Karolynn Horan, Research Associate DePaul University

Presented at the Association for Institutional Research Forum Toronto, May 2011



"My presentation lacks power and it has no point.

I assumed the software would take care of that!"

What We'll Cover

- DePaul Background
- Challenges
- Data Visualization Resources
- Ten Practical Tips with Examples
- Questions

DePaul Background

- Founded in 1898 in Chicago, IL
- Largest Catholic and eighth largest private non-profit university in the nation.
 - Enrollment of over 25,000 students in Fall 2010
 - From 1990 to 2010, DePaul's enrollment grew by 60%
- 9 colleges and 6 campuses in Chicagoland area
- Diverse student body
 - 36% first-generation freshmen, and 25% students of color
 - 25% of undergraduates are over the age of 24



Challenge

Synthesize your information and create clear graphics that provide quicker access to meaningful insights.





Data Visualization Resources

Edward Tufte

The Visual Display of Quantitative Information. Second Edition.
 Graphics Press, 2001.

Stephen Few

- Now You See It: Simple Visualization Techniques for Quantitative Analysis. Analytics Press, 2009.
- Show Me the Numbers: Designing Tables and Graphs to Enlighten. Analytics Press, 2004.

Stephen Kosslyn

Graph Design for the Eye and Mind. Oxford University Press,
 2006.

- 1. Define the research question
- 2. Select the most effective chart type
- 3. Don't make the audience work too hard
- 4. Remove chartjunk
- 5. Use color effectively
- 6. Create clear titles and legends
- 7. Use clear and consistent fonts
- 8. Develop easy to read tables
- 9. Look for additional ways to add insight
- 10. Test for understanding

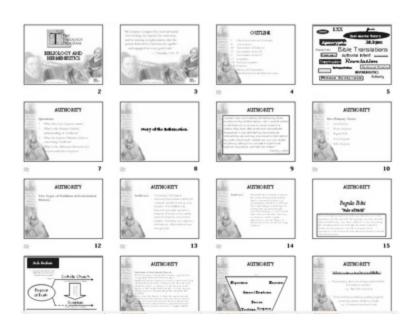
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Create an outline for your presentation Be specific and write it down!

Don't

Profile of Incoming Freshmen



Do

How does the Fall 2011 incoming freshman class compare to last year on demographic and academic variables?

Undergraduate Students Overall

Freshman Overall

Demographics

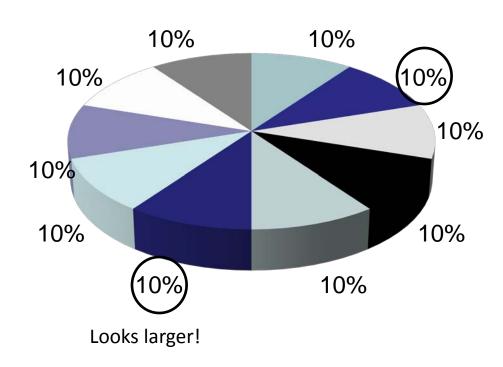
Academics

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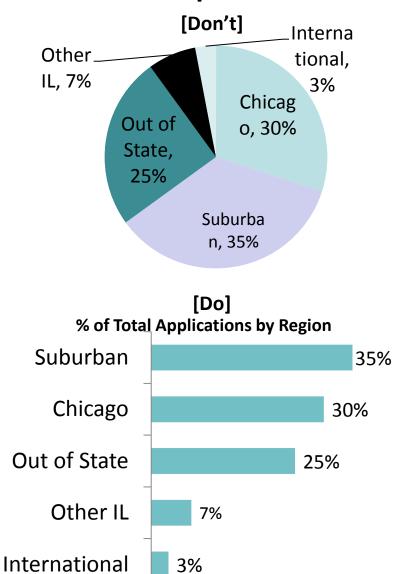


