Two-semester Return Goal Setting

NATHAN DICKMEYER
JENNY ZHU
INSTITUTIONAL RESEARCH & ASSESSMENT
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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

Factors affecting probability of return/grad Fall 2014 to Fall 2015 (Based on actual data from Fall 2012, Spring 2013 and Fall 2013)	C	Percentage Point Impact	Sample Student Joe	Joe's Prediction
Starting point		-28.13		-28.13
Each year of age		0.646	20	12.92
Each credit earned		1.02	12	12.24
Each point of cumulative GPA		20.22	2	40.44
Each one percent of WU grades out of total grades received		-1.147	0	0
Being female		6.57	0	0
Not completing developmental math requirement		-16.81	0	0
Being full-time		42.42	1	42.42
Registering early		11.37	0	0
Being a continuing student		-10.66	1	-10.66
Being a new student*		49.42	0	0
Being a new transfer student		24.02	0	0
Being an AA degree student		2.72	0	0
Being an AS degree student		13.79	1	13.79
Being an AAS degree student		-6.04	0	0
Not being on a student visa		-18.87	0	0
(Joe's predicted probability of returning Fall 2015)				**83.02%**

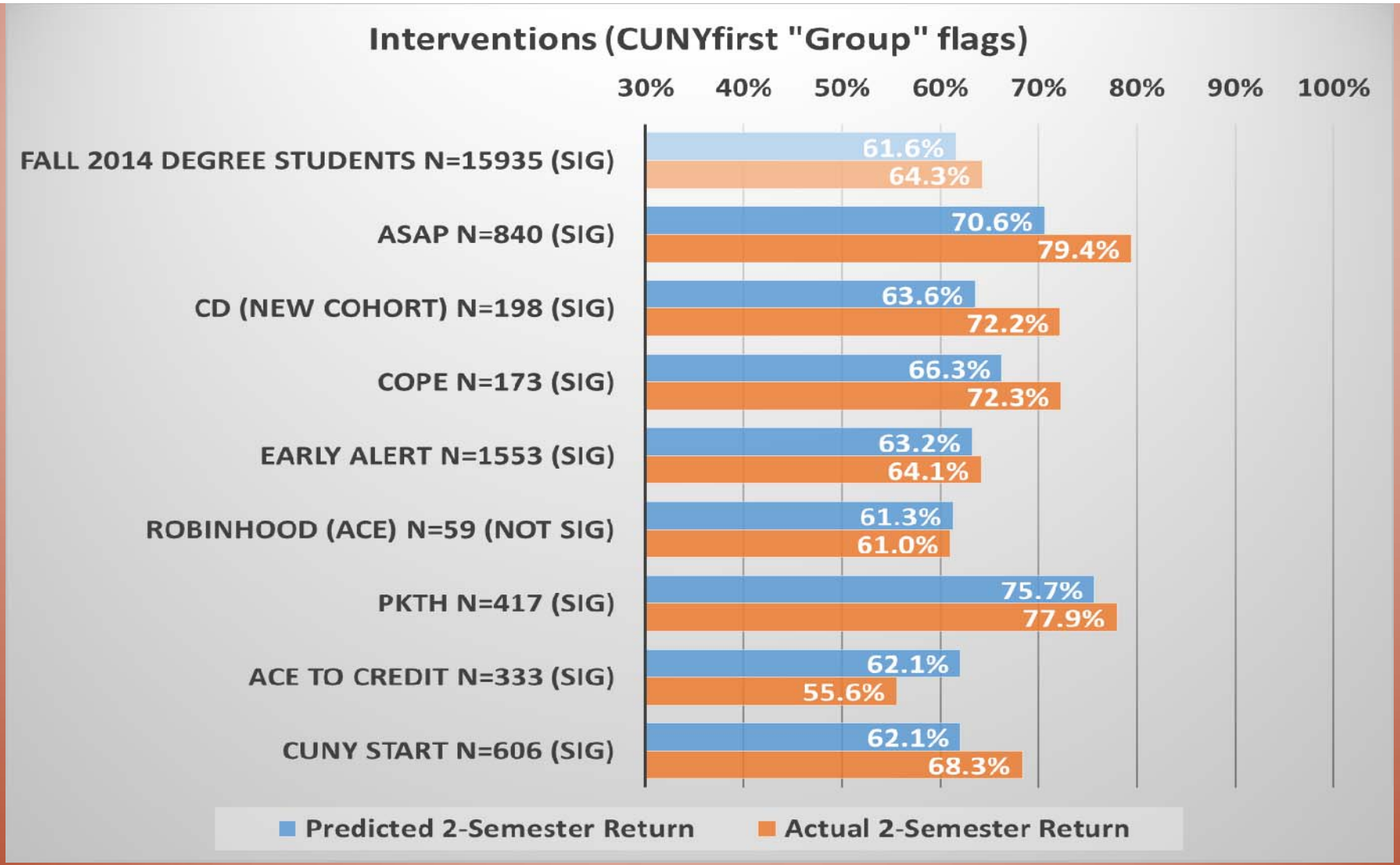
**Comparing a new student with a continuing student with a 2.00 GPA and 12 earned credits, the new student is missing 52.68 percentage points and already is behind more than 10 percentage points.*

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: 28% returned

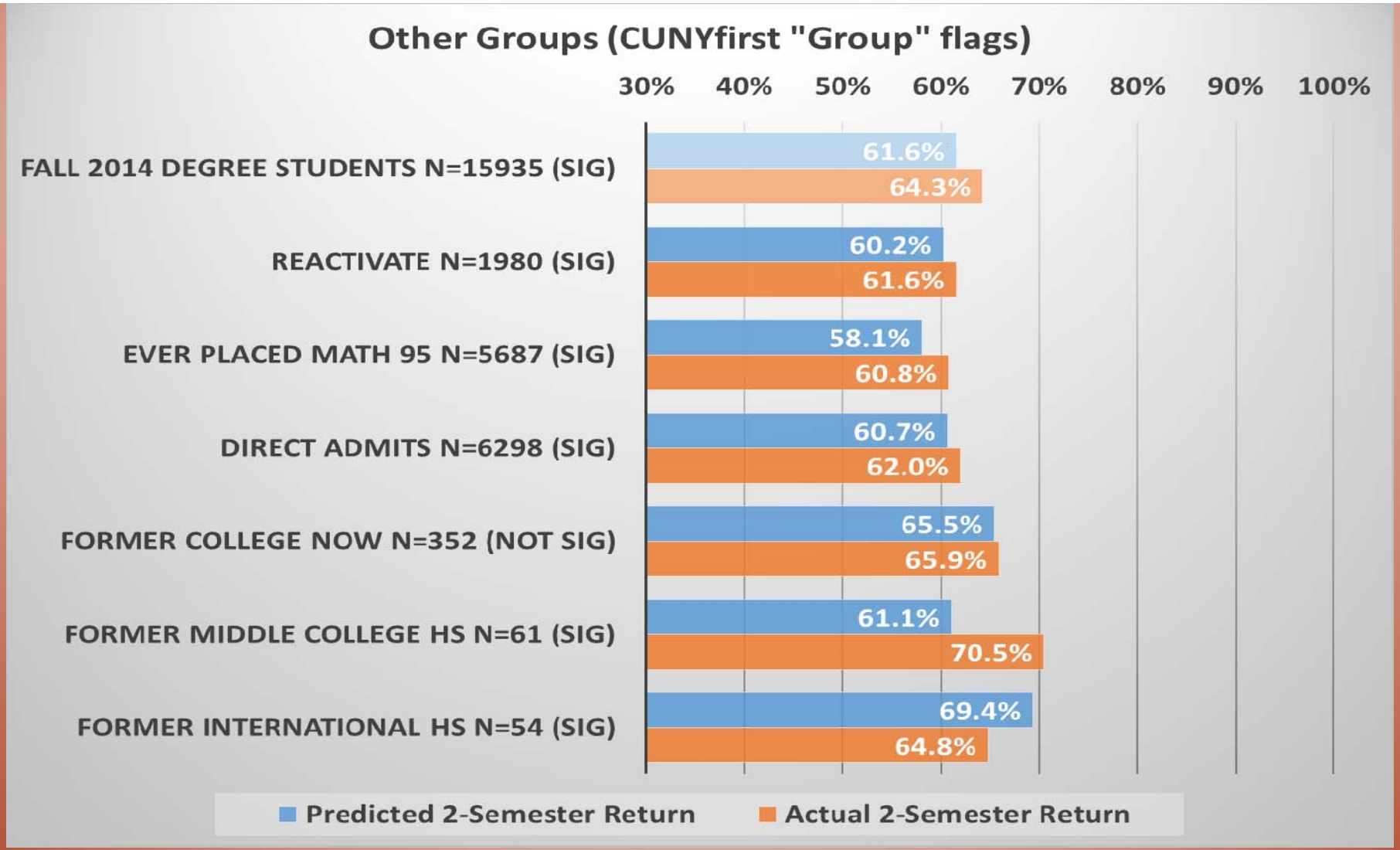
Predicted vs. actual by group code

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


Interventions (CUNYfirst "Group" flags)
30%
40%
50%
60%
70%
80%
90%
100%
FALL 2014 DEGREE STUDENTS N=15935 (SIG)
61.6%
64.3%
ASAP N=840 (SIG)
70.6%
79.4%
CD (NEW COHORT) N=198 (SIG)
63.6%
72.2%
COPE N=173 (SIG)
66.3%
72.3%
EARLY ALERT N=1553 (SIG)
63.2%
64.1%
ROBINHOOD (ACE) N=59 (NOT SIG)
61.3%
61.0%
PKTH N=417 (SIG)
75.7%
77.9%
ACE TO CREDIT N=333 (SIG)
62.1%
55.6%
CUNY START N=606 (SIG)
62.1%
68.3%
Predicted 2-Semester Return
Actual 2-Semester Return

Interventions effective?

