

# IDMG Summer Series

Turning Data Into Information  
Tools, Tips and Training



## Summer Session # 3

# What Did They Say? Tools to Present Survey Data

### Presenters:

**Gregg Thomson, Executive Director**

Office of Student Research and Campus Surveys

Office of Planning and Analysis

**Greg Dubrow, Director**

Research and Policy Analysis, Office of Undergraduate Admissions

# Overview of Today's Presentation

- How is campus survey “research” data different than other types of research
- All the charts you need and those you don't
- You are in control: Tips and tables for communicating the right message
- Case study of the wrong message: Can we recover?
- Spreading the word

**INSTITUTIONAL  
METRICS & INDICATORS**

Visual displays of existing institutional data; standardized, routinized; administrative and external lay audiences; no formal statistics; supergraphics as ideal

**PROGRAM EVALUATION**

Rigorous testing of outcomes requiring formal statistics; highly focused; limited internal (or funding agency) audience; limited need for charts

**CAMPUS SURVEYS**

Collection and generation of new and often disparate data; results open to multiple interpretations and uses; internal audiences, clients; visual display of data and use of formal statistics not required

**ACADEMIC RESEARCH**

Hypothesis testing requiring use of formal statistical methods; highly focused; charts for research results; external professional audience

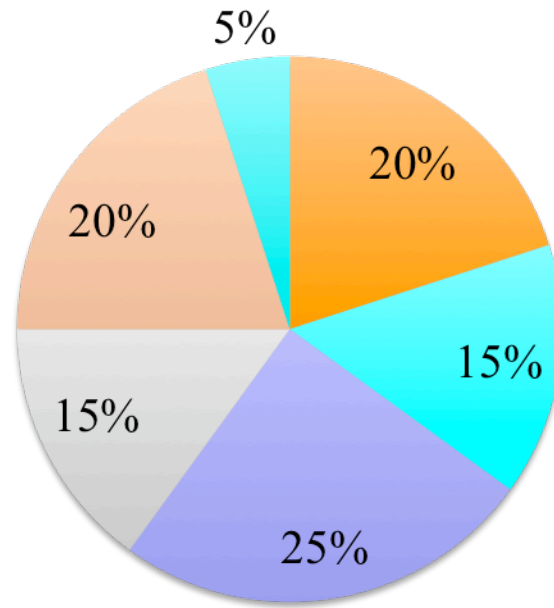
# The Four Principles of Presenting Campus Survey Data

- Be informed by the logic of inferential statistics but a statistics-free approach is good
- Emphasis on charts is detrimental
- It's your responsibility to define and convey your message; the numbers do not speak for themselves
- Always give it your best shot but be humble in the knowledge that you could be wrong

# Using (and Not Using) Charts

- What charts not to use and why
- One-variable bar and column charts
- Clustered bar and column charts
- Stacked and 100% stacked bar and column charts
- Specific topic: representing the representativeness of your survey respondents

