ming Chiu - Educational Studies
- Jennifer Neville – Computer Science and Statistics
  - Dan Goldwasser – Computer Science
  - Bruno Ribeiro – Computer Science
- Krishna Madhavan – Engineering Education
  - Matthew Ohland – Engineering Education
  - Heidi Diefes-Dux – Engineering Education
- Student representation (could not get names)
- Purdue legal counsel
- External counsel
- Institutional Review Board (IRB)
- Frank Dooley – Vice Provost Teaching and Learning
- Pam Horne – Associate Vice Provost Enrollment Management, Dean of Admissions
- Beth McCuskey – Vice Provost for Student Life
- Frank Blalark – Registrar
- Greg Hedrick – Chief Information Security Officer
**Attributes/Behaviors in the Models**

- **Representative Attributes**
  - Ethnicity
  - Gender
  - Parent income
  - Average first year Purdue GPA of students from same high school

- **Representative Behaviors**
  - Student’s most recent cumulative GPA for course work
  - Average number of courses the student logs into the LMS every week
  - Do students log in more or less to course LMS than typical
  - How many days a week the student is on the academic campus

**REMEMBER:**
1) FERPA compliant
2) IRB approved
3) Internal and external counsel approved
4) Students, faculty, and administrators reviewed
MODELS TO DATE

• Three models built
  • Four-Year Graduation (tuned to identify late graduates)
  • Term GPA (tuned to identify GPA below 2.0 for semester)
  • Course GPA (tuned to identify GPA below 2.0 for a course)

• Each model examined over 300 possible attributes/behaviors
  • Final models each utilized between 100 and 200 of these

• New data sources (network logs, card swipes, LMS) have proven to be very valuable
  • Have contributed some of the most important variables in the models
    • These are behaviors
Models tuned for fraction correct
- Fraction of students correctly expected to attain the outcome

Models all have fraction correct of 70% or better
- Will improve as we refine, add inputs, and add more data

Fraction correct if randomly selected students
- Late graduate is 0.34
- Term GPA < 2.0 is 0.15
- Course GPA < 2.0 is 0.10

### Graduation Class Label

<table>
<thead>
<tr>
<th>Label</th>
<th>Fraction Correct</th>
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<tbody>
<tr>
<td>Dropped</td>
<td>0.25</td>
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<tr>
<td>Late</td>
<td>0.71</td>
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<tr>
<td>Normal</td>
<td>0.51</td>
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### Term GPA

<table>
<thead>
<tr>
<th>GPA</th>
<th>Fraction Correct</th>
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<tbody>
<tr>
<td>&lt; 2.0</td>
<td>0.80</td>
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<tr>
<td>≥ 2.0</td>
<td>0.73</td>
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### Course GPA

<table>
<thead>
<tr>
<th>GPA</th>
<th>Fraction Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2.0</td>
<td>0.77</td>
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<tr>
<td>≥ 2.0</td>
<td>0.81</td>
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</table>
The Key Behaviors

Several key behaviors were identified as common to successful 4-year graduates in the past 4 years at Purdue.

- Balanced Course Loads
- Registering On Time
- Taking Classes with a Buddy
- Using Campus Facilities
- Being Engaged in Campus Activities
Register for Courses on Time

Why is early registration important?

Your assigned time ticket allows you to register up to weeks in advance of the open registration date. Registering during this time helps ensure that you’ll get into the courses you want during the semester that you need them.

Not getting into required courses and being forced to take electives that don’t interest you can lead to late graduation and poor performance.

Resources

- My Purdue
- Office of the Registrar
- Course Catalogs
Be Aware of Your Course Load

Offset difficult courses with moderate electives

It’s not always possible to avoid several highly difficult courses at a time, but knowing the difficulty rating of your courses allows you to balance your schedule and time.

Consider your overall semester difficulty rating when selecting electives and look for chances to rearrange your schedule to avoid taking too many highly demanding courses at once.

Resources
- Purdue Advisors
- Course Catalogs

Want to look up a course’s DFW rate?

Use the button below to look for the best courses to balance your workload while still completing your core requirements.

LOG IN

LOOK UP A DFW RATING
Take Courses With a Buddy

What impact can a study buddy have on your grades?

Data indicates that students who take a course with a buddy are more likely to do well than students who don't. Not only do they typically earn higher grades, they also tend to have similar GPAs.

Consider finding a friend in your major and registering for classes together. Looking for ways to meet other students? Try joining a student club or learning community.

Read more >

Resources
- Learning Communities
- Student Organizations
NEXT STEPS

• Members of Senate, Student Government invited to participate in application committee

• Application committee met for the first time on 1/20 to begin discussion on format and messaging of initial release

• Initial release for application is planned for mid-semester when registration opens for students

• Continue to refine models as additional data and sources are added