- ASAP, College Discovery, COPE, CUNY Start are effective
- Early Alert was not effective (may have harmed students)
- PKTh did not improve an already high probability much
- ACE to Credit and Robinhood (ACE) may not have proper codes???
  - (CD based on actual list, not group codes)

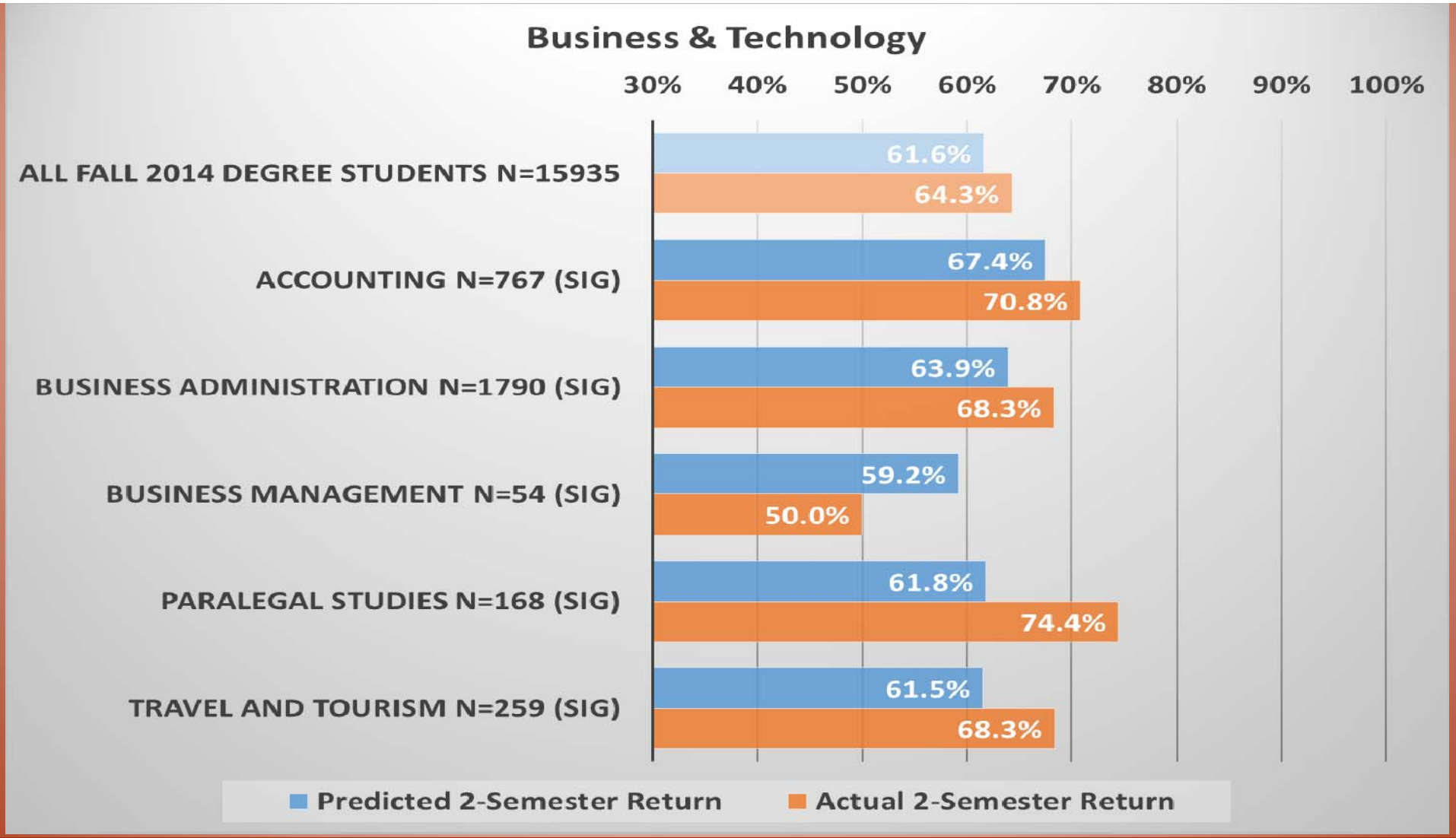

Other Groups (CUNYfirst "Group" flags)
30%
40%
50%
60%
70%
80%
90%
100%
FALL 2014 DEGREE STUDENTS N=15935 (SIG)
61.6%
64.3%
REACTIVATE N=1980 (SIG)
60.2%
61.6%
EVER PLACED MATH 95 N=5687 (SIG)
58.1%
60.8%
DIRECT ADMITS N=6298 (SIG)
60.7%
62.0%
FORMER COLLEGE NOW N=352 (NOT SIG)
65.5%
65.9%
FORMER MIDDLE COLLEGE HS N=61 (SIG)
61.1%
70.5%
FORMER INTERNATIONAL HS N=54 (SIG)
69.4%
64.8%
Predicted 2-Semester Return
Actual 2-Semester Return

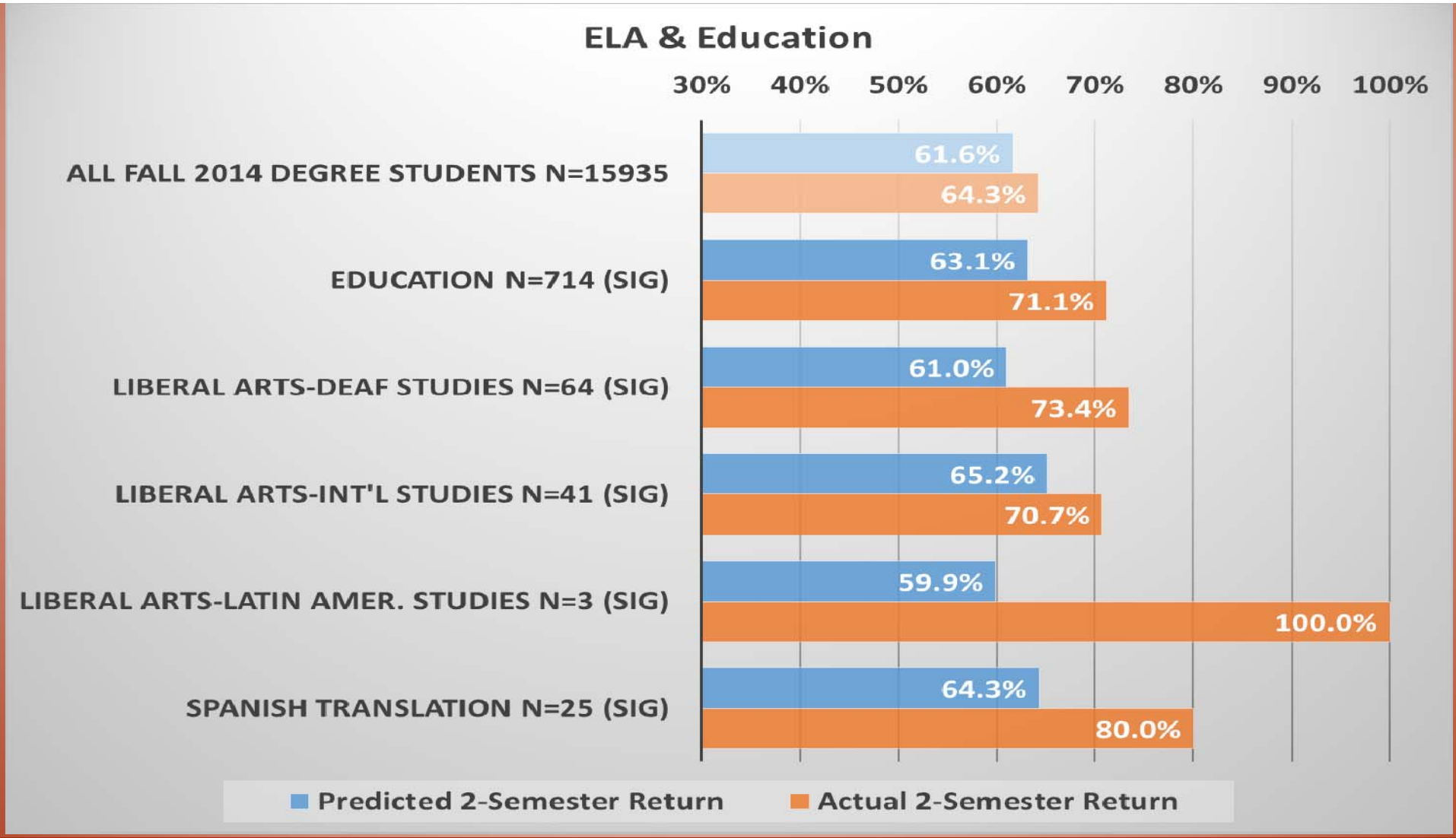
Other groups:

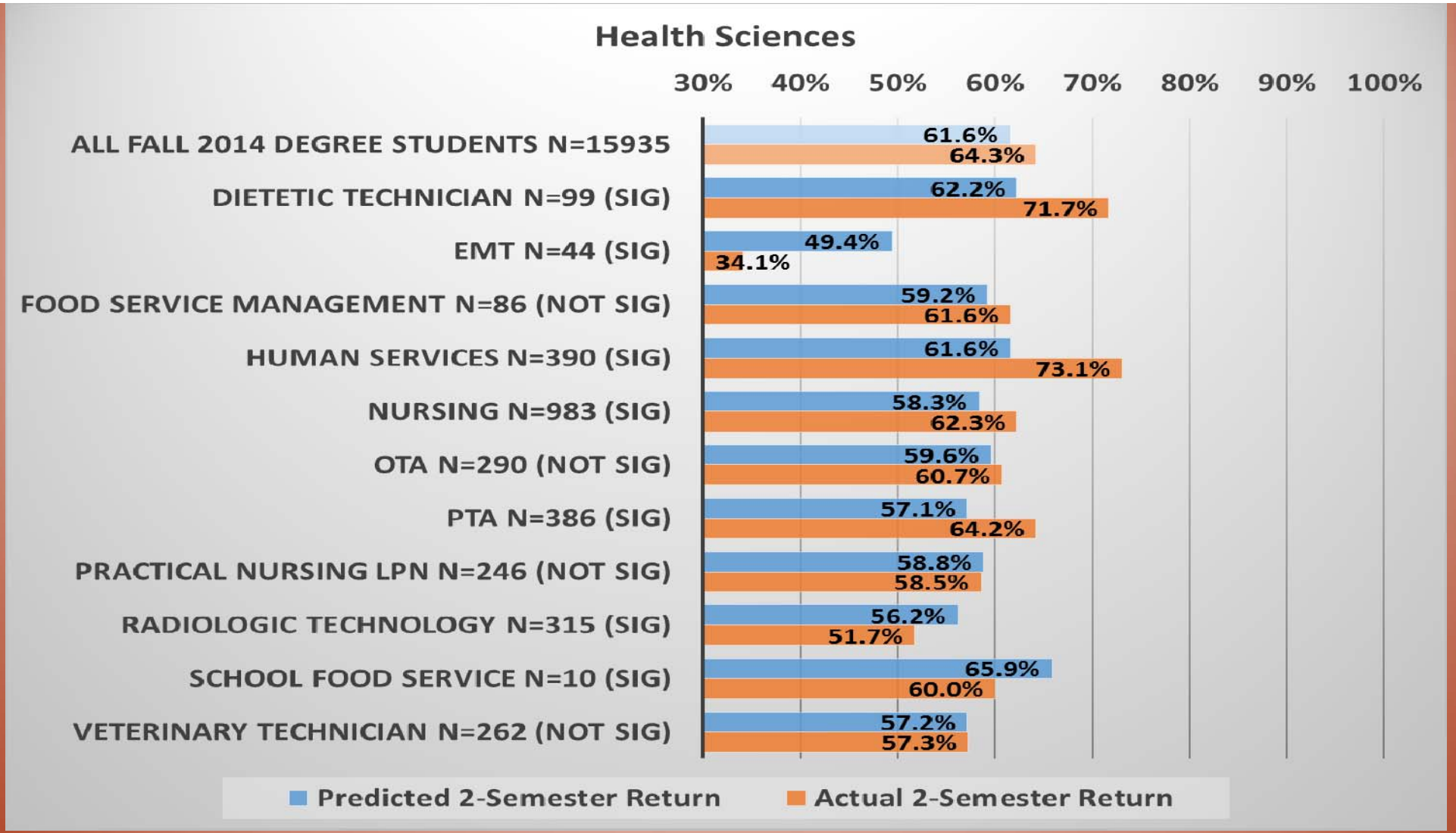
- Most show no intervention effect (as expected)
- Effect of math already considered in equation
- College Now is not an intervention
- High school results are unexpected (perhaps coding errors??)