# Should I Use a Pie Chart?



■ NO-Too Few Slices

■ NO-Ordered Data

■ NO-Other Reasons

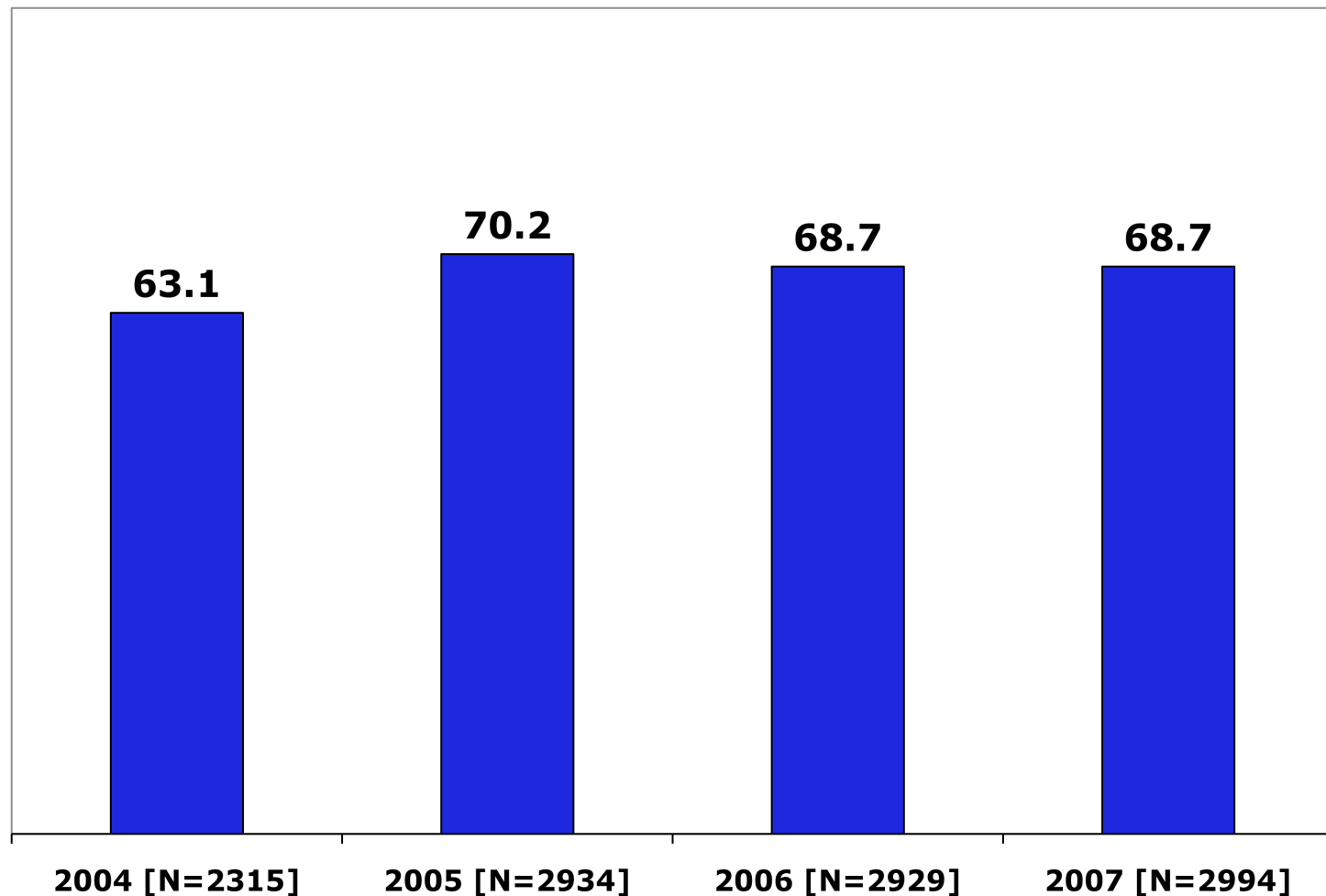
■ NO-Too Many Slices

■ NO-Not Meaningful Whole

■ YES-I love my pie

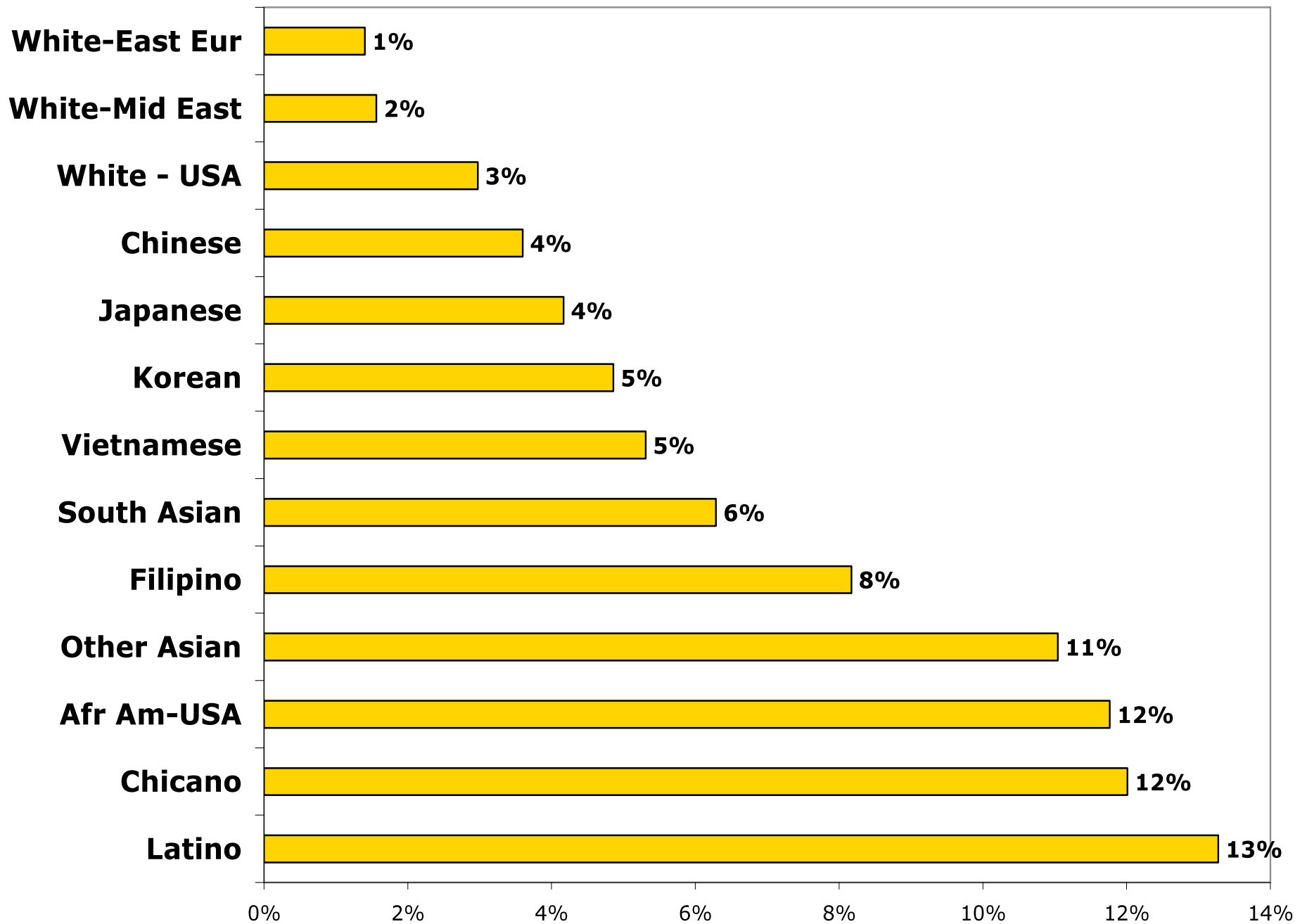
# Example of Univariate Column Chart

**UCB Survey of New Fall Freshmen Response Rates**





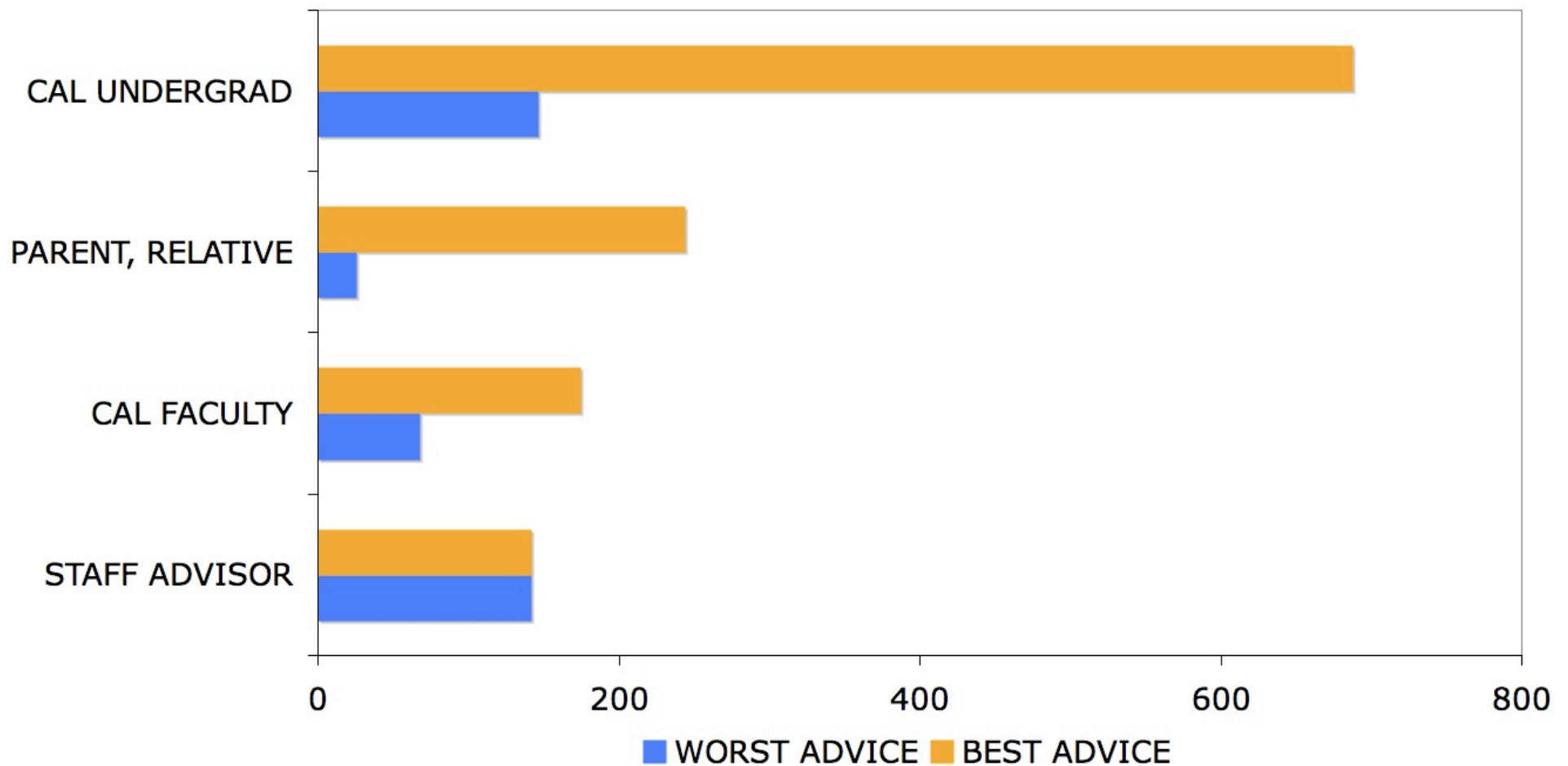
### % First-Year Probation (2004, 2005, 2006 Freshmen)