Pie charts are rarely the best option

Avoid 3-D pie charts

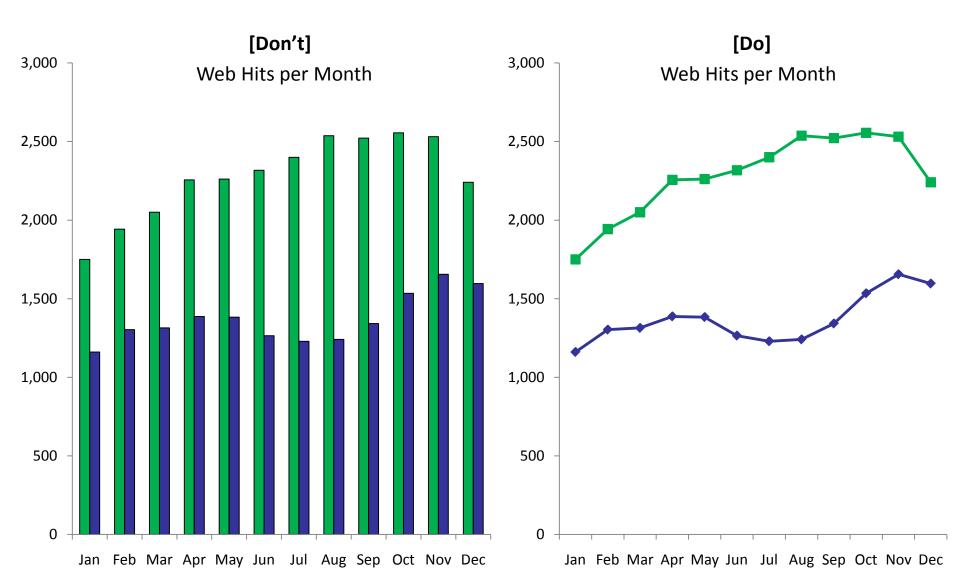


Numbers used in this presentation are for illustration purposes only.



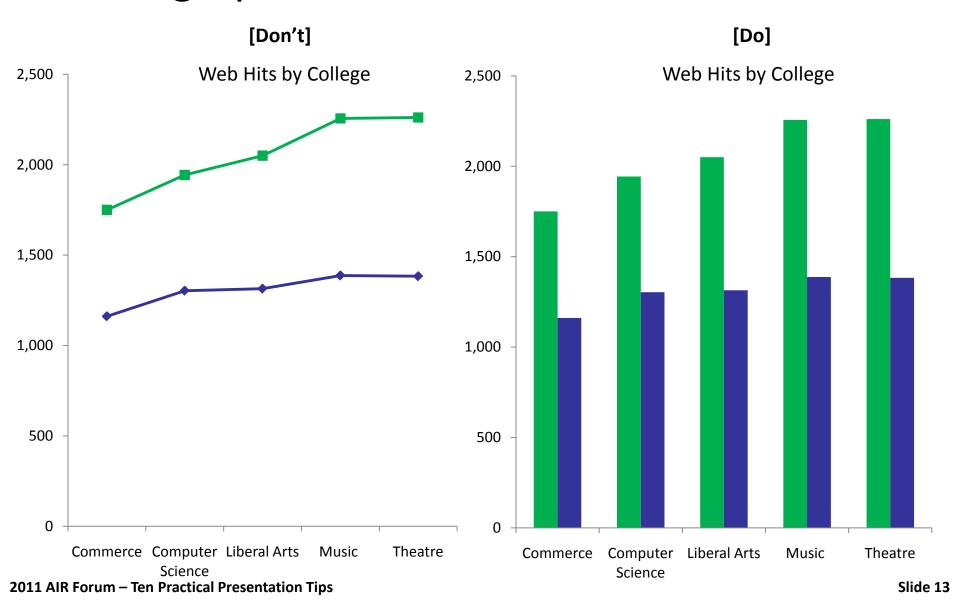


Line charts show trends and interactions





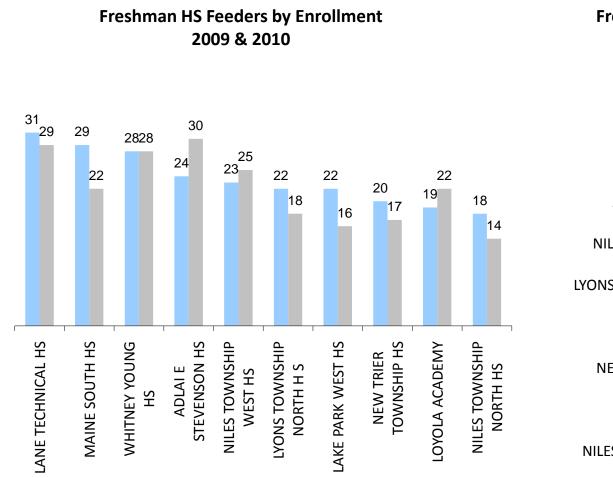
Use bar graphs when the scale is not continuous