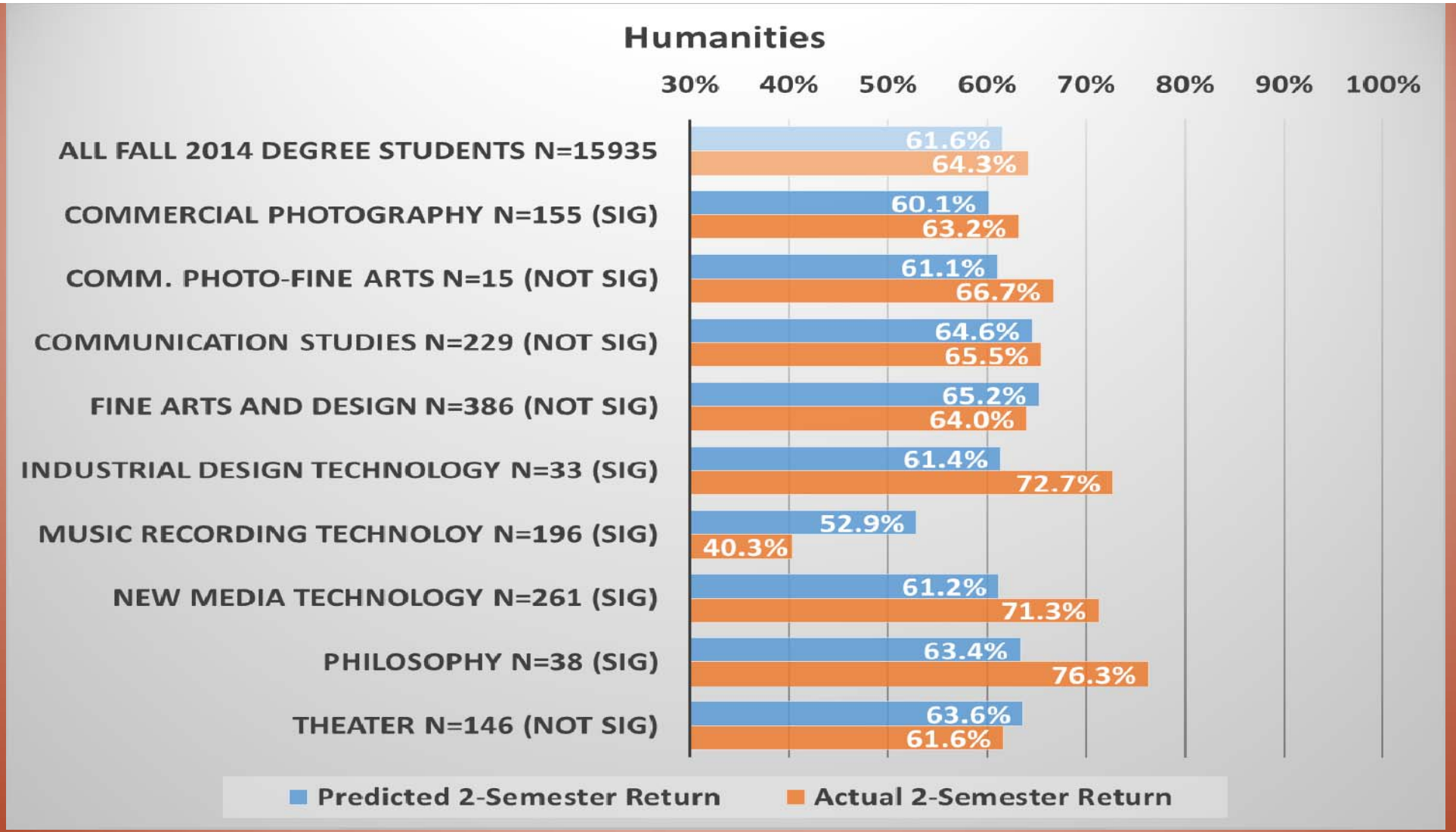
Predicted vs. actual by team

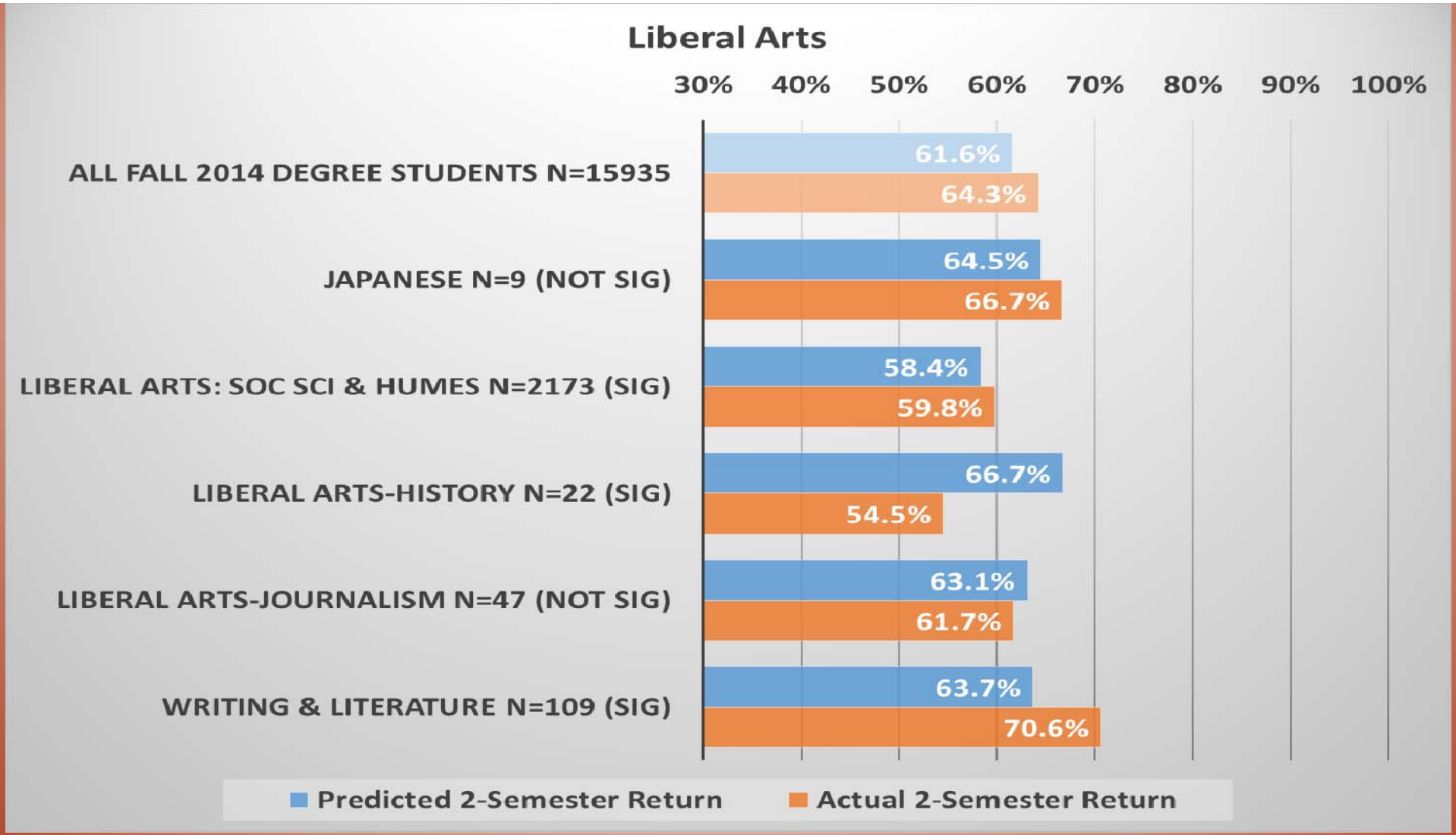
- Some teams did better than predicted
- Some teams did not
- Some teams did not beat predicted by a significant amount