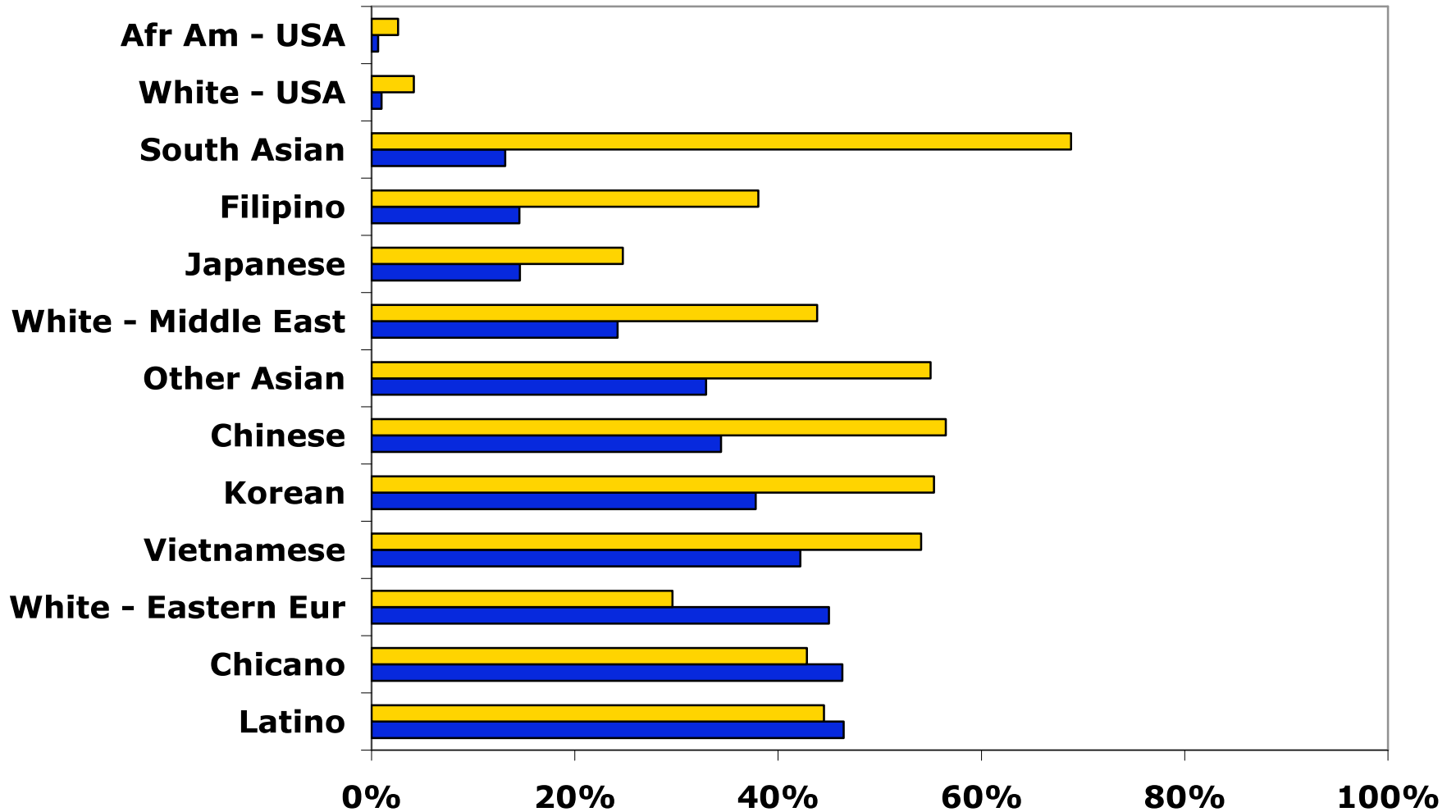


# Example of Clustered Bar

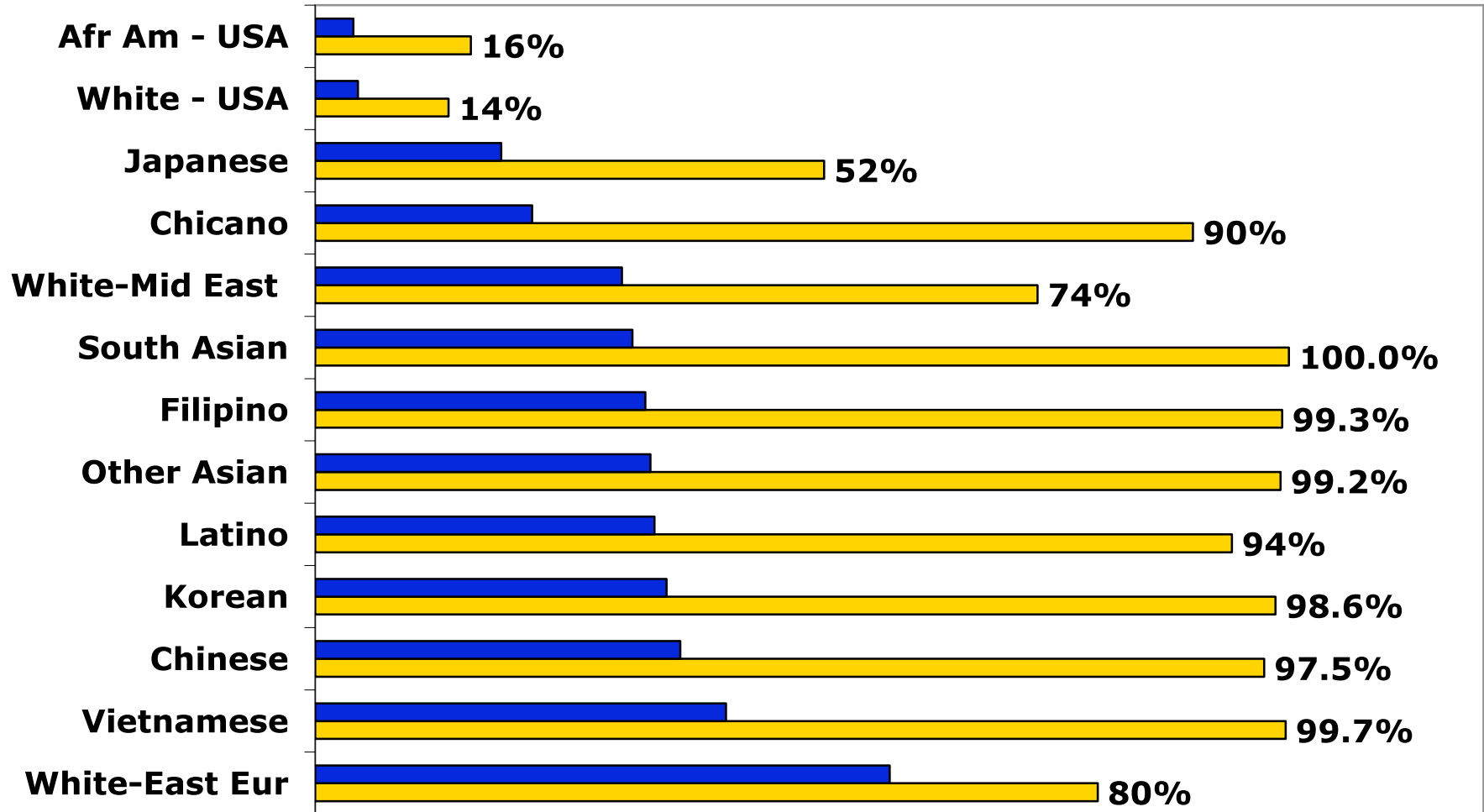
Major Sources of Best and Worst Advice



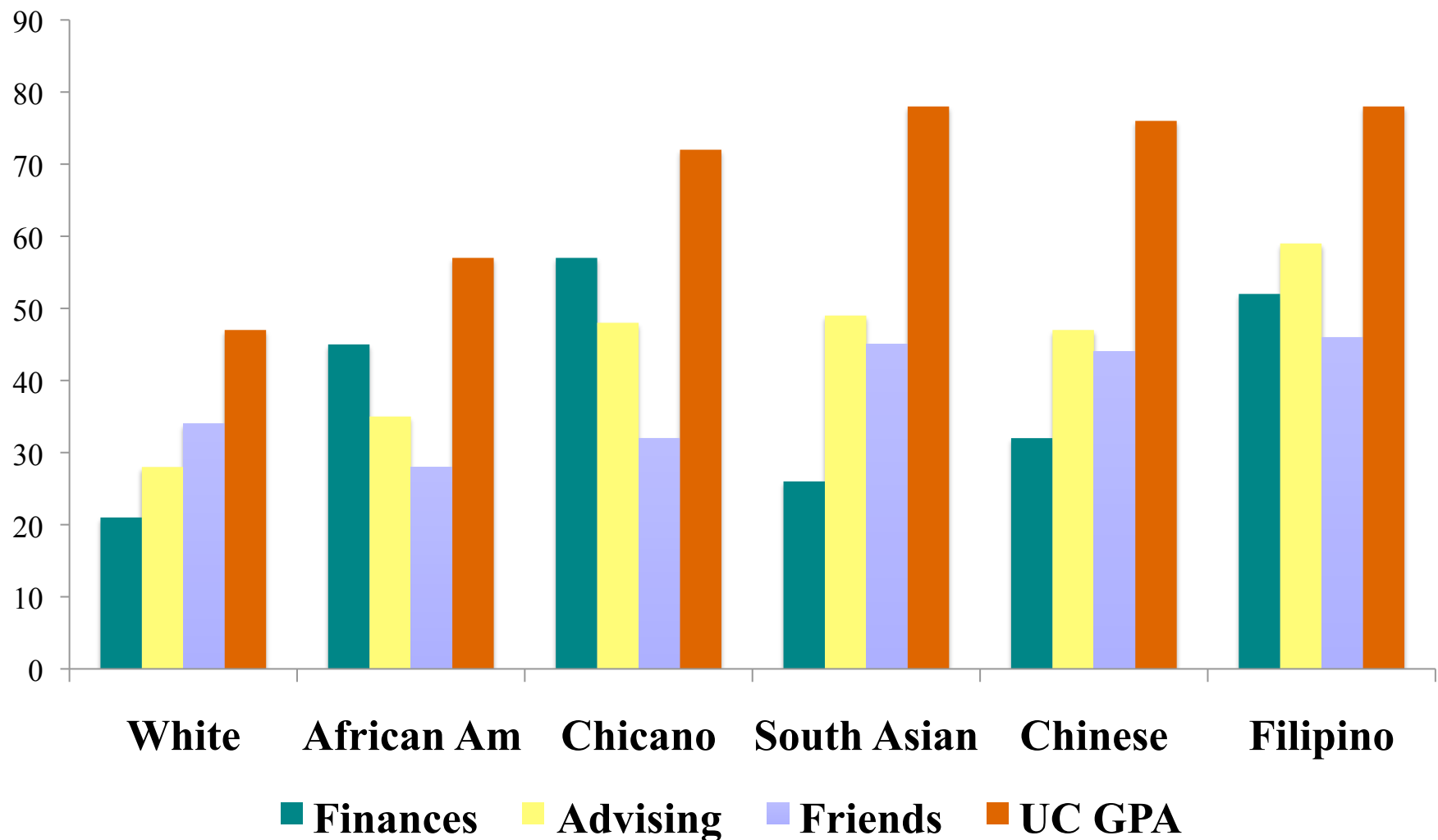
## 1st Language: Other Only [BLUE] and English