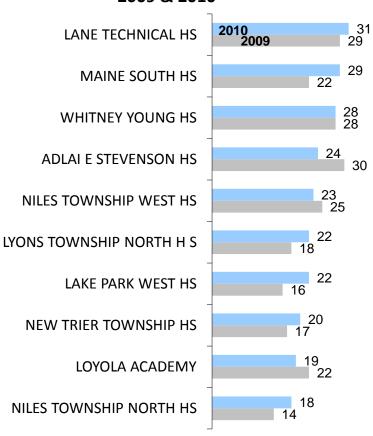


Horizontal bar charts work best for long labels

[Don't] [Do]



Freshman HS Feeders by Enrollment 2009 & 2010



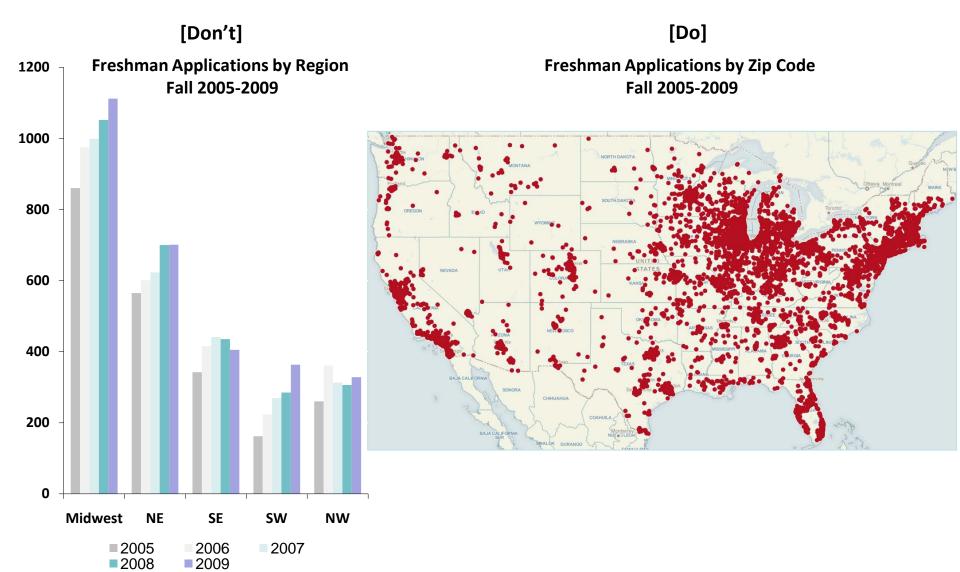


Tables are good for showing specific values

Freshmen												
	Apps			Admits			Deposits			Enrollments		
College	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg
Commerce	2,509	2,922	16%	1,923	2,066	7%	864	867	0%	793	756	-5%
Music	498	605	21%	407	486	19%	153	170	10%	127	150	18%
СТІ	598	693	16%	419	397	-5%	210	178	-15%	198	158	-20%
Education	703	894	27%	480	532	11%	162	175	8%	135	148	10%
LA&S	4,983	5,975	20%	3,753	4,101	9%	1,313	1,362	4%	1,133	1,156	2%
TOTAL	9,291	11,089	19%	6,982	7,582	8%	2,702	2,752	2%	2,386	2,368	-1%



Maps clearly visualize regions or territories



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Do the pre-work for the audience