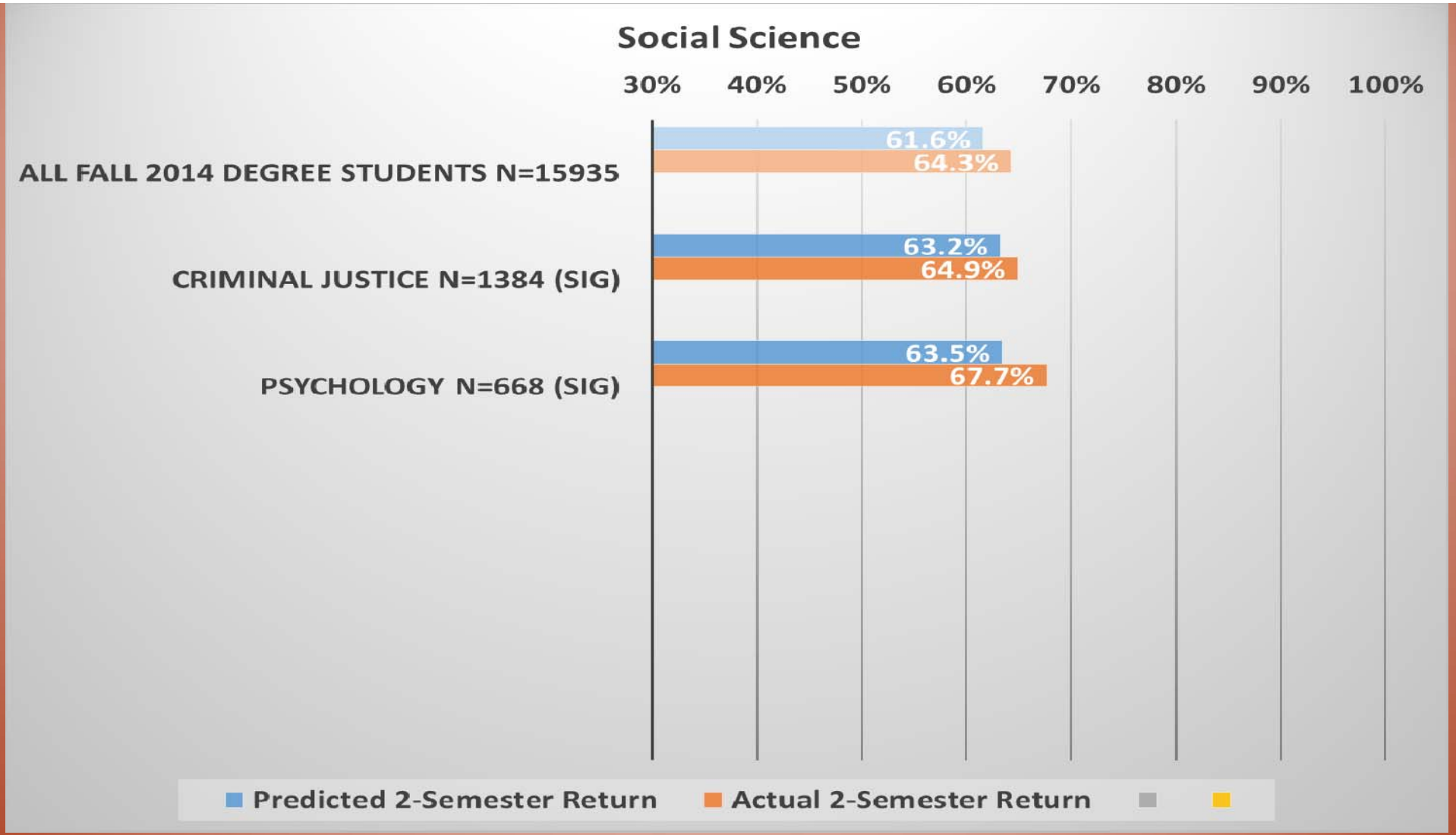

Business & Technology
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
ACCOUNTING N=767 (SIG)
67.4%
70.8%
BUSINESS ADMINISTRATION N=1790 (SIG)
63.9%
68.3%
BUSINESS MANAGEMENT N=54 (SIG)
59.2%
50.0%
PARALEGAL STUDIES N=168 (SIG)
61.8%
74.4%
TRAVEL AND TOURISM N=259 (SIG)
61.5%
68.3%
Predicted 2-Semester Return
Actual 2-Semester Return

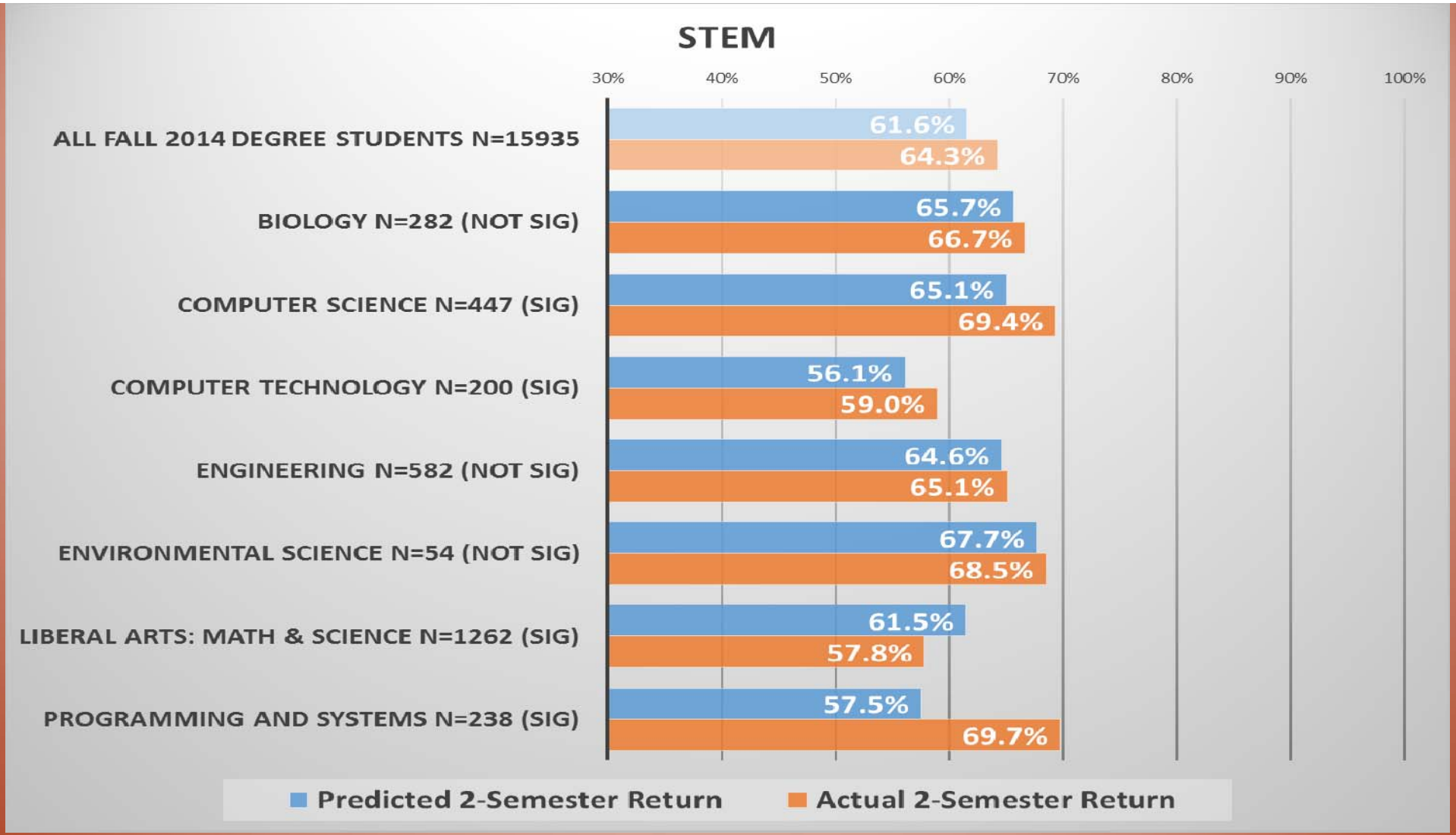

ELA & Education
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
EDUCATION N=714 (SIG)
63.1%
71.1%
LIBERAL ARTS-DEAF STUDIES N=64 (SIG)
61.0%
73.4%
LIBERAL ARTS-INT'L STUDIES N=41 (SIG)
65.2%
70.7%
LIBERAL ARTS-LATIN AMER. STUDIES N=3 (SIG)
59.9%
100.0%
SPANISH TRANSLATION N=25 (SIG)
64.3%
80.0%
Predicted 2-Semester Return
Actual 2-Semester Return