Plus Other [GOLD]



**% Not Born in US [BLUE] and At Least One Parent  
Not Born in US [GOLD]**



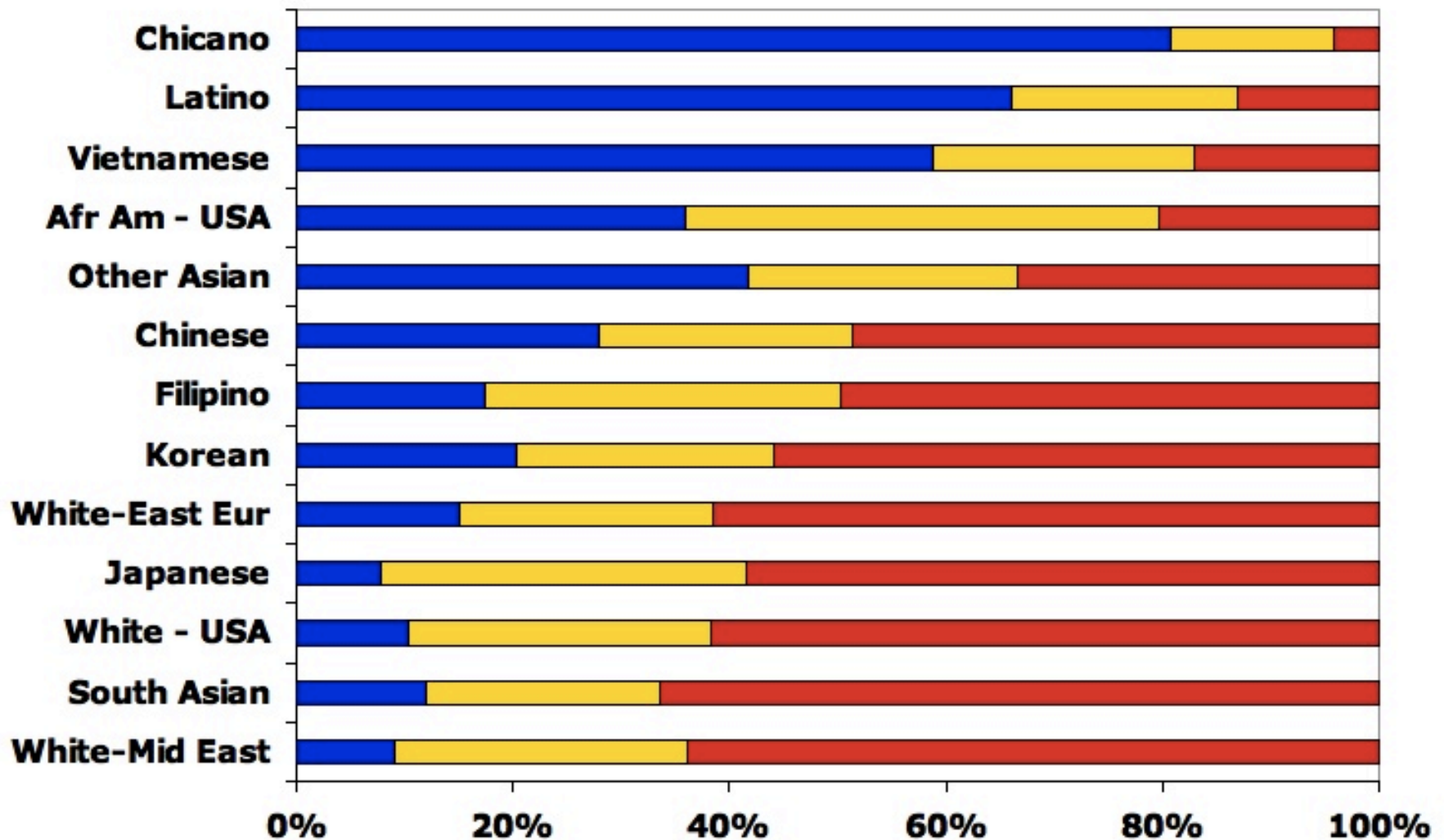
## % New Freshmen “Very Concerned” about Aspects of College Experience by Selected Ethnic Groups



