## Two-semester Return Goal Setting

NATHAN DICKMEYER

## JENNY ZHU

INSTITUTIONAL RESEARCH \& ASSESSMENT
JUNE 10, 2016

## Why are we doing this?

$>$ We have dozens of "retention initiatives" and even more "problematic situations" all of which demand assessment
$>$ Did this intervention work?
$>$ Does this situation hurt retention?
>And... we didn't want to keep doing one-up research projects, selecting control groups, comparing outcomes for each one!

## Predicting return (or graduation) two semesters out

> Stepwise Logistic Regression-A method of combining information on a student to calculate a probability of return.
$>$ Goal: Predict the return (or graduation) of Fall 2014 degree students, based on:
> Fall 2012 to Fall 2013 actual
$>$ Spring 2013 to Spring 2014 actual
> Fall 2013 to Fall 2014 actual


## Results of fall 2014 predictions

>15,935 Fall 2014 Degree Students
>Predicted probability of return/graduation: 61.6\%
$>$ Actual return/graduation rate: 64.3\% (accuracy or success?)
$>100$ students with highest probability of return: $85 \%$ returned
$>100$ students with lowest probability of return: $\mathbf{2 8 \%}$ returned

## Other ideas?

>Other variables?
>Other approaches?
>Obvious caution flags?

## Predicted vs. actual by group code

$>$ How did interventions do?
>How did other groups do?
$>$ (Blue is predicted, red is actual)

Interventions (CUNYfirst "Group" flags)
$30 \% \quad 40 \% \quad 50 \% \quad 60 \% \quad 70 \% \quad 80 \% \quad 90 \% \quad 100 \%$

FALL 2014 DEGREE STUDENTS N=15935 (SIG)


## Ideas and questions from you

>(BTW: CUNYfirst group codes not always verified or updated.)
$>$ (Still can't tell whether a good result comes from the intervention or the selection.)
$>$ ?

## Predicted vs. actual by team

$>$ Some teams did better than predicted
>Some teams did not
$>$ Some teams did not beat predicted by a significant amount

Business \& Technology


## Councils

$30 \% \quad 40 \% \quad 50 \% \quad 60 \% \quad 70 \% \quad 80 \% \quad 90 \% \quad 100 \%$

| ALL FALL 2014 DEGREE STUDENTS N=15935 | 61.6\% |
| :---: | :---: |
|  | 64.3\% |
|  |  |
| BUSINESS AND TECHNOLOGY N=3038 (SIG) | 64.4\% |
|  | 68.9\% |
| ELA \& EDUCATION N=847 (SIG) | 63.1\% |
|  | 71.7\% |
| HEALTH SCIENCES N=3111 (SIG) | 58.5\% |
|  | 61.8\% |
|  |  |
| HUMANITIES N=1459 (NOT SIG) | 61.9\% |
|  | 62.6\% |
| LIBERAL ARTS N=2360 (SIG) | 58.8\% |
|  | 60.3\% |
|  |  |
| SOCIAL SCIENCE $\mathbf{N = 2 0 5 2}$ (SIG) | 63.3\% |
|  | 65.8\% |
|  |  |
| STEM N=3065 (NOT SIG) | 62.4\% |
|  | 62.9\% |

## So what?

$>$ And what, may I ask, is significance? (Hint: these are not samples.)
$>$ What interventions do you have on your campus?
$>$ What would happen if you showed that an intervention did not have a significant impact on retention?

## Fall 2015 Students

$>$ Goals by group
$>$ Goals by team
$>$ (Goals are predicted return rate plus factor needed for statistical significance)
$>$ New prediction model, based on last five semesters of characteristics/factors and two-semester return/graduation

|  | Fall 2014 Factors | Fall 2015 Factors |
| :---: | :---: | :---: |
| Factors | Percentage Point Impact (3 semesters data) | Percentage Point Impact (5 semesters data) |
| Starting point | -28.13 | -6.49 |
| Each year of age | 0.646 | 0 |
| Each credit earned | 1.02 | 0.91 |
| Each point of cumulative GPA | 20.22 | 22.26 |
| Each one percent of attempted equated credits earned | 0 | 0.1695 |
| Each one percent of WU grades out of total grades received | -1.681 | -1.28 |
| Being female | 6.57 | 8.58 |
| Not completing developmental math requirement | -16.81 | -7.42 |
| Being full-time | 42.42 | 36.33 |
| Registering early | 11.37 | 12.72 |
| Being a continuing student | -10.66 | -10.73 |
| Being a new student | 49.42 | 36.68 |
| Being a new transfer student | 24.02 | 31.37 |
| Being an AA degree student | 2.72 | 3.12 |
| Being an AS degree student | 13.79 | 12.19 |
| Being an AAS degree student | -6.04 | -3.41 |
| Not receiving financial aid | 0 | -3.25 |
| Not being on a student visa | -18.87 | -23.24 |


