DATA VISUALIZATION AND ANALYSIS

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Dean of the Purdue University Graduate School, and
Michael and Katherine Birck Professor
of Electrical and Computer Engineering
WHAT IS DATA VISUALIZATION?

❖ Looking at data comprehensively.
   ❖ More than just numbers.
   ❖ Understanding the processes that produced the numbers.
   ❖ Understanding the goal of the users.

❖ Looking at data dynamically.
   ❖ The visualization needs to be flexible.
   ❖ The visualization needs to be useful.
   ❖ The visualization needs to be accurate.
BASIC DATA ASSOCIATED WITH GRADUATE EDUCATION USING DASHBOARDS

❖ Recruitment, Application, Admission
❖ Student Records
  ❖ Enrollment and courses
  ❖ Employment
  ❖ Graduation
❖ Comparative Data
❖ Quality/Performance Assessment Data
THE AUDIENCE

❖ General Public
❖ Faculty, Senate, BoTs, Administrators
❖ Campus Community
❖ Prospective Students
❖ Program Review Committees
DATA VISUALIZATION EXAMPLES
(CONTEXTS)
❖ Grad Expo (Recruiting Event)
❖ Admissions and Enrollment
❖ The Power of Tableau
❖ Comparative Data Visualization
❖ Discussion Facilitation
❖ Student Success
Grad Expo Attendance Dashboard

Attendees by Expo Year

- Number of Attendees: 0 to 450

PWL College of Interest
- Engineering
- Science
- Other

# Colleges Rep.
- 525

# States/Terr.
- 54

Number of URM
- 269

Average UGPA
- 3.60

Audience: College Recruiters
RECRUITING: EXPO ATTENDANCE

Attendees by Expo Year

<table>
<thead>
<tr>
<th>Expo</th>
<th>Number of Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>180</td>
</tr>
<tr>
<td>2006</td>
<td>220</td>
</tr>
<tr>
<td>2007</td>
<td>250</td>
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<tr>
<td>2008</td>
<td>300</td>
</tr>
<tr>
<td>2009</td>
<td>320</td>
</tr>
<tr>
<td>2010</td>
<td>350</td>
</tr>
<tr>
<td>2011</td>
<td>380</td>
</tr>
<tr>
<td>2012</td>
<td>400</td>
</tr>
<tr>
<td>2013</td>
<td>390</td>
</tr>
<tr>
<td>2014</td>
<td>380</td>
</tr>
<tr>
<td>2015</td>
<td>350</td>
</tr>
<tr>
<td>2016</td>
<td>320</td>
</tr>
</tbody>
</table>
RECRUITING: ATTENDANCE BY COLLEGE

## PWL College of Interest

- **Engineering**
- **Science**
- **OIGP**
- **Ag**
- **Tech**

### Att Prev Coll

- **# Colleges**
  - Rep. 525
- **# States/Terr.**
  - 54

### Number of URM

- 289

### Average UGPA

- 3.60
APPLICATIONS, ADMITS AND ENROLLED FUNNEL GRAPH

Can filter by
College
Major
Degree Obj
Race/Ethnicity
Gender

![Graph showing applications, admits, and enrolled numbers from 2006 to 2016. The graph is divided into columns for each year, with black bars for applicants, yellow bars for admitted, and grey bars for enrolled. The numbers vary each year, indicating trends in admissions and enrollment.](image)
APPLICATION, ADMITS, ENROLLED BAR-IN-BAR GRAPH

Application, Admission, and Matriculation Chart

<table>
<thead>
<tr>
<th>Semester</th>
<th>Application</th>
<th>Admission</th>
<th>Matriculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>AY2011-2012</td>
<td>5,862</td>
<td>2,744</td>
<td>Matrics***</td>
</tr>
<tr>
<td>AY2012-2013</td>
<td>5,786</td>
<td>2,872</td>
<td>Adms</td>
</tr>
<tr>
<td>AY2013-2014</td>
<td>5,797</td>
<td>2,936</td>
<td>Apps</td>
</tr>
<tr>
<td>AY2014-2015</td>
<td>5,568</td>
<td>2,936</td>
<td></td>
</tr>
<tr>
<td>AY2015-2016</td>
<td>6,138</td>
<td>3,225</td>
<td></td>
</tr>
<tr>
<td>AY2016-2017</td>
<td>6,158</td>
<td>2,957</td>
<td></td>
</tr>
</tbody>
</table>