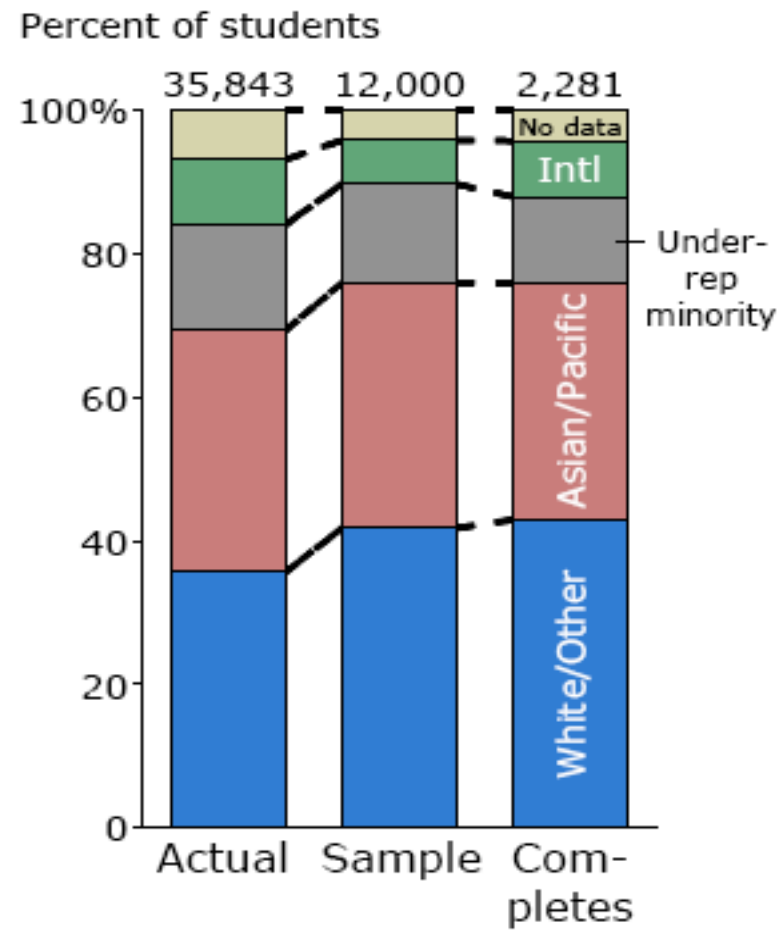


# Example of 100% Stacked Bar

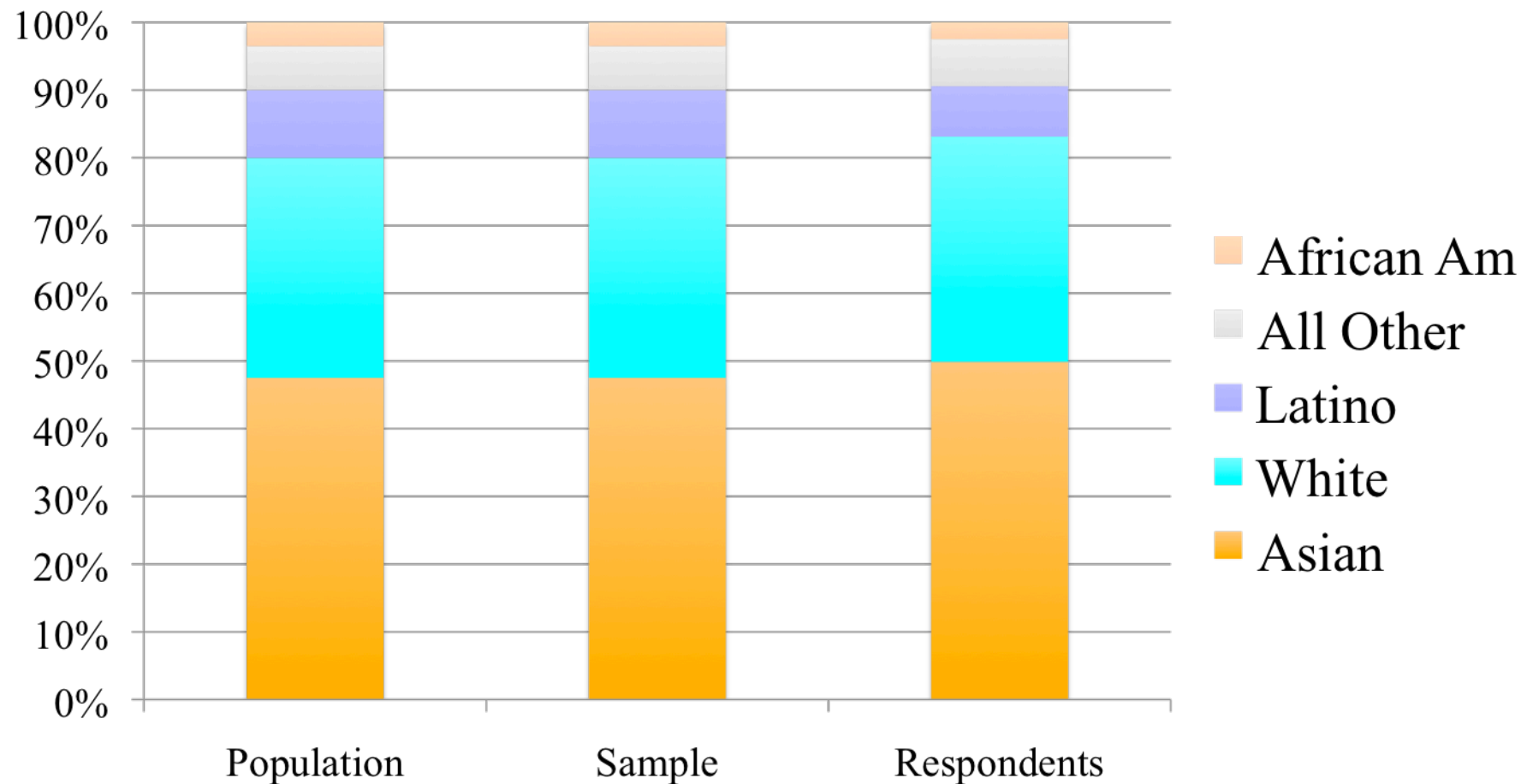
**Parents' Education: No College Degree [BLUE], One with Degree [GOLD], Both with Degrees [RED]**



# 100% Stacked Column - Representativeness of Survey Respondents: Bain OE Final Report



# Hypothetical Example of 100% Stacked Column to Represent Survey Results





# Proportion Comparison versus Response Rate Analysis

	Numbers		Proportion		Response Rate
	Sample	Responses	Sample	Responses	
African Am	80	21	.04	.03	26%
Latino	200	60	.10	.07	30%
White	650	268	.33	.33	41%
Asian	940	401	.47	.50	43%
Other	130	56	.07	.07	43%
TOTAL	2000	806	1.00	1.00	40%

# Defining the Message and Designing Tables to Communicate It

- Taking control of your results
- Identifying the object of interest
- Using demographics to organize your results
- Cherry-picking, distractions, and GEE

## Average UC GPA by Enrollment Status and Family Financial Background

	Freshman Entrant		CC
	Lower	Upper	Transfer
Pell Grant	3.17	3.17	3.25
LT \$80,000	3.30	3.29	3.32
\$80-124,999	3.36	3.39	3.27
\$125,000+	3.41	3.43	3.30

## Mean GPA by Hours Worked by Family Financial Background: Upper Division Freshman Entrants

	0	1-10	11-16	16+
Pell Grant	3.18	3.26	3.27	3.05
LT \$80,000	3.31	3.34	3.31	3.22
\$80-124,999	3.40	3.42	3.38	3.39
\$125,000+	3.43	3.48	3.46	3.37

## % Satisfied with College Advising by Enrollment Status and Family Financial Background

	Freshman Entrant		CC Transfer
	Lower	Upper	
Pell Grant	75	76	80
LT \$80,000	69	71	79
\$80-124,999	72	72	82
\$125,000+	69	71	84

# IMMIGRANT GENERATIONS

<b>Gen 1.0</b>	<b>Not Born-Recent Immigrant</b>	<b>801</b>	<b>7.4%</b>
<b>Gen 1.5</b>	<b>Not Born-USA by Age 13</b>	<b>1694</b>	<b>15.7%</b>
<b>Gen 2.0</b>	<b>Both Parents Not Born</b>	<b>3499</b>	<b>32.4%</b>
<b>Gen 2.5</b>	<b>One Parent Not Born</b>	<b>1038</b>	<b>9.6%</b>
<b>Gen 3.0</b>	<b>All Grandparents Not Born</b>	<b>213</b>	<b>2.0%</b>
<b>Gen 3.5</b>	<b>Two Grandparents Not Born</b>	<b>962</b>	<b>8.9%</b>
<b>Gen 4.0</b>	<b>Grandparents Born in US</b>	<b>2578</b>	<b>23.9%</b>

## PARENTAL EDUCATION

<b>Gen A1</b>	<b>No College Experience</b>	<b>1964</b>	<b>18.2%</b>
<b>Gen A2</b>	<b>One or Both Parents Some College</b>	<b>1106</b>	<b>10.3%</b>
<b>Gen B1</b>	<b>One Parent College Degree</b>	<b>1489</b>	<b>13.8%</b>
<b>Gen B2</b>	<b>Both Parents College Degrees</b>	<b>1967</b>	<b>18.2%</b>
<b>Gen C</b>	<b>One Parent Graduate Degree</b>	<b>2704</b>	<b>25.1%</b>
<b>Gen D</b>	<b>Both Parents Graduate Degrees</b>	<b>1555</b>	<b>14.4%</b>

