Analytics for Students’ Success

INFORMATION

An update on the development of predictive analytics for promoting students’ success and retention. Our general strategy and a specific application at UW-Tacoma will be presented.

BACKGROUND

Predictive analytics involves the use of data to predict future outcomes. This area of data science has found wide application in a variety of fields from health care to credit ratings. In contrast, applications in higher education are just beginning to emerge. The UW has been developing a predictive analytics platform in collaboration with Civitas, a vendor who is an emerging leader in the area of predictive analytics for student success and retention. This presentation will provide an overall description of our efforts to date.

Employing data from the student database and our learning management system (Canvas), we are now using predictive analytics to learn more about issues that impact student retention. As a specific example, UW-Tacoma has found that the number of days a student enrolls before the start of a term is a strong indicator of persistence, with students registering right before classes start being at higher risk for leaving. Based on this finding, UW-Tacoma is now employing “nudges” through text messaging targeted at students who have not registered and encouraging them to register. As a result, they have seen a substantial increase in enrollment. This represents the first “insights into action” program to emerge from predictive analytics, with many more to follow.

Attachments
Analytics for Students’ Success
Presenter’s Biographical Information
Analytics for Students’ Success

Philip J. Reid
Vice Provost, Academic & Student Affairs
Deputy CIO
Professor of Chemistry
UW-Seattle

Melissa Lavitt
Executive Vice Chancellor, Academic Affairs
UW-Tacoma
• Predictive Analytics: “Data mining” to develop predictions of outcomes.

• Applications in higher education are emerging. Employed extensively in other areas (for example, health care, credit ratings, etc.).

• Can we employ predictive analytics to promote student success and retention?
DATA FROM IT SERVICES

Learning Management Systems (LMS) provide a rich source of data regarding student engagement.
PREDICTIVE ANALYTICS: CIVITAS

Student Database

CIVITAS

DATA PROCESSING
DATA VALIDATION
PREDICTIVE MODELING
APPLICATIONS

ILLUME
Institutional Leadership & Research

INSPIRE
Advisors, Students, Faculty & Advisors

UW Canvas LMS Data
INSIGHT: CHANGE IN GPA IS A STRONG INDICATOR FOR PERSISTENCE

- Seattle Campus full-time undergraduates
- Decrease in quarter GPA of 0.3 to 1.0 relative to cumulative GPA is indicative of increased risk of not persisting.
INSIGHT: CHANGE IN GPA IS A STRONGER INDICATOR FOR “HIGH GPA” STUDENTS

Finding students that you normally wouldn’t!
THE UNIVERSITY OF WASHINGTON TACOMA

- Urban-Serving
- Majority First Generation
- Majority Financially Pell-Eligible
- Majority > 21 years
- Minority Caucasian
UW-TACOMA AND STUDENT ATTRITION

EACH YEAR, UW TACOMA LOSES:

• 25-30% of First Year Students
• 10-15% of Second Year
• 3-5% of Our Near-Completers

80% of these losses are students in good academic standing
### Autumn 2015 UW Tacoma Census Day Student Profile

For autumn 2015, the UW Tacoma welcomed 4,629 students to campus. This count reflects all students served, and includes those students having Seattle or Bothell majors, as well as students auditing a UW Tacoma course. However, this report is based on autumn census day tallies of students having a UW Tacoma major and enrolled in credit bearing courses for the 2015 autumn quarter (n=4600).

![Student Profile Diagram]