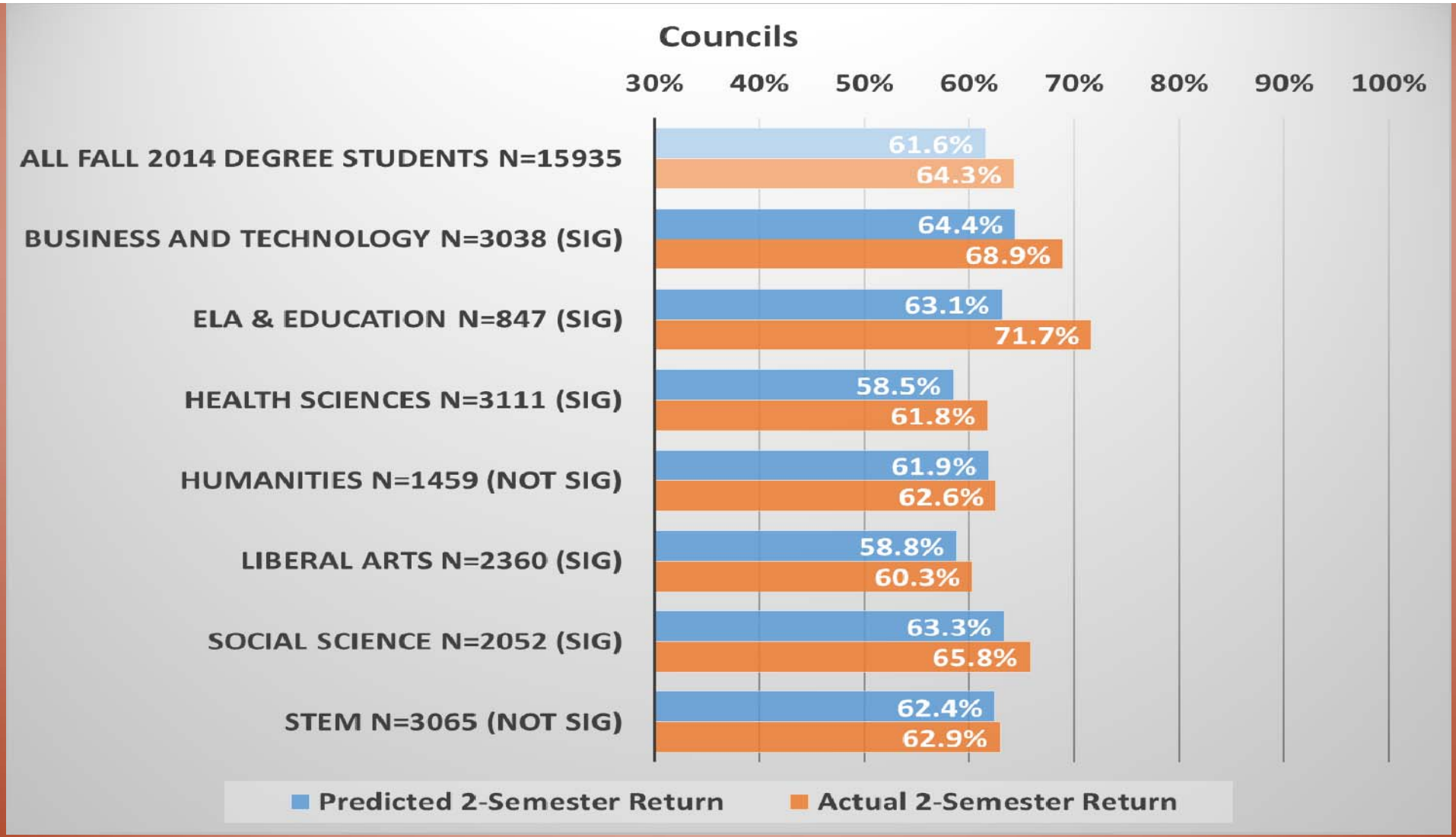

Health Sciences
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
DIETETIC TECHNICIAN N=99 (SIG)
62.2%
71.7%
EMT N=44 (SIG)
49.4%
34.1%
FOOD SERVICE MANAGEMENT N=86 (NOT SIG)
59.2%
61.6%
HUMAN SERVICES N=390 (SIG)
61.6%
73.1%
NURSING N=983 (SIG)
58.3%
62.3%
OTA N=290 (NOT SIG)
59.6%
60.7%
PTA N=386 (SIG)
57.1%
64.2%
PRACTICAL NURSING LPN N=246 (NOT SIG)
58.8%
58.5%
RADIOLOGIC TECHNOLOGY N=315 (SIG)
56.2%
51.7%
SCHOOL FOOD SERVICE N=10 (SIG)
65.9%
60.0%
VETERINARY TECHNICIAN N=262 (NOT SIG)
57.2%
57.3%
Predicted 2-Semester Return
Actual 2-Semester Return


Humanities
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
COMMERCIAL PHOTOGRAPHY N=155 (SIG)
60.1%
63.2%
COMM. PHOTO-FINE ARTS N=15 (NOT SIG)
61.1%
66.7%
COMMUNICATION STUDIES N=229 (NOT SIG)
64.6%
65.5%
FINE ARTS AND DESIGN N=386 (NOT SIG)
65.2%
64.0%
INDUSTRIAL DESIGN TECHNOLOGY N=33 (SIG)
61.4%
72.7%
MUSIC RECORDING TECHNOLOY N=196 (SIG)
52.9%
40.3%
NEW MEDIA TECHNOLOGY N=261 (SIG)
61.2%
71.3%
PHILOSOPHY N=38 (SIG)
63.4%
76.3%
THEATER N=146 (NOT SIG)
63.6%
61.6%
Predicted 2-Semester Return
Actual 2-Semester Return


Liberal Arts
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
JAPANESE N=9 (NOT SIG)
64.5%
66.7%
LIBERAL ARTS: SOC SCI & HUMES N=2173 (SIG)
58.4%
59.8%
LIBERAL ARTS-HISTORY N=22 (SIG)
66.7%
54.5%
LIBERAL ARTS-JOURNALISM N=47 (NOT SIG)
63.1%
61.7%
WRITING & LITERATURE N=109 (SIG)
63.7%
70.6%
Predicted 2-Semester Return
Actual 2-Semester Return


Social Science
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
CRIMINAL JUSTICE N=1384 (SIG)
63.2%
64.9%
PSYCHOLOGY N=668 (SIG)
63.5%
67.7%
Predicted 2-Semester Return
Actual 2-Semester Return


STEM
30%
40%
50%
60%
70%
80%
90%
100%
ALL FALL 2014 DEGREE STUDENTS N=15935
61.6%
64.3%
BIOLOGY N=282 (NOT SIG)
65.7%
66.7%
COMPUTER SCIENCE N=447 (SIG)
65.1%
69.4%
COMPUTER TECHNOLOGY N=200 (SIG)
56.1%
59.0%
ENGINEERING N=582 (NOT SIG)
64.6%
65.1%
ENVIRONMENTAL SCIENCE N=54 (NOT SIG)
67.7%
68.5%
LIBERAL ARTS: MATH & SCIENCE N=1262 (SIG)
61.5%
57.8%
PROGRAMMING AND SYSTEMS N=238 (SIG)
57.5%
69.7%
Predicted 2-Semester Return
Actual 2-Semester Return


Councils
30%
40%
50%
60%
70%
80%
90%
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 N=2052 (SIG)
63.3%
65.8%
STEM N=3065 (NOT SIG)
62.4%
62.9%
Predicted 2-Semester Return
Actual 2-Semester Return

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	-1.147	-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

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

Business and Technology Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Accounting	659	69.7%	466
Business Administration	1,821	65.1%	1,198
Business Management	19	56.9%	12
Paralegal Studies	152	61.6%	98
Travel and Tourism	242	63.3%	158

ELA & Education Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Education	683	65.5%	455
Liberal Arts-Deaf Studies	72	63.4%	48
Liberal Arts-International Studies	40	68.1%	29
Liberal Arts-Latin American Studies	2	54.4%	2
Spanish Translation	27	67.6%	20

Health Sciences Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Dietetic Technician	82	65.9%	56
EMT	67	53.2%	38
Food Service Management	77	59.6%	49
Human Services	396	64.8%	263
Nursing	1,031	60.2%	629
Occupational Therapy Assistant	262	62.4%	168
Physical Therapy Assistant	375	60.2%	231
Practical Nursing LPN	272	59.1%	165
Radiologic Technology	301	59.3%	183
School Food Service	4	65.7%	3
Veterinary Technician	347	61.2%	217

Humanities Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Commercial Photography	129	61.7%	83
Commercial Photography-Fine Arts	7	61.6%	5
Communication Studies	206	64.6%	137
Fine Arts and Design	337	67.6%	233
Industrial Design Technology	52	61.9%	34
Music Recording Technoloy	163	52.7%	89
New Media Technology	251	60.5%	157
Philosophy	48	61.2%	32
Theater	188	65.0%	126

Liberal Arts Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Japanese	10	64.3%	8
Liberal Arts: Social Science & Humanities	1,726	60.8%	1,062
Liberal Arts-History	24	66.3%	17
Liberal Arts-Journalism	41	65.7%	29
Writing & Literature	120	66.0%	82

Social Science Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Criminal Justice	1,245	64.8%	817
Psychology	671	65.1%	444

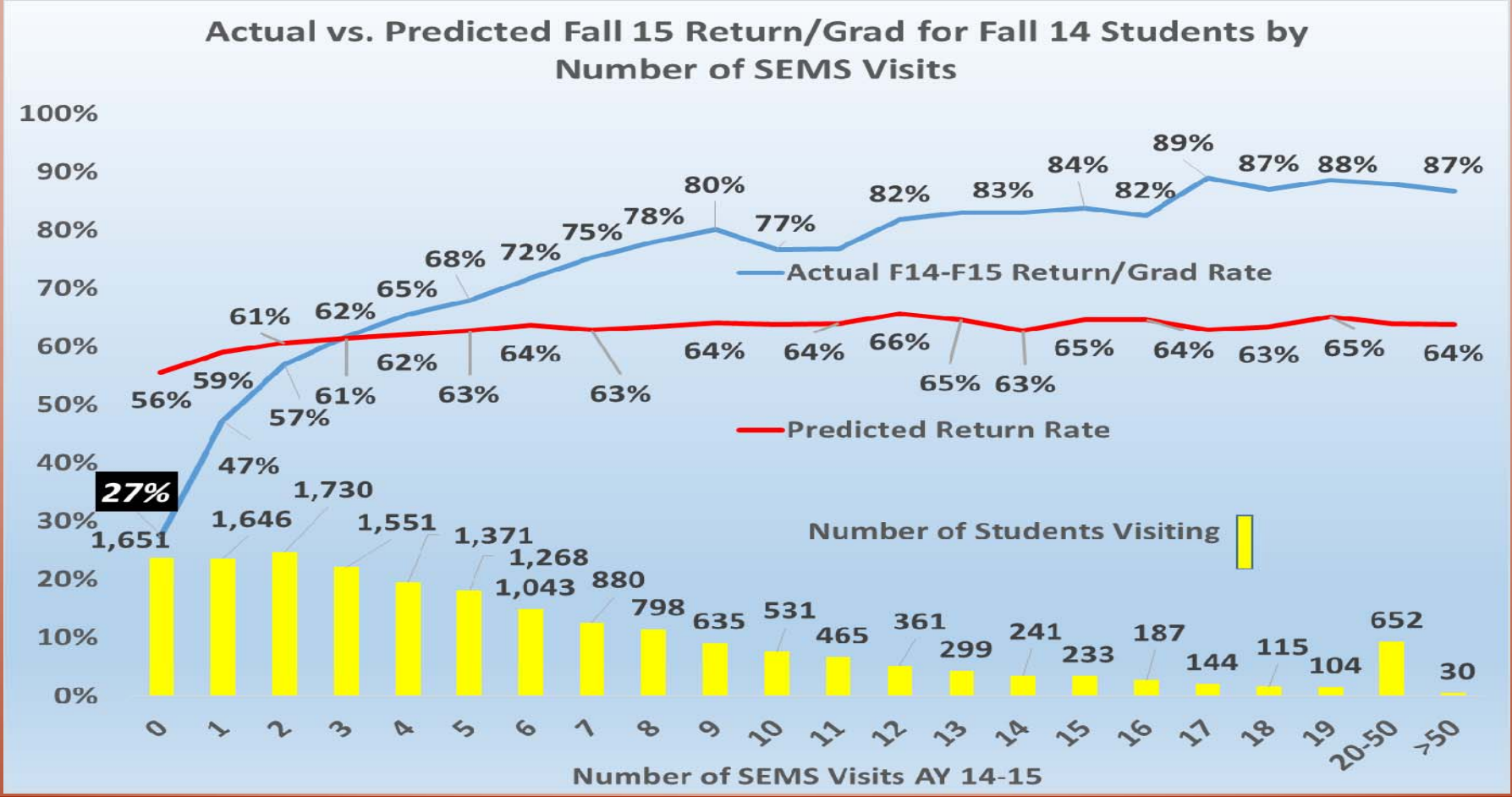
STEM Teams	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat sig.)
All Fall 2015 Degree Students	15,504	63.3%	9,853
Biology	285	67.4%	197
Computer Science	534	65.3%	355
Computer Technology	189	57.4%	113
Engineering	628	65.1%	416
Environmental Science	55	68.3%	40
Liberal Arts: Math & Science	1,407	62.8%	895
Programming and Systems	217	60.8%	136