Hover for Questions

Semester:
- All

Chart / table:
- Chart

Column subcategories:
- All

Academic College:
- (All)

Academic Major:
- (All)

College_I GP:
- (All)

Major_I GP:
- (All)

Legend:
- Matrics***
- Adms
- Apps
A glance of Spring 2017 Enrollment

8,983 enrolled
7% (640) incoming
41% (3,717) female
14% (737) URM

<table>
<thead>
<tr>
<th>Row subcategories</th>
<th>New Student</th>
<th>Column Subcategories</th>
<th>Term/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td></td>
<td>Spring 2011</td>
<td>433</td>
</tr>
<tr>
<td>Continuing</td>
<td></td>
<td>Spring 2012</td>
<td>459</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 2013</td>
<td>424</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 2014</td>
<td>435</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spring 2015</td>
<td>511</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td>7,565</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,567</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,807</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7,957</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8,163</td>
</tr>
</tbody>
</table>

Enrollment by New Student Trend

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7,132</td>
<td>7,188</td>
<td>7,383</td>
<td>7,822</td>
<td>7,652</td>
<td>7,972</td>
<td>8,343</td>
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</tbody>
</table>

* 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.
### Enrollment by New Student Trend

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>433</td>
<td>459</td>
<td>424</td>
<td>435</td>
<td>511</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuing</td>
<td>7,132</td>
<td>7,108</td>
<td>7,383</td>
<td>7,522</td>
<td>7,652</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>7,565</td>
<td>7,567</td>
<td>7,807</td>
<td>7,957</td>
<td>8,163</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Domestic</td>
<td></td>
<td>International</td>
<td></td>
<td>Grand Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
<td>-------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td>262</td>
<td>26.57%</td>
<td>406</td>
<td>26.08%</td>
<td>668</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>226</td>
<td>32.16%</td>
<td>100</td>
<td>-23.06%</td>
<td>326</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>1315</td>
<td>12.30%</td>
<td>6184</td>
<td>3.10%</td>
<td>7,499</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health and</td>
<td>790</td>
<td>2.20%</td>
<td>413</td>
<td>0.24%</td>
<td>1,203</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human Sciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interdisciplinary</td>
<td>104</td>
<td>-9.57%</td>
<td>130</td>
<td>-36.59%</td>
<td>234</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and Special Programs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>645</td>
<td>-0.92%</td>
<td>330</td>
<td>-12.47%</td>
<td>975</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>299</td>
<td>-13.08%</td>
<td>1031</td>
<td>-23.74%</td>
<td>1,330</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td>11</td>
<td>37.50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polytechnic Institute</td>
<td>140</td>
<td>14.75%</td>
<td>5</td>
<td>63.44%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>769</td>
<td>11.29%</td>
<td>2562</td>
<td>-5.77%</td>
<td>3,331</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary Medicine</td>
<td>20</td>
<td>11.11%</td>
<td>27</td>
<td>22.75%</td>
<td>47</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,581</td>
<td>7.26%</td>
<td>11,819</td>
<td>-1.12%</td>
<td>16,400</td>
<td></td>
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</tr>
</tbody>
</table>
### EXPANDED VIEW

#### Ethnicity

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or more races</td>
<td>0.92%</td>
</tr>
<tr>
<td>American Indi.</td>
<td>0.03%</td>
</tr>
<tr>
<td>Asian</td>
<td>3.07%</td>
</tr>
<tr>
<td>Black or Africa</td>
<td>1.43%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>2.40%</td>
</tr>
<tr>
<td>International</td>
<td>72.07%</td>
</tr>
<tr>
<td>Native Hawaiia.</td>
<td>0.01%</td>
</tr>
<tr>
<td>Unknown</td>
<td>0.52%</td>
</tr>
<tr>
<td>White</td>
<td>19.55%</td>
</tr>
</tbody>
</table>

#### Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctoral</td>
<td>43.47%</td>
</tr>
<tr>
<td>Educational Spec.</td>
<td>0.01%</td>
</tr>
<tr>
<td>Grad Certificate</td>
<td>0.52%</td>
</tr>
<tr>
<td>Grad Professional</td>
<td>0.40%</td>
</tr>
<tr>
<td>Masters</td>
<td>54.92%</td>
</tr>
<tr>
<td>Non-Degree</td>
<td>0.37%</td>
</tr>
<tr>
<td>Teachers License</td>
<td>0.32%</td>
</tr>
</tbody>
</table>

