

# Data Use @ Purdue

## Visualization and Predictive Analysis

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# Visualization and Analytics

- 1) Purdue collects massive amounts of data about students, faculty, and the university, and shares this information in the data digest. Tableau is used as the visualization and presentation tool for these data.
  
- 2) Purdue is also using data analytics to help students succeed.
  - SIGNALS
  - Institutional Data Analytics Project

# Data Digest Dashboard-Enrollment

Browser: [https://tableau.itap.purdue.edu/#/views/1\\_1OfficialEnrollment/EnrollmentOverview?iid=](https://tableau.itap.purdue.edu/#/views/1_1OfficialEnrollment/EnrollmentOverview?iid=) | Waiting for tableau.itap.pur... x

File Edit View Favorites Tools Help

Suggested Sites Free Hotmail ITaP Homepage Outlook Web Access Purdue Directory Web S.5900.0.tmp

Search

Home > Graduate School > 1.1 Official Enrollment > Enrollment Overview ☆

**Filter on session**

Fall  
 Spring  
 Summer

**Academic College\***  
(All)

**Academic Major\***  
(All)

**College with IGP\*\***  
(All)

**Major with IGP\*\***  
(All)

**Concentration**  
(All)

**URM**  
(All)

\* Academic College (Major) reports interdisciplinary students to academic programs.

\*\* College (major) with IGP reports interdisciplinary students to IGP programs.

Click the icon to export raw data to a CSV file

**A glance of Fall 2015 Enrollment**

8,974  
enrolled

26%  
(2,332)  
incoming

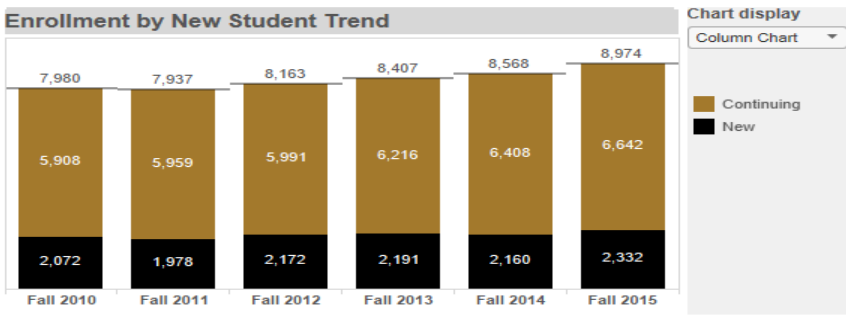
39%  
(3,458)  
female

13%  
(654)  
URM

**Row subcategories**: New Student | **Column Subcategories**: Term/Year

**Enrollment by New Student**

	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
<b>New</b>	2,072	1,978	2,172	2,191	2,160
<b>Continuing</b>	5,908	5,959	5,991	6,216	6,408
<b>Grand Total</b>	7,980	7,937	8,163	8,407	8,568



**Chart display**  
Column Chart

Legend: ■ Continuing, ■ New

**Filter on session**

Fall  
 Spring  
 Summer

**Academic College\***

(All) ▾

**Academic Major\***

(All) ▾

**College with IGP\*\***

(All) ▾

**Major with IGP\*\***

(All) ▾

**Concentration**

(All) ▾

**URM**

(All) ▾

### A glance of Fall 2015 Enrollment

8,974  
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26%  
(2,332)  
incoming

### Row subcategories

New Student

### Enrollment by New Student

	Fall 2015
New	2,072
Continuing	5,908
<b>Grand Total</b>	<b>7,980</b>

Example: we could filter by college and URM status

Filter on session

- Fall
- Spring
- Summer

Academic College\*

(All)

Academic Major\*

(All)

College with IGP\*\*

(All)

Major with IGP\*\*

(All)

Concentration

(All)

URM

(All)

A glance of Fall 2015 Enrollment

8,974 enrolled

26% (2,332) incoming

Row subcategories

New Student

Enrollment by New Student

	Fall 2015
New	2,072
Continuing	5,908
<b>Grand Total</b>	<b>7,980</b>

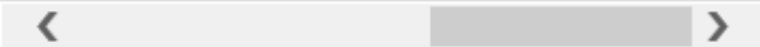
All Minorities  
 All URMs  
 2 + races  
 Native American  
 Asian  
 Black  
 White  
 Hispanic

Major with IGP\*\*  
(All) ▾

Concentration  
(All) ▾

RM  
(All) ▾

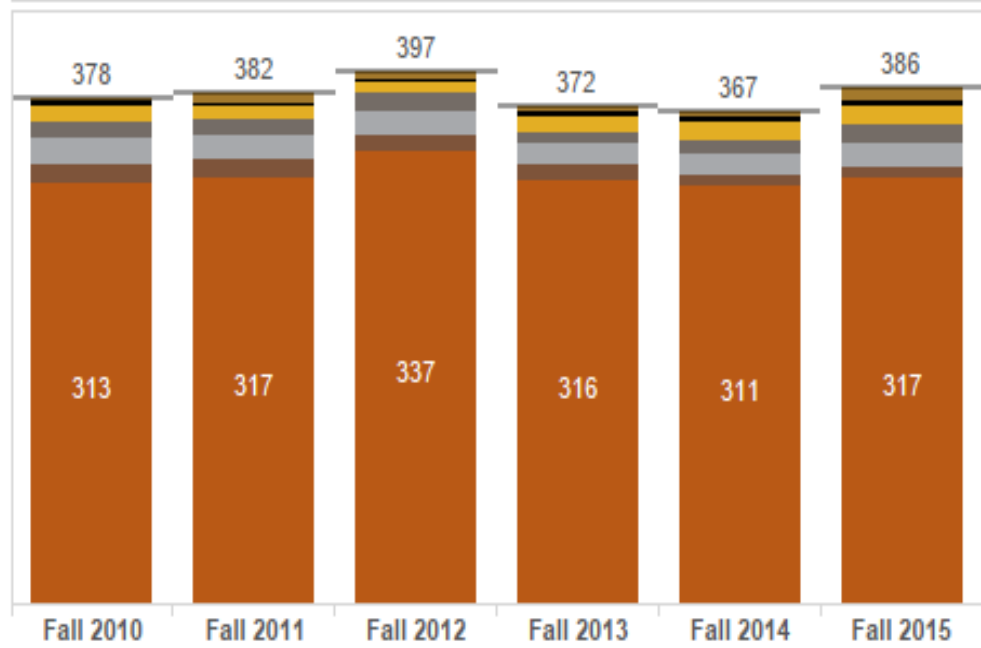
2 or more races	1	4	7	4
American Indian or Alaska Native	1	3	3	
Asian	6	6	8	7
Black or African American	3	7	3	6
Hispanic/Latino	10	7	10	15
Unknown	3	6	2	5
White	186	136	175	179
Grand Total	210	169	198	216