Councils	Fall 2015 Enrollment	Expected 2-Semester Return/Grad Rate	Return/Grad # Goal to Beat (inc. stat 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

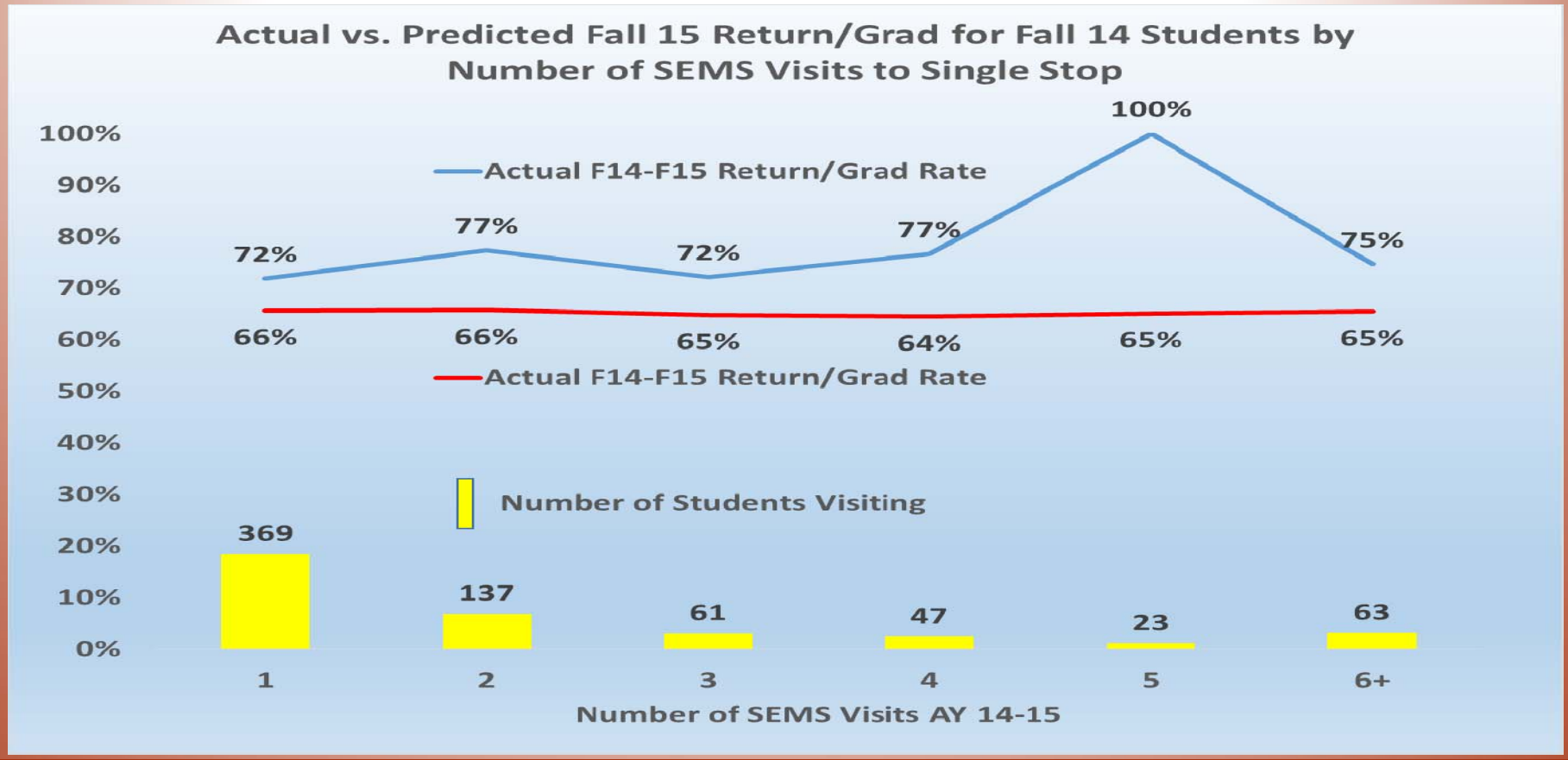
How about looking at SEMS data?

- 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?

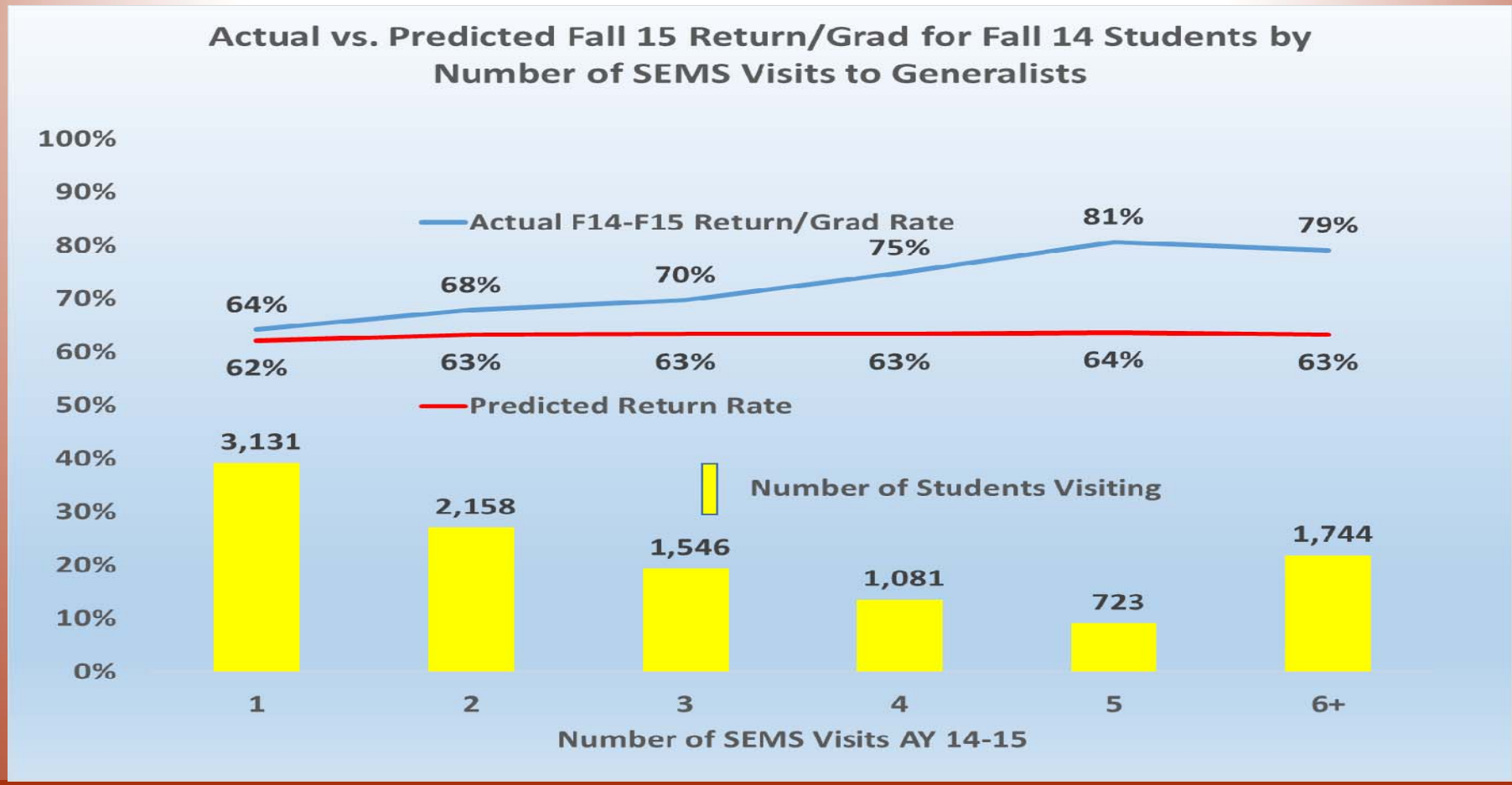
Not visiting any office is very, very bad!



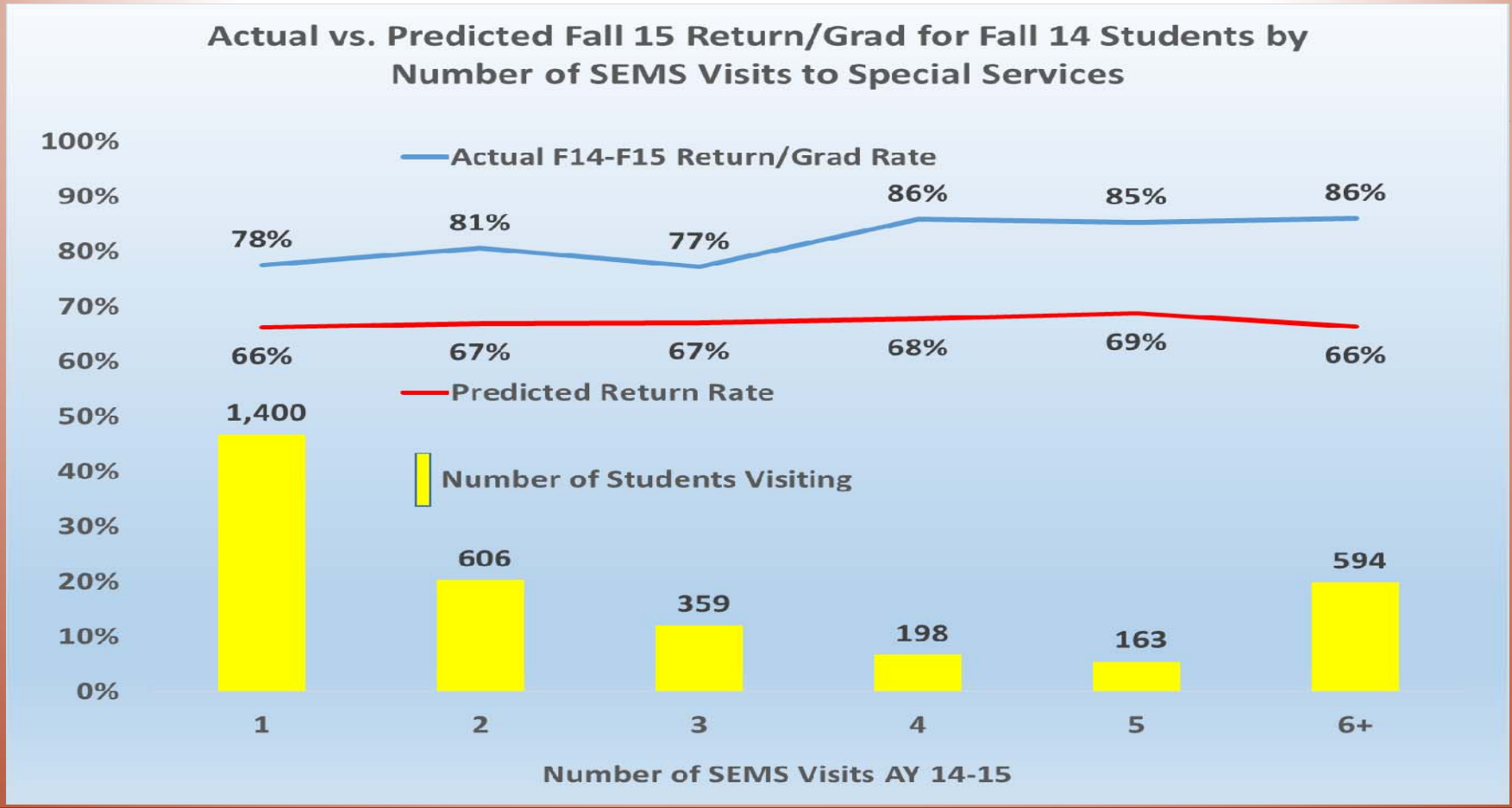
Visiting Single Stop is beneficial!



