Ramapo College and Predictive Modeling

- Founded in 1969
- Approximately 6000 students
  - ~5800 undergraduate students
  - ~ 200 graduate students
- 51% of students live on campus
- Designated by the State as “New Jersey’s Public Liberal Arts College”
- Fall 2016 First-Year Class:
  - 944 students
  - Average SAT of 1136
  - 37% of class met institutionally approved diversity metrics
Principle

STRUCTURE SHOULD ALWAYS FOLLOW STRATEGY, NOT VICE VERSA.

How administrators interpret change initiatives

We administrators in Student Affairs or Enrollment Management or insert any office know exactly what needs to get done to improve student success.

If only those faculty and academic affairs would support our initiatives we could make it happen.
How faculty interpret change initiatives

Why are we as faculty always being told what to do?
- We need more data
- We need a committee

Those administrators always want to tell us what changes we need to make to support their initiatives

Adopt the In-house Consultant Model (IHC)

5-step process

- Establish a Vision
- Align Systems
- Create and Execute Plans
- Integrate the Vision
- Review the Process

Vision: An Analytic Strategy

Student Characteristics (e.g., EFC, ETHNICITY, GPA, IN-STATE, MAJOR, SAT, RESIDENT)

Given the data we have on student retention, utilize that data to determine risk levels for all incoming first year students.

Build the System:

Need Data

+ Need Faculty Buy-In

Faculty Fellow for Enrollment Data and Analytics
Faculty Fellow for Enrollment Data and Analytics

- Leverage Faculty Expertise on Campus
- Hired Political Science Professor with Econometrics expertise
  - Already involved in SEM planning committees
  - Champion of Student Success
  - Faculty Respect and Support.

Contrasts of Retention Rates
(over last five years)

<table>
<thead>
<tr>
<th></th>
<th>SAT Math &amp; Verbal (and ACT equivalents)</th>
<th>High School GPA</th>
<th>Unmet Financial Need</th>
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<tbody>
<tr>
<td>Not Retained</td>
<td>1071</td>
<td>3.07</td>
<td>$6,379</td>
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<tr>
<td>Retained</td>
<td>1105</td>
<td>3.28</td>
<td>$6,917</td>
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Contrasts of Retention Rates

<table>
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<th>Not EOF</th>
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</thead>
<tbody>
<tr>
<td>86</td>
<td>87.4</td>
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<tr>
<td>NJ Resident</td>
<td>Out of State</td>
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<td>87.7</td>
<td>75.5</td>
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<tr>
<td>Declared Major</td>
<td>Undecided</td>
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<tr>
<td>88</td>
<td>84.3</td>
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<tr>
<td>Resident</td>
<td>Commuter</td>
</tr>
<tr>
<td>88</td>
<td>84.3</td>
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</tbody>
</table>

Descriptive
What happened?

Prediction
What will happen?

Post-diction
Prediction after the fact.

Now, what?

Establish a Vision  Align Systems  Create and Execute Plans  Integrate the Vision  Review the Process
4: Where data points meet.

Moving Forward

- All Incoming Students Assigned a Predictive Score at beginning of Fall semester
- Score not shared directly with Student Success advisors, but instead turned into Green, Yellow and Red Signal
  - Tailored Student Success Plans based on signal
- Will Re-Run scores at end of fall semester, because we know from models fall GPA is single best predictor
  - Again signal will be updated in Starfish
Success Paths in Fall 2016

Green: “To-Do” Items:
1. Access and Explore Starfish
2. October Advisement Appointments

Yellow: 1 & 2 PLUS
3. Recommended visit to Center for Reading and Writing

Red: 1, 2, 3 PLUS
4. Explore a Campus Resource

Fall 2016 Outcomes (Snapshot)

Fall 2016 Overall
Overall Students that had their “October Appointment with an Advisor” To Do item cleared: 743/944 = 78.1%

By Color
Green: 576/752 = 76.6%
Yellow: 163/187 = 87.17%
Red: 4/5 = 80%

Yellow/Red Appointments: 167/192 = 86.98%
Success Paths in Spring 2017
Re-Run data and scores b/c of predictive power of Fall GPA

Green: “To-Do” Items:
1. March appointment with Academic Advisor

Yellow/Red: 1 PLUS:
2. Completion of LASSi
3. Center for Reading and Writing Visit
4. Explore Campus Resource

Next Steps:

• Analyzing data for all success path to-do items and impact on retention

• Current model is built only on demographic data
  • This year adding behavioral and attitudinal questions to inform start with descriptive data (again)
  • Moving to post-diction then ultimately prediction