**RACE, IMMIGRATION & EDUCATION:  
WHITE AND CHINESE STUDENTS (%)**

	Immigrant Generation		
<b>WHITE</b>	First	Second	Third+
No College	2	2	<b>14</b>
College	2	5	<b>34</b>
One Grad	3	6	<b>18</b>
Both Grad	3	4	7
<b>CHINESE</b>			
No College	<b>14</b>	<b>15</b>	1
College	8	<b>11</b>	3
One Grad	9	<b>17</b>	2
Both Grad	6	<b>14</b>	0



**RACE, IMMIGRATION & EDUCATION:  
CHICANO AND AFRO AMER STUDENTS (%)**

	Immigrant Generation		
<b>CHICANO</b>	First	Second	Third+
No College	<b>16</b>	<b>44</b>	<b>13</b>
College	2	7	9
One Grad	1	3	3
Both Grad	0	1	1
<b>AFRICAN AMERICAN</b>			
No College	5	7	<b>42</b>
College	3	6	<b>19</b>
One Grad	2	6	5
Both Grad	1	3	1

**RACE, IMMIGRATION & EDUCATION:  
S. ASIAN AND VIETNAMESE STUDENTS (%)**

	Immigrant Generation		
<b>S. ASIAN</b>	First	Second	Third+
No College	4	4	0
College	8	10	1
One Grad	<b>14</b>	<b>28</b>	0
Both Grad	6	<b>24</b>	0
<b>VIETNAMESE</b>			
No College	<b>25</b>	<b>34</b>	0
College	9	<b>15</b>	0
One Grad	2	9	0
Both Grad	1	5	0

**FINANCIAL RESOURCES I:  
PELL GRANT RECIPIENTS (%)**

	Immigrant Generation		
WOMEN	First	Second	Third+
No College	64	52	40
College	35	20	11
One Grad	21	13	7
Both Grad	11	5	4
MEN			
No College	61	51	31
College	36	19	12
One Grad	18	13	7
Both Grad	13	7	1

**FINANCIAL RESOURCES II:  
PARENTAL INCOME \$100,000+ (%)**

	Immigrant Generation		
WOMEN	First	Second	Third+
No College	3	8	18
College	18	35	54
One Grad	33	55	71
Both Grad	54	72	79
MEN			
No College	2	8	23
College	19	40	56
One Grad	47	60	72
Both Grad	63	74	85

## SATISFACTION WITH UC BERKELEY GPA (%)

	Immigrant Generation		
WOMEN	First	Second	Third+
No College	42	44	64
College	47	49	71
One Grad	50	53	71
Both Grad	57	50	75
MEN			
No College	43	44	60
College	42	48	65
One Grad	45	49	63
Both Grad	59	53	64

**SATISFACTION WITH UC BERKELEY GPA:  
ACTUAL GPA 3.40-3.59 (%)**

	Immigrant Generation		
WOMEN	First	Second	Third+
No College	43	62	<b>78</b>
College	48	62	<b>78</b>
One Grad	55	55	<b>82</b>
Both Grad	52	44	<b>74</b>
MEN			
No College	49	68	<b>76</b>
College	44	62	<b>81</b>
One Grad	56	58	<b>75</b>
Both Grad	58	48	<b>76</b>

# A Case Study of the Wrong Message and Trying to Set the Record Straight

- Misinterpretation of student views of academic advising
- Failing to define and communicate the message
- Can campus survey results help by answering these two questions:
  - How dissatisfied do students really say they are with academic advising?
  - How important is “improving” academic advising for students?



## **“UC Berkeley bloated, wasteful, consultants say” Nanette Asimov, SF Chronicle, April 13, 2010**

No faith in advising

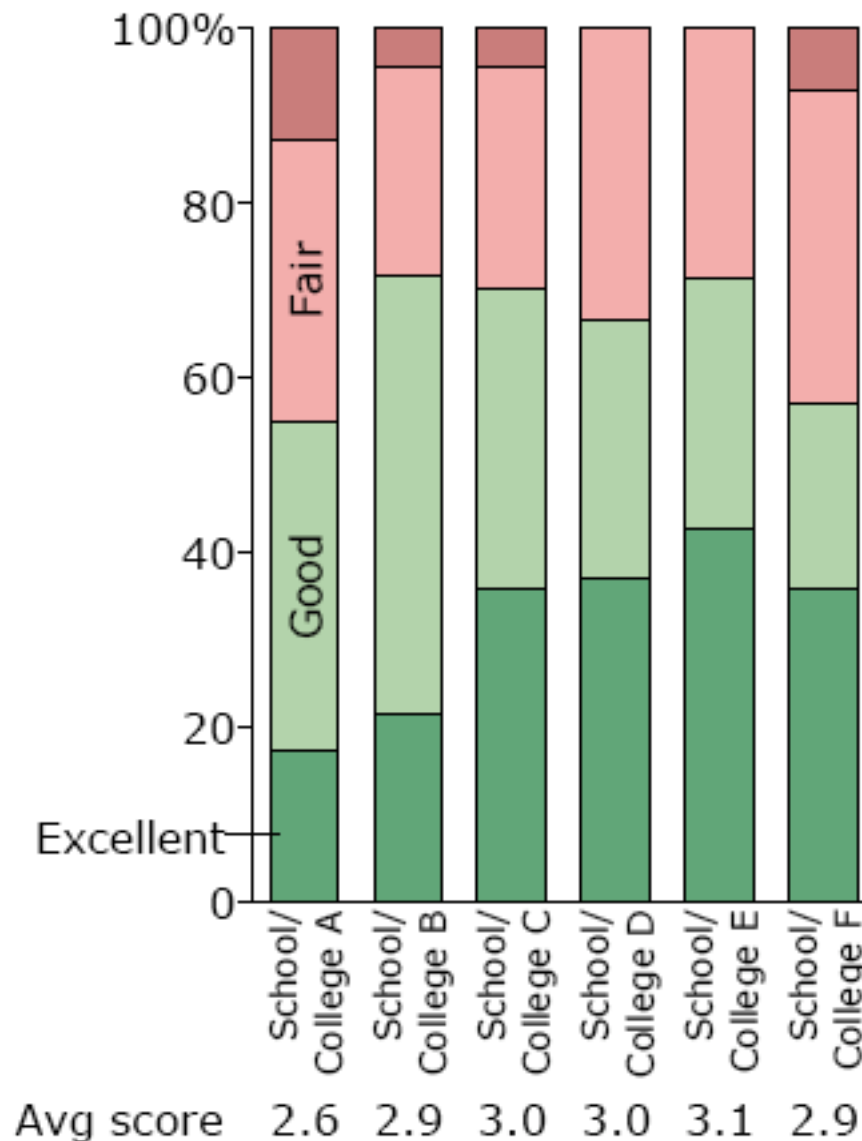
The school spends \$17 million on academic advising, but even students don't think the money is well spent. "School and department advising is terrible," wrote one undergrad responding to a survey from the consultants. "I never trust what I am being told."

The comment was typical of those made about that department.

Fewer than 1 in 5 undergraduates responded to the survey. Alumni and managers also had low response rates, but the consultants spent months meeting with hundreds of staff, students and faculty, and solicited comments on the Internet to diagnose the campus.