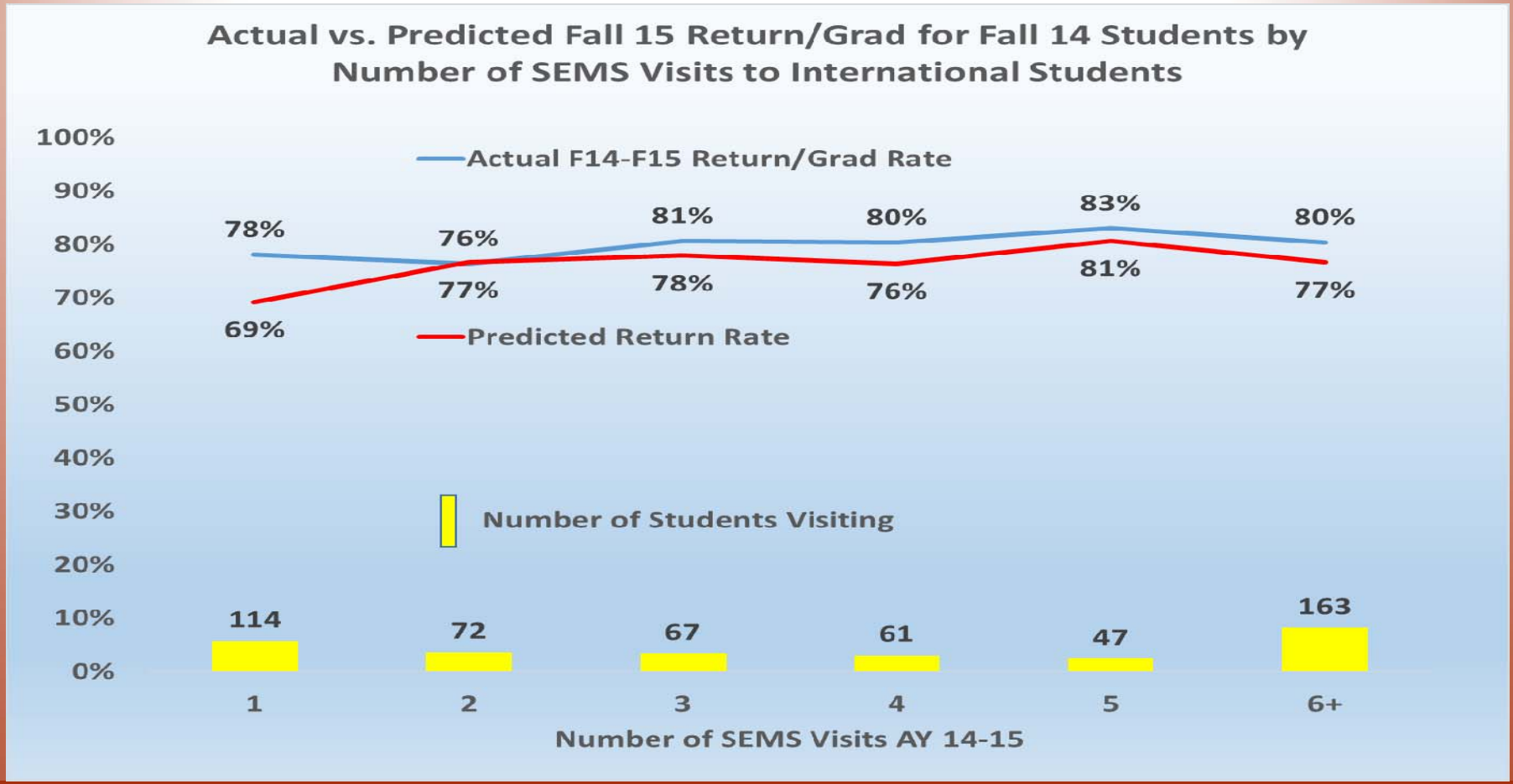
Visit C-107 Generalists more often!



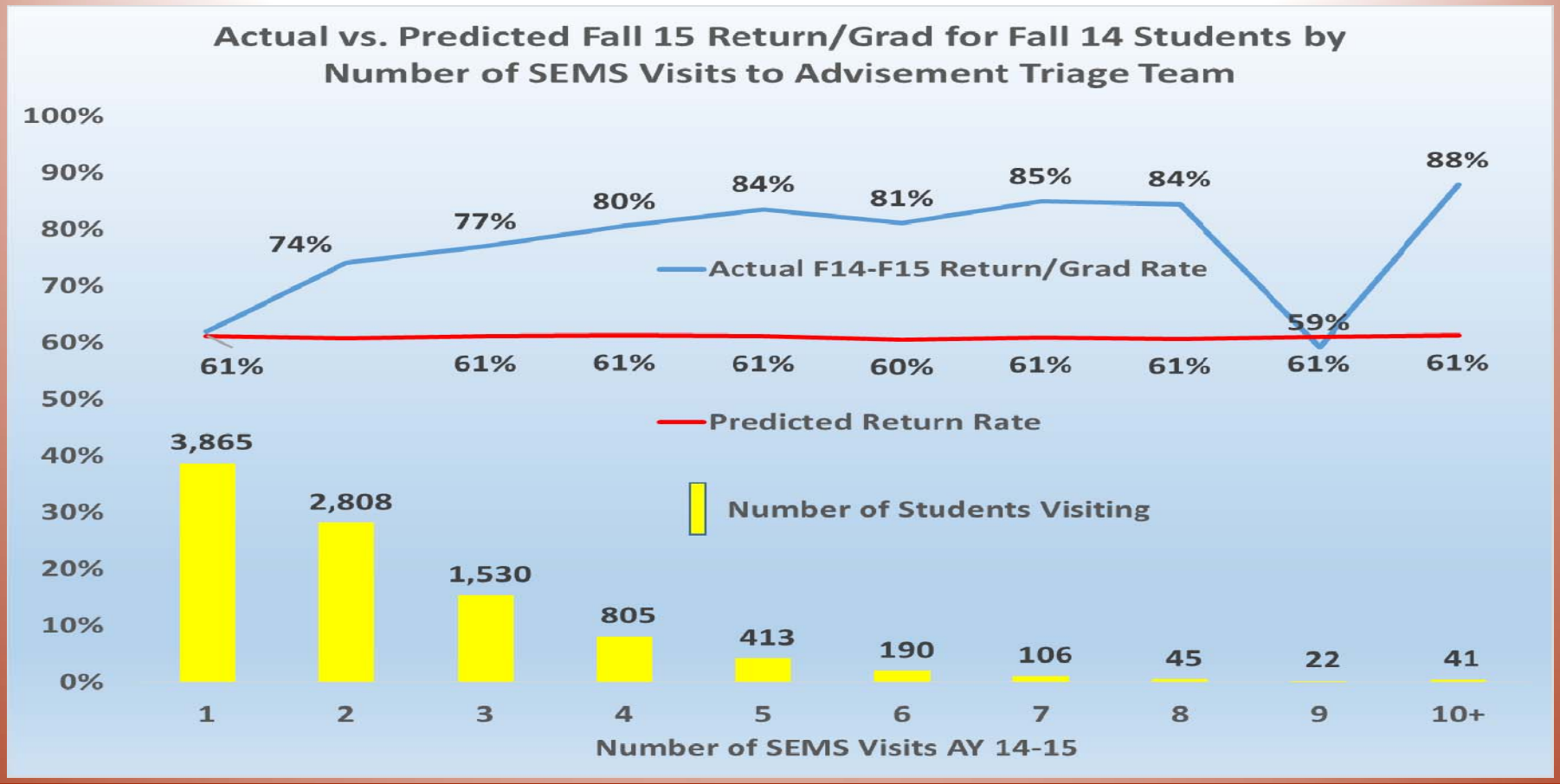
Visit Special Services at least once!