#### Programs

- Liberal Arts
- Management
- Pharmacy
- Polytechnic Institute
- Science
- Veterinary Medicine

#### Continent (*Strategic*)

<table>
<thead>
<tr>
<th>Continent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa*</td>
<td>291</td>
</tr>
<tr>
<td>Asia and Pacific Isla.</td>
<td>10,505</td>
</tr>
<tr>
<td>Australia*</td>
<td>11</td>
</tr>
<tr>
<td>Carribean</td>
<td>29</td>
</tr>
<tr>
<td>Central America</td>
<td>32</td>
</tr>
<tr>
<td>Europe*</td>
<td>304</td>
</tr>
<tr>
<td>Middle East</td>
<td>570</td>
</tr>
<tr>
<td>North America</td>
<td>125</td>
</tr>
<tr>
<td>South America*</td>
<td>180</td>
</tr>
</tbody>
</table>

#### Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>F.</td>
<td>36.26%</td>
</tr>
<tr>
<td>M.</td>
<td>63.74%</td>
</tr>
</tbody>
</table>

#### URM

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-URM</td>
<td>15,685</td>
</tr>
<tr>
<td>URM</td>
<td>715</td>
</tr>
</tbody>
</table>

#### Residency

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resident</td>
<td>956</td>
</tr>
<tr>
<td>Non-Res.</td>
<td>3,840</td>
</tr>
<tr>
<td>Foreign</td>
<td>11,604</td>
</tr>
</tbody>
</table>
EXPANDED VIEW: ADMITTED AND DENIED APPLICANTS

Average GRE Total Score by Admit Status

Category
- Admitted
- Rejected

Average UGPA by Admit Status
DOMESTIC ENROLLMENT MAP VIEW

Select a map view
Domestic

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

- Indiana: 2394
- Unknown: 213
- Illinois: 430
- California: 422
- Michigan: 173
- Texas: 141
- Ohio: 134
- Florida: 117
- New York: 81
- Virginia: 81
- Pennsylvania: 80

* Academic College (Major) reports interdisciplinary students to academic programs.
** College (major) with IGP reports interdisciplinary students to IGP programs.
***The state information uses state_province_desc field from GDS. The country information uses nation_of_citizenhip_desc field...
FILTERING BY GEOGRAPHY - EXAMPLE

### International Listing for Enrollment

<table>
<thead>
<tr>
<th>Region</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia</td>
<td>1,345</td>
</tr>
<tr>
<td>South America</td>
<td>34</td>
</tr>
<tr>
<td>Europe</td>
<td>50</td>
</tr>
<tr>
<td>Middle East</td>
<td>17</td>
</tr>
<tr>
<td>Africa</td>
<td>19</td>
</tr>
<tr>
<td>North America</td>
<td>13</td>
</tr>
<tr>
<td>Central America</td>
<td>13</td>
</tr>
<tr>
<td>Caribbean</td>
<td>13</td>
</tr>
<tr>
<td>Australia</td>
<td>13</td>
</tr>
</tbody>
</table>

*Click an item to filter on map*

### International Enrollment Map View

[Map showing international enrollment numbers by country]
WHERE ARE STUDENTS COMING FROM?

APPL., ADMISSION, ENROLLMENT

---

Undergraduate Institutions *Click to filter on a semester or apps/adm/matrics*

- Shanghai Jiao Tong Univ-Ch.
- Univ of Science & Tech-China
- Zhejiang University-China
- Tsinghua University-China
- Peking University-China
- Univ of Illinois At Urb/Cmpn
- Birla Inst Tech & Sci-India
- Anna University-India
- Wuhan University-China
- Fudan University-China
- Huazhong Univ Sci & Tec-China
- Vellore Inst Of Tech India
- Natl Taiwan University
- Beihang Univ China

---

<table>
<thead>
<tr>
<th></th>
<th>Avg. GRE Total</th>
<th>Avg. TOEFL Total</th>
<th>Avg. UGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>314.9</td>
<td>99.30</td>
<td>3.52</td>
</tr>
</tbody>
</table>

---

Application: Fall 2016, Fall 2015, Fall 2014, Fall 2013

Admission: Fall 2016, Fall 2015, Fall 2014, Fall 2013

Matriculation: Fall 2016, Fall 2015, Fall 2014, Fall 2013
APPLICATION AND ADMISSIONS

Selectivity Rate

% of applicants admitted

Yield Rate

% of admits who enroll
PROGRAMS ARE SOMETIMES INTERESTED IN
COMPARATIVE DATA AND NATIONAL DATA
WHERE DO ADMITTED AND DENIED STUDENTS GO?
NATIONAL COLLEGE CLEARINGHOUSE DATA

Destinations for Graduate Applicants
Admitted Purdue Applicants
Example: Anonymous display of peer data

Select a question to examine. Questions are written in blue.