# 100% Stacked Column - Satisfaction with Advising by School or College: Bain OE Final Report



# Bain's Results and their Presentation

- Technical critique of the chart
- The omission of any message
- No connection made between the satisfaction results and the “need for improvement” quotes
- Resulting vulnerability to sensationalistic media report

**How satisfied are you with each of the following aspects of your educational experience?**

Advising by school or college staff on academic matters

Advising by departmental staff on academic matters

## **% Distribution of Satisfaction with School/ College and Department Advising by Gender**

	School/College		Department	
	Women	Men	Women	Men
Very dissatisfied	<b>3</b>	<b>4</b>	<b>3</b>	<b>3</b>
Dissatisfied	<b>6</b>	<b>7</b>	<b>5</b>	<b>5</b>
Somewhat dissatisfied	<b>15</b>	<b>14</b>	<b>12</b>	<b>13</b>
Somewhat satisfied	<b>37</b>	<b>37</b>	<b>34</b>	<b>35</b>
Satisfied	<b>31</b>	<b>30</b>	<b>32</b>	<b>32</b>
Very satisfied	<b>9</b>	<b>8</b>	<b>13</b>	<b>12</b>
Total Somewhat to Very Satisfied	<b>76</b>	<b>75</b>	<b>80</b>	<b>79</b>

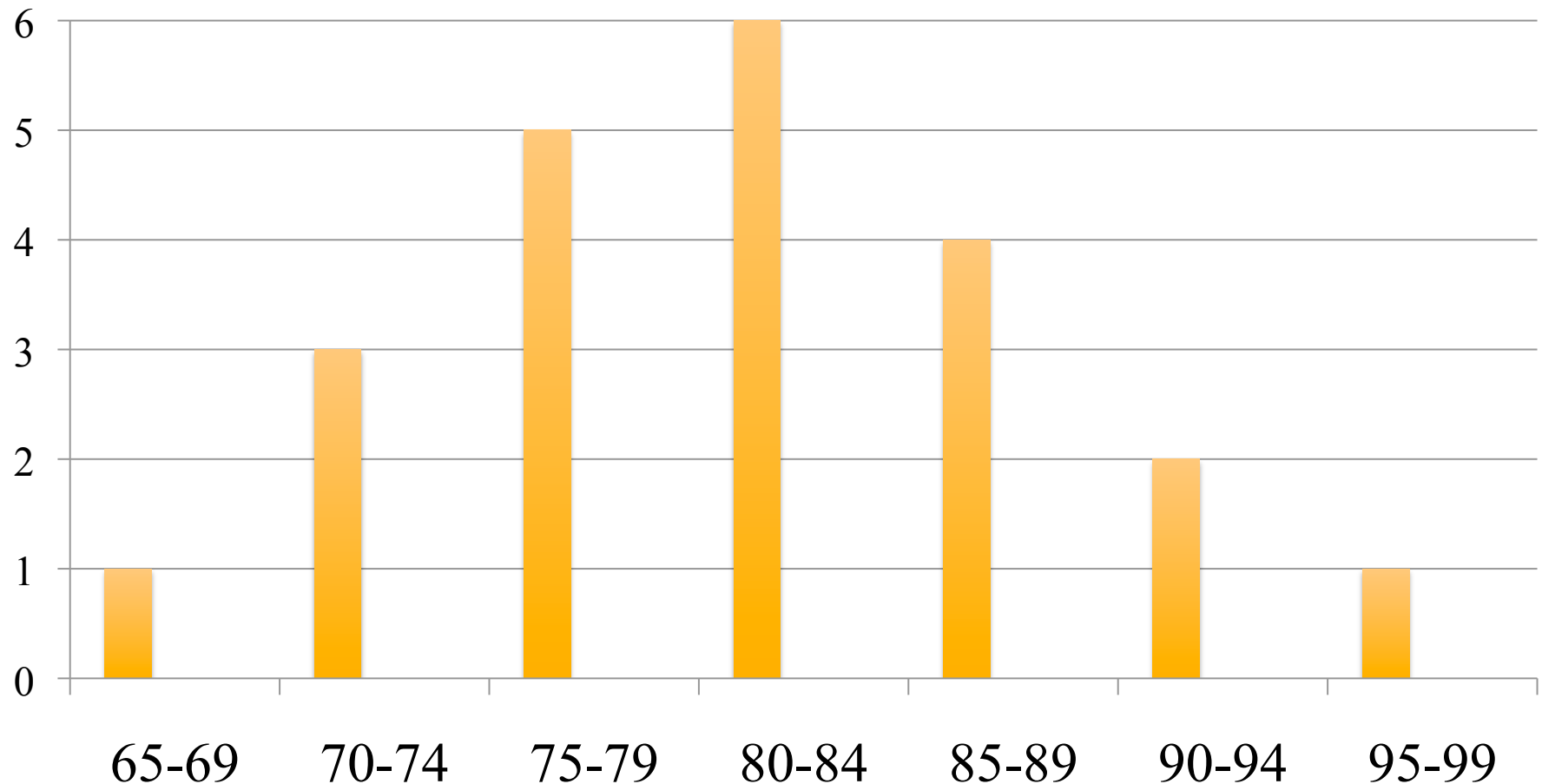
## **% Somewhat to Very Satisfied with College and Departmental Advising by School/College**

<b>School/College</b>	<b>College</b>	<b>Department</b>	<b>At least 1 of the 2</b>
Business Administration	<b>82</b>	<b>83</b>	<b>87</b>
Natural Resources	<b>80</b>	<b>80</b>	<b>85</b>
Concurrent	<b>78</b>	<b>84</b>	<b>86</b>
Environmental Design	<b>76</b>	<b>76</b>	<b>80</b>
Letters & Science	<b>76</b>	<b>80</b>	<b>85</b>
Engineering	<b>74</b>	<b>77</b>	<b>82</b>
Chemistry	<b>74</b>	<b>75</b>	<b>79</b>

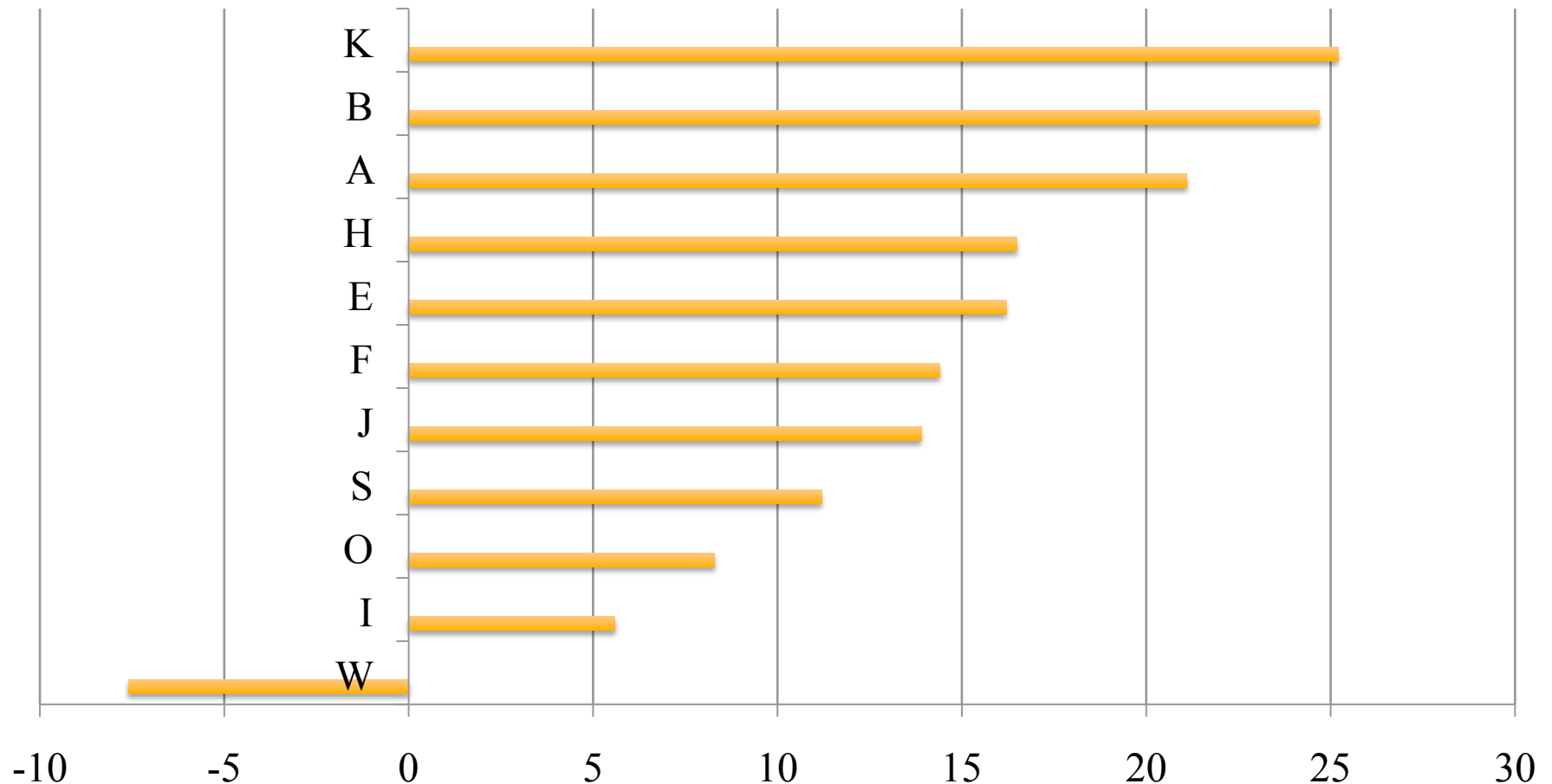
# **% Somewhat to Very Satisfied with Department and College Advising – 23 Large Majors**