Academic College (Major) reports interdisciplinary students in academic programs.

College (major) with IGP reports interdisciplinary students in IGP programs.

### Enrollment by Reporting Ethnicity Trend



#### Chart display

Column Chart ▾

- 2 or more races
- American Indi..
- Asian
- Black or Africa..
- Hispanic/Latino
- Unknown
- White

Click the icon to export raw data to a CSV file



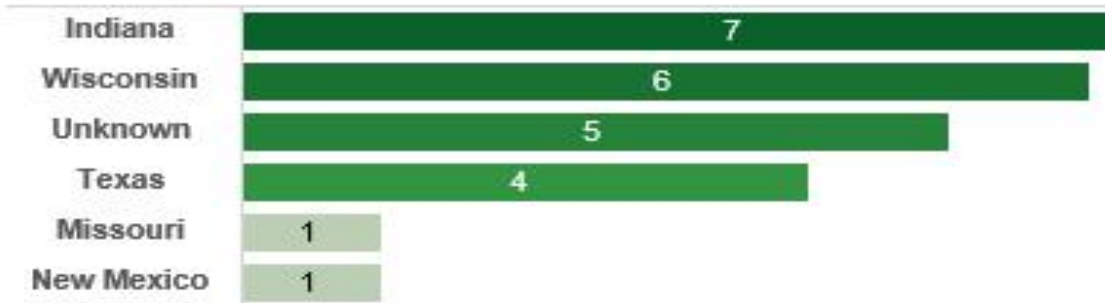
**Session**

Fall  
 Spring  
 Summer

**Select a map view**

Domestic

**Domestic Listing\*\*\* for Enrollment** *Click an item to filter on*



**Academic Period**

(All)

**Academic College\***

College of Agriculture

**Academic Major\***

Forestry & Natrl Resources

**College with IGP\*\***

(All)

**Major with IGP\*\***

(All)

**Concentration**

(All)

**URM**

URM

**Domestic Enrollment Map View**



Fall  
 Spring  
 Summer

**Academic Period**  
 Fall 2015

**Academic College\***  
 (All)

**Academic Major\***  
 (All)

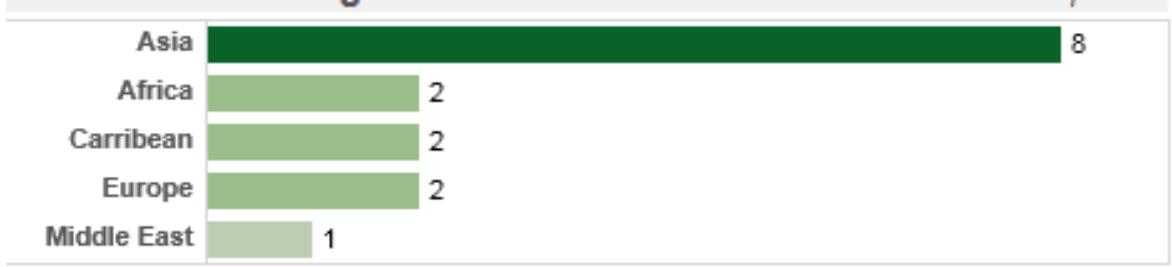
**College with IGP\*\***  
 (All)

**Major with IGP\*\***  
 (All)

**Concentration**  
 (All)

**URM**  
 (All)

International



### International Enrollment Map View



\* Academic College (Major) reports interdisciplinary students to academic programs.



# Using Data Analytics to Help Students

# SIGNALS in the Media



NBC Nightly News with Brian Williams

# Purdue's Data Analytics Platform

Next generation of SIGNALS concept  
Brent Drake, Monal Patel, Ian Pytlarz, Xi Zhang

# **Institutional Data Analytics Platform (IDAP)**

## **Employs 250+ features:**

Attempts to mine all data, including behavioral markers.

Time taken to register for classes

Difficulty of courses taken

LMS Usage

Dining transactions

GPA's of friends who take courses together

Network logs

Absences from class

Use of the recreation center

Course GPA Model

Course/Semester Difficulty Rate (DFW)

Time On Campus – Not in Class

Internet Usage in Class

Instructor Grading Behavior

Early Course Registration

## **Observations and correlations**

- GPAs of friends who take courses together are highly correlated
  - ~9% higher than those of students who do not
- Amount of time students spend on campus correlates highly with performance
- Absences from class correlate with poor performance.
- Students who use the recreation center at least once per week do significantly better than others

## **IDAP**

- Shows students the data and trends
- Displays the individual student data
- Provides suggestions and recommendations to assist.

Points students to resources (tutoring sessions, advisors, how to remove holds on record, degree planner video, etc.)

**THE END**