- **2011-12 ECEDHA DEPARTMENT SURVEY**
  - I. Faculty Demographics (Fall Term)
    - A. Full-time university faculty (FTE)
    - B. Part-time faculty (FTE)
  - II. Faculty Numbers, Salaries, and Diversity
  - III. Department Head’s Compensation
  - IV. Research Staff
  - V. Faculty support
    - A. Department funded travel expenditures
    - B. Clerical employees
    - C. Number of technicians (FTE)
    - D. Number of graduate assistants (RAs and TAs)
    - E. Average Graduate Stipends (in $ per month)
    - F. Average faculty office size
    - G. Department space
    - H. Space breakout in terms of percent of total space
  - VI. Laboratory Equipment Expenditures and Donations
  - VII. Productivity Measures
    - A1. Degrees Completed
    - A2. Degrees completed by women and underrepresented minorities
    - A3. Undergraduate Student Enrollments
    - A4. Undergraduate Student Enrollment Diversity
    - A5. Graduate Student Enrollment
    - A6. Graduate Student Enrollment Diversity
    - B. External federal, state, and industrial research funds
    - C. Research–active faculty teaching load in semester courses per year
    - D. Non–research active teaching load
    - E. Percent of salary per term needed to buy out of teaching one course.
  - Comments

---

Your Peer Group

- 00. Upper State University
- 01. Golden State University
- 02. Orange State University
- 03. Mellon State University
- 04. Lower State University
- 05. Out-of-State University
- 06. In-State University
- 07. Private University
- 08. Eastern Canada University
- 09. Western Canada University
- 10. Richie Rich University
- 11. Sunshine Institute of Technology
- Modify Peer Group
Averages: Subpart D, titled "New Assistant Professors" refers to the subset of Assistant Professors counted in subpart C who were hired in the last 12 months.

Faculty: (select one or more)
- A. Professor
- B. Associate Professor
- C. Assistant Professor
- D. New Asst Profs hired within 1 yr

Measures: (select one)
- Number of faculty members
- Average Salary
- Number of African-American, Hispanic-American, and Native American faculty (FTE)
- Number of women faculty

Charting options:
- Include explicit zero responses in average calculations
- Normalize applicable values per faculty

Update Chart

The chart below shows data from your peer group. To assure anonymity, peers are assigned a random letter on each chart generation. The most recent data from each peer data shown. If data were collected before the most recent survey session, it is noted.

Zoom in on a portion of the chart by clicking and dragging your mouse to select a region of the chart. Print or download the chart using the icons in the upper right corner of the chart.

II. Faculty Numbers, Salaries, and Diversity
ADMITTED STUDENT SURVEY

Purdue Attendance

- Yes: 530
- No: 154
- Not Responded: 5
- Not Responded: 3

Total: 626
ADMITTED STUDENT SURVEY: ATTENDANCE FACTORS

Count of Importance Factors: 2,820

Admitted College
Admitted Major
Instructional Delivery
Degree Objective
Factors for Choosing Schools to Apply for Admission
Attending Purdue?
Reasons for Not Enrolling
Financial Aid Offer
Citizenship

Importance Factors
- Campus Location
- Financial support/funding offered
- Local community’s cost of living
- Research facilities
- Ranking and Reputation
- Interaction with professors
- Interaction with graduate students
- Interaction with staff
- Campus Visit
- Graduate School website
- Email or postal mail received

Graph showing the importance of various factors in the admitted student survey.
WORD CLOUD REPRESENTATION

Research facilities
Interaction with professors
Ranking and Reputation
Department website
Financial support/funding offered
Campus Visit
Interaction with staff
Campus Location
Interaction with graduate students
Graduate School website
Local community’s cost of living
Email or postal mail received
BY COLLEGE, COLLEGE OF AGRICULTURE FROM ADMITTED STUDENT SURVEY