Being is almost as good as visiting International Students' Office



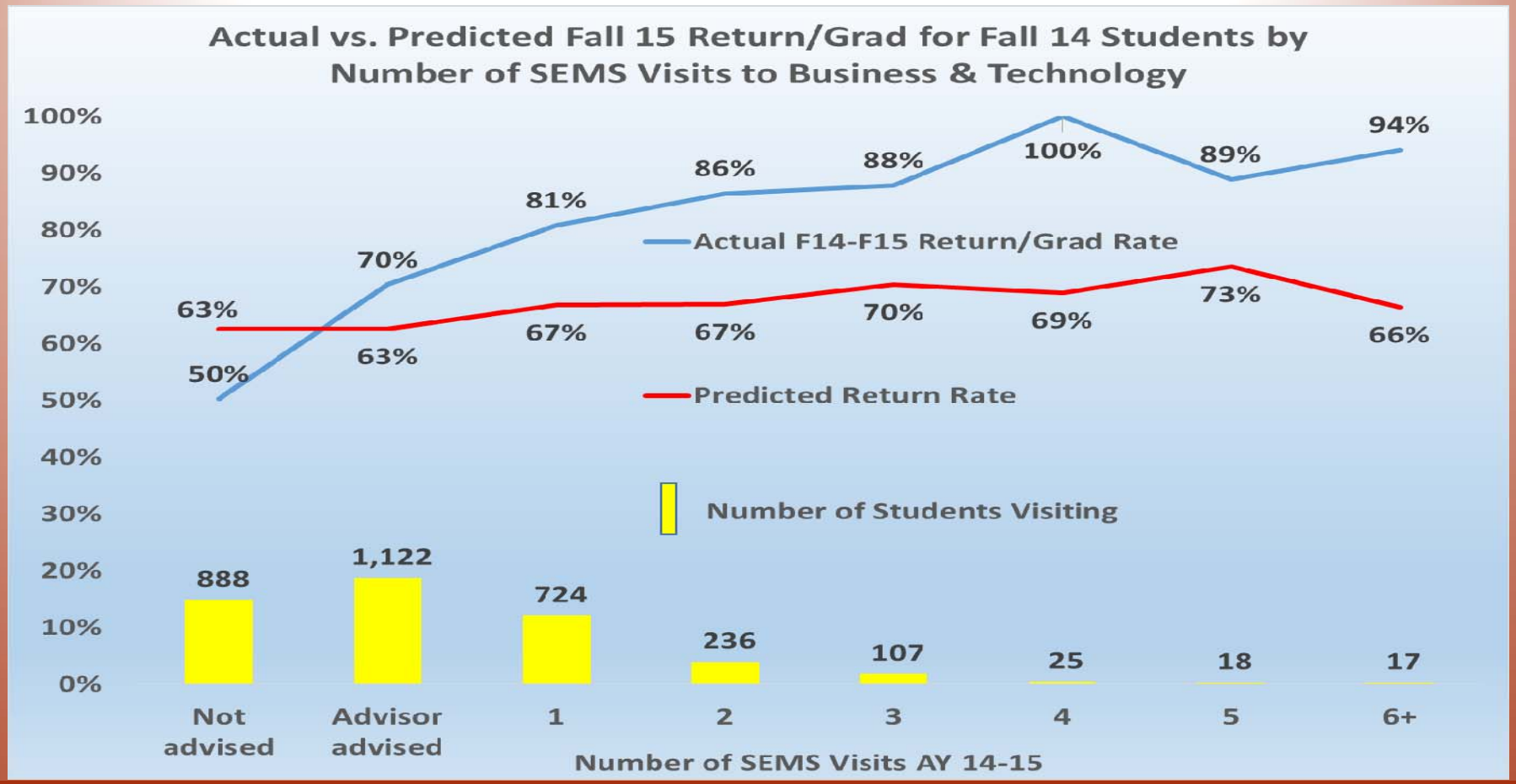
Seeing an advisor once is the norm. More than once helps (except not 9 times).



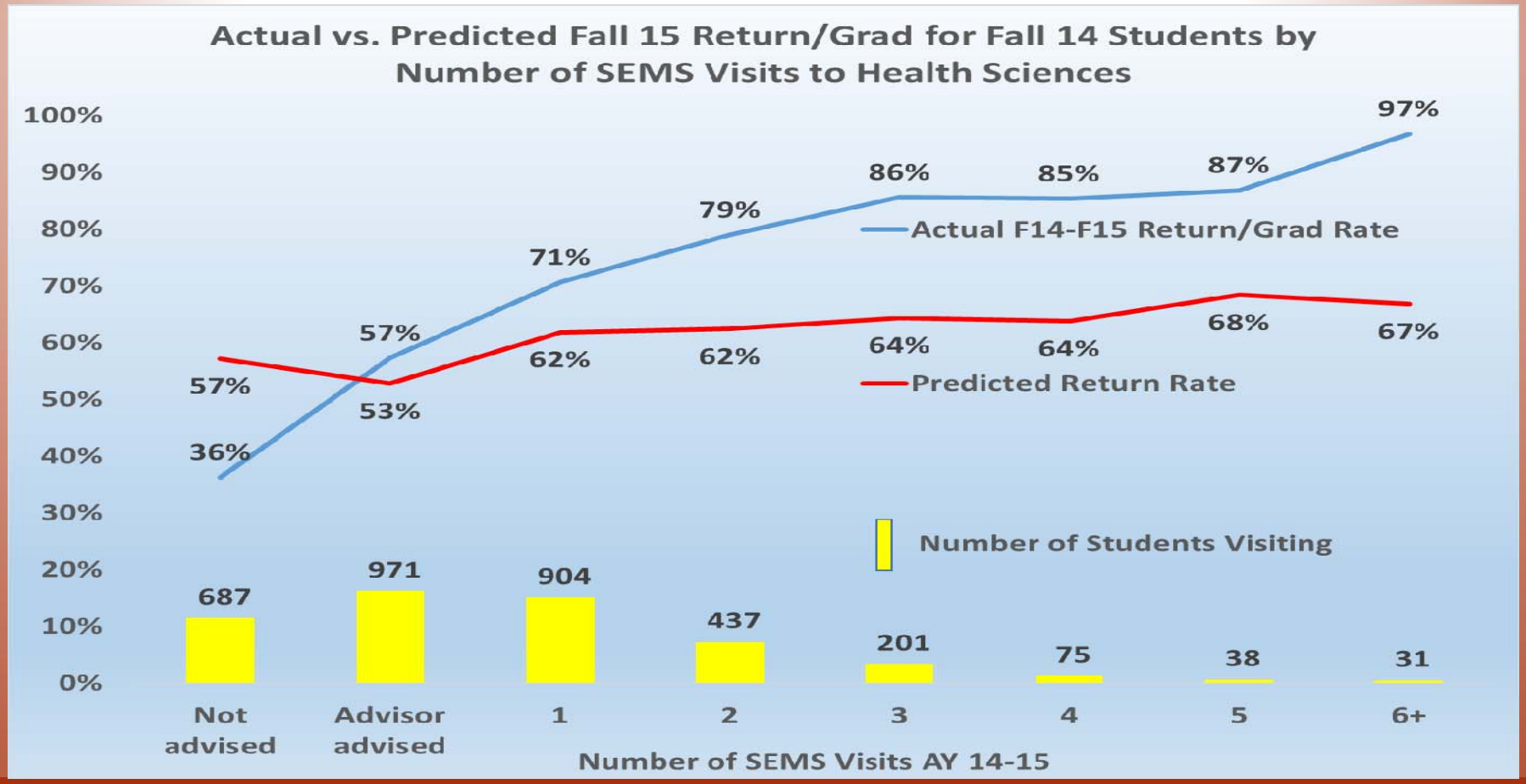
What about seeing a faculty member in a department?

- 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)

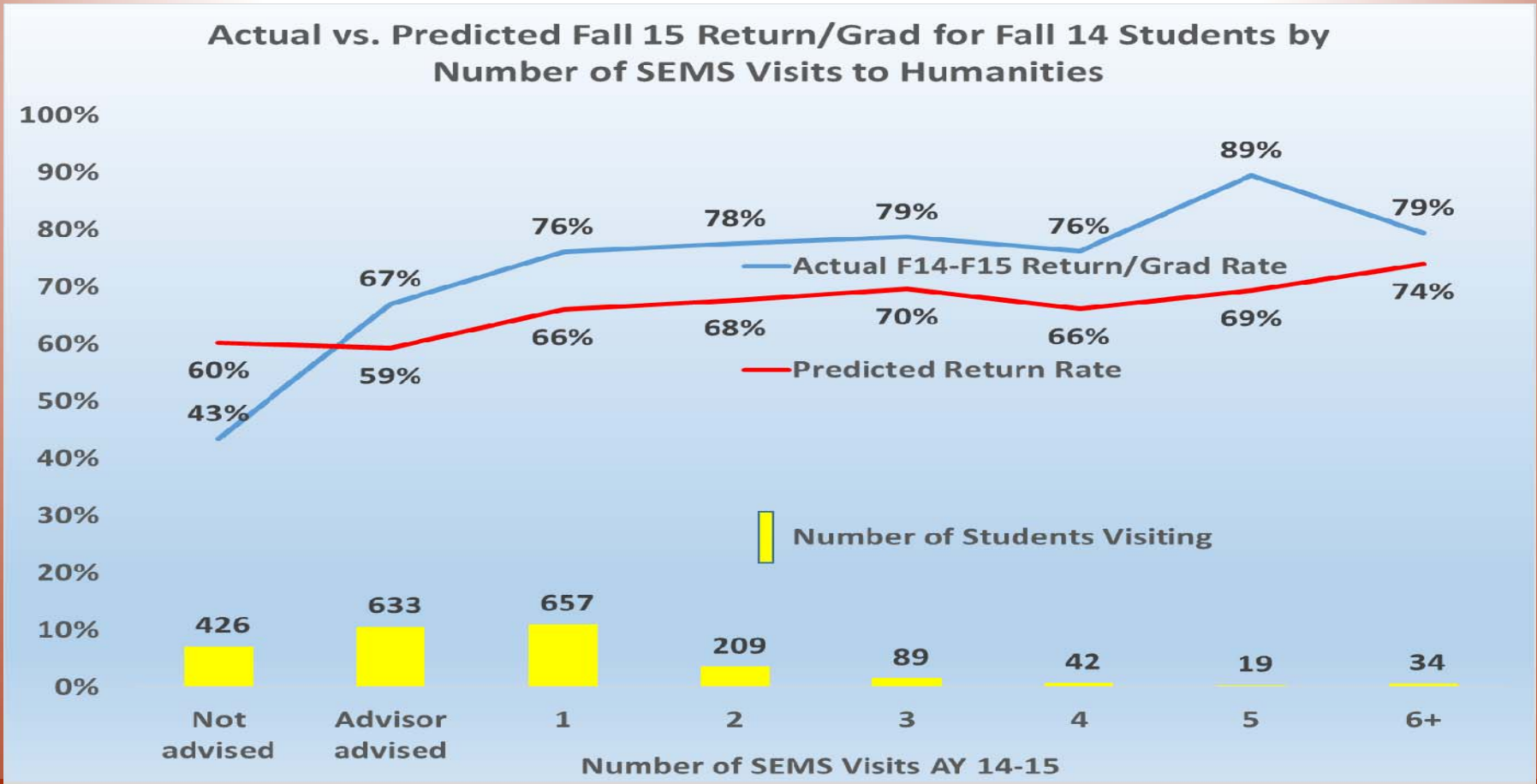
Seeing an advisor is good; Seeing a faculty member is better!



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



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



Drop-outs don’t do optional!