#### All Students by Class Standing

<table>
<thead>
<tr>
<th></th>
<th>First-Year</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Post-Baccalaureate</th>
<th>Graduate</th>
<th>Non-Matriculated</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female</strong></td>
<td>235</td>
<td>56.4%</td>
<td>321</td>
<td>30%</td>
<td>743</td>
<td>51.7%</td>
<td>510</td>
<td>26</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>220</td>
<td>43.6%</td>
<td>310</td>
<td>48.1%</td>
<td>699</td>
<td>48.3%</td>
<td>501</td>
<td>16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>506</td>
<td>100.0%</td>
<td>631</td>
<td>100.0%</td>
<td>1442</td>
<td>100.0%</td>
<td>1011</td>
<td>40</td>
</tr>
<tr>
<td><strong>Asian American</strong></td>
<td>74</td>
<td>14.2%</td>
<td>72</td>
<td>11.4%</td>
<td>129</td>
<td>0.0%</td>
<td>121</td>
<td>6</td>
</tr>
<tr>
<td><strong>American Indian</strong></td>
<td>8</td>
<td>1.6%</td>
<td>10</td>
<td>1.6%</td>
<td>36</td>
<td>2.6%</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td><strong>Asian American</strong></td>
<td>131</td>
<td>25.9%</td>
<td>151</td>
<td>23.9%</td>
<td>294</td>
<td>23.3%</td>
<td>225</td>
<td>11</td>
</tr>
<tr>
<td><strong>Caucasian</strong></td>
<td>161</td>
<td>31.8%</td>
<td>245</td>
<td>38.8%</td>
<td>667</td>
<td>48.1%</td>
<td>575</td>
<td>1</td>
</tr>
<tr>
<td><strong>Hawaiian/Pacific Islander</strong></td>
<td>19</td>
<td>3.8%</td>
<td>19</td>
<td>3.0%</td>
<td>33</td>
<td>2.3%</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td><strong>Hispanic or Latino</strong></td>
<td>99</td>
<td>19.4%</td>
<td>64</td>
<td>13.3%</td>
<td>103</td>
<td>10.6%</td>
<td>114</td>
<td>4</td>
</tr>
<tr>
<td><strong>International</strong></td>
<td>6</td>
<td>1.2%</td>
<td>35</td>
<td>5.6%</td>
<td>94</td>
<td>6.0%</td>
<td>65</td>
<td>3</td>
</tr>
<tr>
<td><strong>Not Indicated</strong></td>
<td>7</td>
<td>1.4%</td>
<td>15</td>
<td>2.4%</td>
<td>45</td>
<td>2.9%</td>
<td>76</td>
<td>3</td>
</tr>
<tr>
<td><strong>20 and younger</strong></td>
<td>408</td>
<td>82.2%</td>
<td>207</td>
<td>62.9%</td>
<td>355</td>
<td>24.6%</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td><strong>21 to 34</strong></td>
<td>55</td>
<td>8.9%</td>
<td>21</td>
<td>33.4%</td>
<td>968</td>
<td>62.6%</td>
<td>300</td>
<td>0</td>
</tr>
<tr>
<td><strong>35 to 44</strong></td>
<td>2</td>
<td>0.4%</td>
<td>13</td>
<td>2.1%</td>
<td>92</td>
<td>6.4%</td>
<td>87</td>
<td>7</td>
</tr>
<tr>
<td><strong>45 to 54</strong></td>
<td>0</td>
<td>0.0%</td>
<td>10</td>
<td>1.6%</td>
<td>27</td>
<td>1.9%</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td><strong>55 to 64</strong></td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>2</td>
<td>0.1%</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td><strong>65 and older</strong></td>
<td>0</td>
<td>0.0%</td>
<td>0</td>
<td>0.0%</td>
<td>1</td>
<td>0.1%</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

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**From Reporting...**
To Discovery and Dynamic Data: Who, When...
AND Why
Digging Deeper with Paired Predictors:
Even our highest GPA students will struggle if they register <4 days before quarter start:
MOVING DYNAMIC DATA INTO ACTION

The Mobile Nudge: Sending all lower division students *still not registered* cell phone nudges each week Aug 15-Sep 22.

36% came back to register > 1 week before classes started
Presenter’s Biographical Information

Dr. Melissa Lavitt, Executive Vice Chancellor for Academic Affairs

Melissa Lavitt began serving as UW Tacoma’s Executive Vice Chancellor for Academic Affairs in January, 2016. As chief academic officer, she is responsible for leading and overseeing the academic enterprise on campus. She brings over 15 years of leadership experience to this position, primarily from her experiences on urban-serving campuses.

Before coming to UW Tacoma she served as the Senior Associate Vice Chancellor for Academic Affairs at Indiana University Purdue University Indianapolis (IUPUI) and as dean of the College of Social Sciences & Public Affairs at Boise State University.

Dr. Lavitt received her baccalaureate degree with honors from the University of Chicago, and her Master of Social Work and Ph.D. in social work from Tulane University. She began her academic career at Arizona State University, where she earned tenure in Social Work. Her research interests include public scholarship, and civically engaged research and teaching in urban settings.