|  | Fall 2015 <br> Enrollment <br> (Group code <br> active after <br> $5 / 1 / 15)$ | Expected 2- <br> Semester <br> Return/Grad <br> Rate | Return/Grad <br> \# Goal to <br> Beat (inc.stat <br> sig.) |
| ---: | ---: | ---: | ---: |
| Program | 15,504 | $63.3 \%$ | 9,853 |
| All Fall 2015 Degree Students | 420 | $70.7 \%$ | 301 |
| ASAP | 515 | $66.4 \%$ | 347 |
| COLLEGE DISCOVERY | 90 | $56.9 \%$ | 53 |
| AKE FIRST IN THE WORLD GRANT | 139 | $56.6 \%$ | 81 |
| ACE TO CREDIT | 194 | $77.2 \%$ | 152 |
| ACE ROBIN HOOD FOUNDATION GRANT | 18 | $55.4 \%$ | 11 |

## Questions for YOU!

>Can you spot the suspicious variables?
$\left.\begin{array}{|r|r|r|r|}\hline & \text { Fall 2015 } \\ \text { Enrollment }\end{array} \begin{array}{c}\text { Expected 2- } \\ \text { Semester } \\ \text { Return/Grad } \\ \text { Rate }\end{array} \begin{array}{c}\text { Return/Grad } \\ \text { \# Goal to } \\ \text { Beat (inc. stat } \\ \text { sig.) }\end{array}\right]$

| Councils | Fall 2015 <br> Enrollment | Reter 2- <br> Semester <br> Return/Grad <br> Rate | Return/Grad <br> \# Goal to <br> Beat (inc. stat <br> sig.) |
| ---: | ---: | ---: | ---: |
| All Fall 2015 Degree Students | 15,504 | $63.3 \%$ | 9,853 |
| Business and Technology | 2,893 | $65.7 \%$ | 1,917 |
| ELA \& Education | 824 | $65.5 \%$ | 548 |
| Health Sciences | 3,214 | $60.8 \%$ | 1,971 |
| Humanities | 1,381 | $62.7 \%$ | 878 |
| Liberal Arts | 1,921 | $61.3 \%$ | 1,191 |
| Social Science | 1,916 | $64.9 \%$ | 1,256 |
| STEM | 3,315 | $63.7 \%$ | 2,128 |

# How about looking at participation data? 

>Ask...
$>$ Does visiting an office improve retention above expectations?
$>$ Does visiting an office more often improve retention above expectations?
>Are some offices better ones to visit?

## Not visiting any office is very, very bad!

## Actual vs. Predicted Fall 15 Return/Grad for Fall 14 Students by Number of SEMS Visits



## Questions for YOU

$>$ Does this look like an independent variable?
$>$ (Maybe for continuing students...)
$>$ (Doesn't help much for freshmen...)

## Visiting Single Stop is beneficial!

|  | Actual vs. Predicted Fall 15 Return/Grad for Fall 14 Students by |
| :--- | :--- | :--- |
| Number of SEMS Visits to Single Stop |  |

## Being is almost as good as visiting International Students' Office

Guardia

100\%
90\%
80\%
70\%
60\%
50\%
40\%
30\%
20\%
10\%
$0 \%$

Number of SEMS Visits to International Students
Actual vs. Predicted Fall 15 Return/Grad for Fall 14 Students by
—Actual F14-F15 Return/Grad Rate

| $78 \%$ | $76 \%$ | $81 \%$ | $80 \%$ | $83 \%$ | $80 \%$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $69 \%$ | $77 \%$ | $78 \%$ | $76 \%$ | $81 \%$ | $77 \%$ |

Number of Students Visiting


3

61

4

163
47

5

100\%
90\%
80\%
70\%
60\%
50\%
$40 \% \quad 3,865$
30\%
20\%
10\%
0\%

# Seeing an advisor once is the norm. More than once helps (except not 9 times). 

Actual vs. Predicted Fall 15 Return/Grad for Fall 14 Students by

## Number of SEMS Visits to Advisement Triage Team

- 


——Predicted Return Rate

Number of Students Visiting
1,530

| 805 | 413 | 190 | 106 | 45 | 22 | 41 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4 | 5 | 6 | 7 | 8 | 9 | $10+$ |

Number of SEMS Visits AY 14-15

# What about seeing a faculty member in a department? 

$>$ Compared to seeing no one
> Compared to not seeing a faculty member, but going to B-100 at least once
$>$ By the number of times visiting the department (can include students who were not majors in Fall 2014)

## Seeing an advisor is good; Seeing a faculty member is better!

## LaGuardia

 mmunity College

## Drop-outs don't do optional!

>More questions, ideas!
$>$ ndickmeyer@lagcc.cuny.edu
$>$ jzhu@lagcc.cuny.edu
>http://www.laguardia.edu/IR/IR-facts/