Email or postal mail received

Research facilities

Ranking and Reputation

Interaction with graduate students

Campus Location

Interaction with staff

Financial support/funding offered

Interaction with professors

Campus Visit

Local community's cost of living

Department website

Graduate School website
### Other Universities That Admitted the Students

#### Admitted Student Survey

<table>
<thead>
<tr>
<th>University</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count of Arizona State University</td>
<td>81.0</td>
</tr>
<tr>
<td>California Institute of Technology</td>
<td>12.0</td>
</tr>
<tr>
<td>Carnegie Mellon University</td>
<td>72.0</td>
</tr>
<tr>
<td>Columbia University</td>
<td>58.0</td>
</tr>
<tr>
<td>Duke University</td>
<td>36.0</td>
</tr>
<tr>
<td>Georgia Institute of Technology</td>
<td>126.0</td>
</tr>
<tr>
<td>Indiana University</td>
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<td>Michigan State University</td>
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<tr>
<td>Northwestern University</td>
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</table>

**Admissions Options**

- **Admitted College**
  - (All)

- **Admitted Major**
  - (All)

- **Instructional Delivery**
  - (All)

- **Degree Objective**
  - (All)

- **Factors for Choosing Schools to Apply for Admission**
  - (All)
REASON FOR SELECTING ANOTHER SCHOOL
ADMITTED STUDENT SURVEY

Why Other School Selected

- Accepted offer of employment
- Attending an online degree program
- Attending another school with a better reputation or ranking
- Better research/program fit elsewhere
- Did not like Purdue's location
- Insufficient financial support/funding

Number of Records
STUDENT RECORDS DASHBOARDS
MAINLY USED FOR PROGRAM REVIEWS

❖ Official Enrollment
  ❖ Basic and comparative enrollment
  ❖ Geographic demographics

❖ Student Employment
  ❖ Average salaries
  ❖ Types of employment

❖ Student Outcome
  ❖ Degrees awarded
  ❖ Retention and Time to Degree

❖ Exit Survey
  ❖ Student satisfaction
  ❖ Employment post-degree
TYPES OF EMPLOYMENT

Graduate Staff Head Count

<table>
<thead>
<tr>
<th>Year</th>
<th>RA</th>
<th>Fellow admin as..</th>
<th>TA</th>
<th>Fellowship</th>
<th>GA</th>
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</table>

RA: Research Assistant
TA: Teaching Assistant
GA: Graduate Assistant
TRENDS IN SALARIES FOR GRADS

Graduate Staff Average Annual Salary

Fellows
RAs
TAs
GA
Visualizing Completion Data
Consider PhD completion as an example

1) Conventional Cohort Representation

2) Alternative Annual Completion Representation
National PhD completion rate 57% (University X Cohort Data)

Cohort starting in 2007
University X
Class starting 2007
For a given year, students will either
a) complete
b) leave without degree
c) leave prematurely with MS
d) continue
TIME TO DEGREE BY YEARS

Time to degree by degree type

Avg. TTD


2.24 2.12 2.09 2.04 2.05 2.17
USING DIGITAL CLICKERS

❖ Provides real-time graphic visualization
USING DIGITAL CLICKERS

❖ Provides real-time graphic visualization
Examples:

1) Using clickers at conferences and in meetings

2) Using clickers to facilitate discussion
Are you interested now in having your Master’s program accredited by ABET?

A. Yes
B. Possibly
C. Very unlikely
D. No way
E. N/A
ECE Department Heads Association Annual Conference

Are you interested **now** in having your Master’s program accredited by ABET?

A. Yes
B. Possibly
C. Very unlikely
D. No way
E. N/A
Examples:

1) Using clickers at conferences

2) Using clickers to facilitate discussion
USING DATA ANALYTICS TO HELP STUDENTS
WHAT IS SIGNALS

• Signals is an interactive student feedback device that allows us to identify and intervene when students are at risk of performing poorly in a course.

• Instructors can utilize signals to send personalized emails to students to inform them of poor performance, direct them to campus resources for assistance, and can even remind them of office hours.

• Signals is convenient for faculty and students, it can even be accessed via mobile device.
USING DATA TO HELP STUDENTS

• Mining non-traditional data sources
• Employing statistical analyses and machine learning
• Presenting patterns and correlations visually to students
• Suggesting interventions
• Students have mobile access increasing the likeliness of their using signals.
• Information is readily available for consultation with instructor.
• Mining non-traditional data sources
• Employing statistical analyses and machine learning
• Presenting patterns and correlations visually to students
• Suggesting interventions
THANK YOU!

Questions and Comments