<b>Major</b>	<b>Dept</b>	<b>College</b>	<b>At least 1 of the 2</b>	<b>Major</b>	<b>Dept</b>	<b>College</b>	<b>At least 1 of the 2</b>
A	96	89	97	M	83	82	87
B	92	81	94	N	81	80	84
C	91	88	95	O	79	75	83
D	90	91	94	P	79	78	82
E	88	79	91	Q	77	74	82
F	87	82	91	R	75	73	79
G	85	77	87	S	75	72	81
H	85	79	88	T	74	74	78
I	84	79	89	U	72	73	76
J	84	77	88	V	70	72	77
K	83	72	85	W	68	77	82
L	83	78	90				

## Distribution of Largest Majors by % Satisfaction with Departmental Advising Intervals



# % Majors Rating Dept Advising Higher Minus % Rating College Advising Higher – L & S Majors





# BAIN and UCUES Open-ended “Improvement” Questions

**[BAIN] What are the 2-3 areas where the student experience can be most improved?**

**[UCUES]**

**What is the SINGLE, MOST IMPORTANT thing that your campus could realistically do to create a better undergraduate experience for students like you?**

**Please describe only one:**

## **% Indicating Improved Advising is Most Important for Improving Student Experience by Gender and Level of Dissatisfaction with Advising**

		DEPARTMENT		
	COLLEGE	Dissatisfied	Somewhat Sat	Satisfied
	Dissatisfied	<b>12</b>	<b>12</b>	<b>7</b>
WOMEN	Somewhat Sat	<b>9</b>	<b>4</b>	<b>3</b>
	Satisfied	<b>3</b>	<b>5</b>	<b>3</b>
	Dissatisfied	<b>6</b>	<b>3</b>	<b>5</b>
MEN	Somewhat Sat	<b>3</b>	<b>3</b>	<b>2</b>
	Satisfied	<b>2</b>	<b>2</b>	<b>2</b>

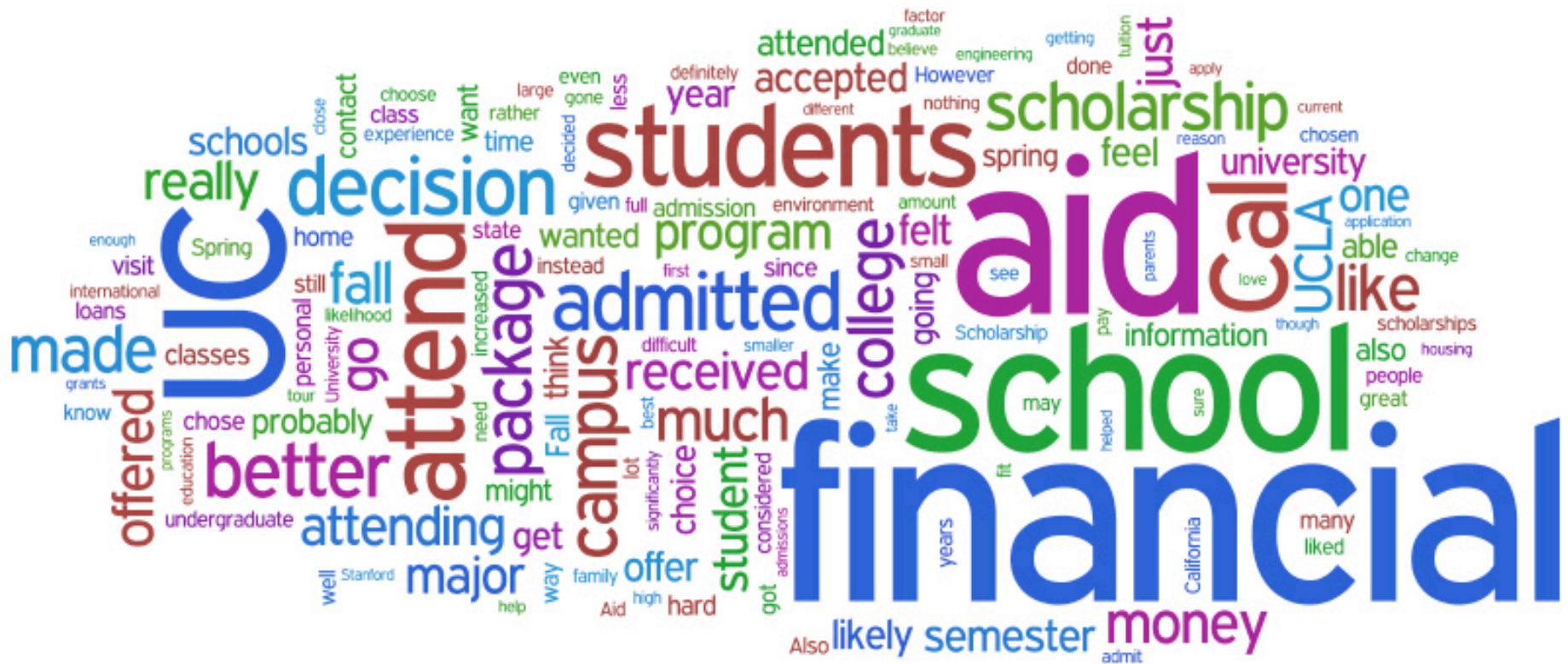
## Number Indicating Improved Advising is Most Important for Improving Student Experience by School/College and Gender

School/College	Major	Women	Men	Total
Business Adm	Declared	2	3	5
Chemistry	Declared	3	2	5
Concurrent	Declared	4	4	8
Engineering	Declared	8	23	31
Environ Design	Declared	11	2	13
Letters & Science	Undeclared	157	61	218
	Declared	129	28	157
Natural Resources	Undeclared	6	1	7
	Declared	16	7	23
TOTAL		336	131	467

# Presenting Qualitative Results Using Word Cloud

- What is a Word Cloud?
- Example from admissions
- Example related to advising

<http://www.wordle.net/create>



# Improving Advising

A word cloud visualization centered around the theme of college advising. The words are arranged in a circular pattern, with 'better' and 'access' being the most prominent. Other words include 'mandatory', 'personal', 'peer', 'financial aid', 'career', 'faculty', 'college advisor', 'freshman', 'major', and 'major advisor'. The words are in various shades of brown and red, with different font sizes and orientations.

mandatory  
personal  
better  
peer  
financial aid  
career  
faculty  
college advisor  
access  
freshman  
major  
major advisor



# That's All Folks...

- Handouts and the archived stream of the event can be found on the IDMG website:

<http://idmg.berkeley.edu/summerseries.htm>

- Questions or Comments???