Focus only on the main points

 Organize slides to support main points

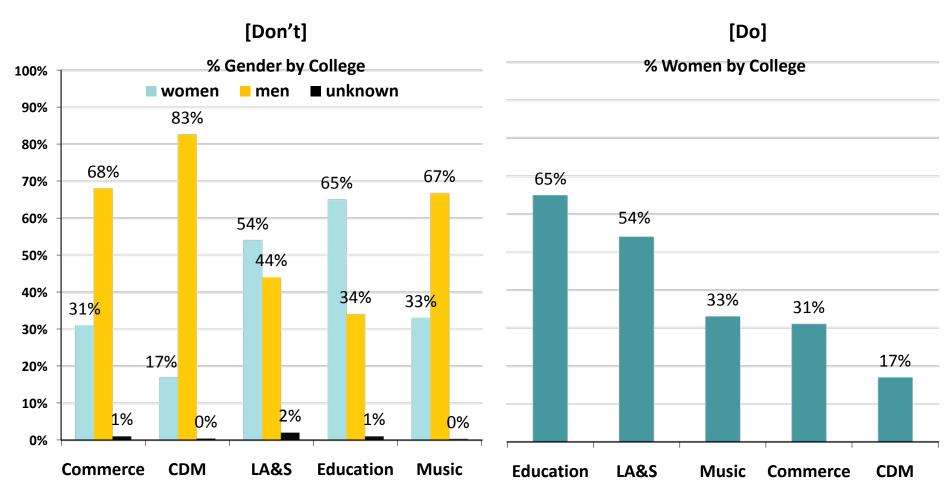
 Use only relevant information on slides





Remove irrelevant information

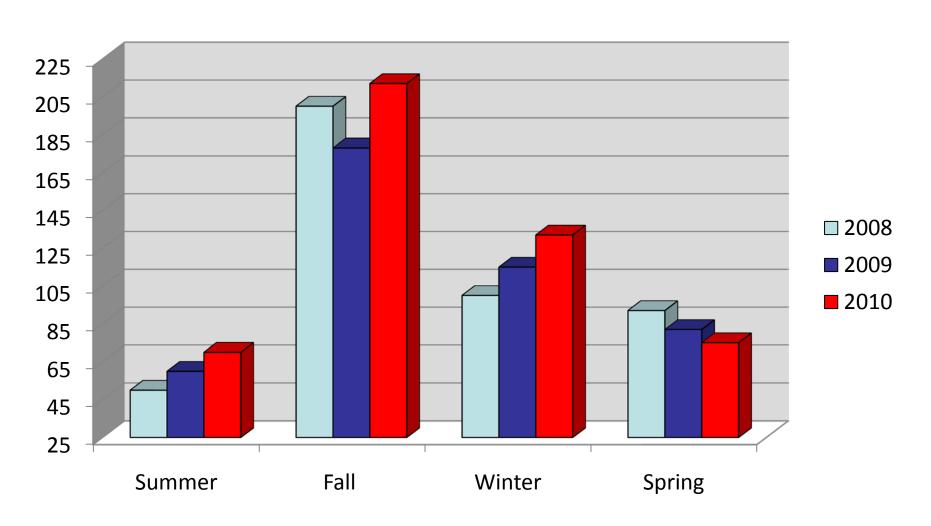
Which college has the highest proportion of women?



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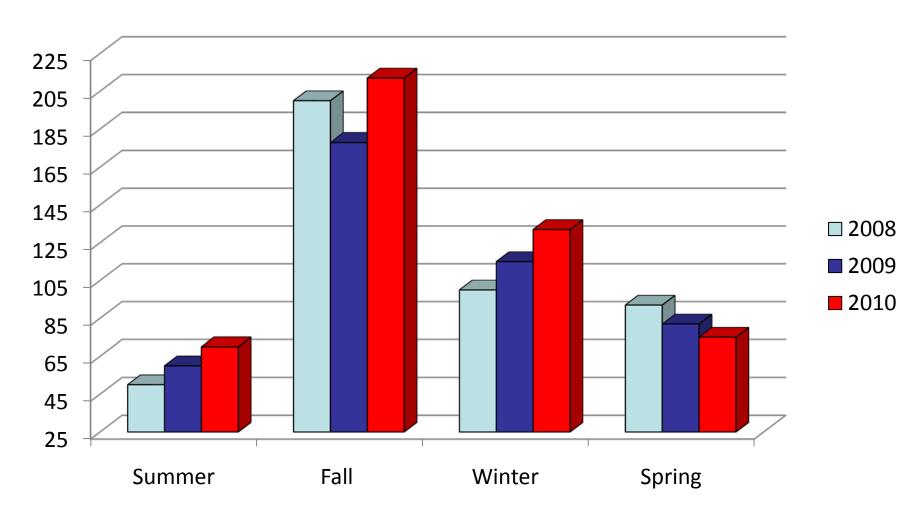


Typical default chart in PowerPoint



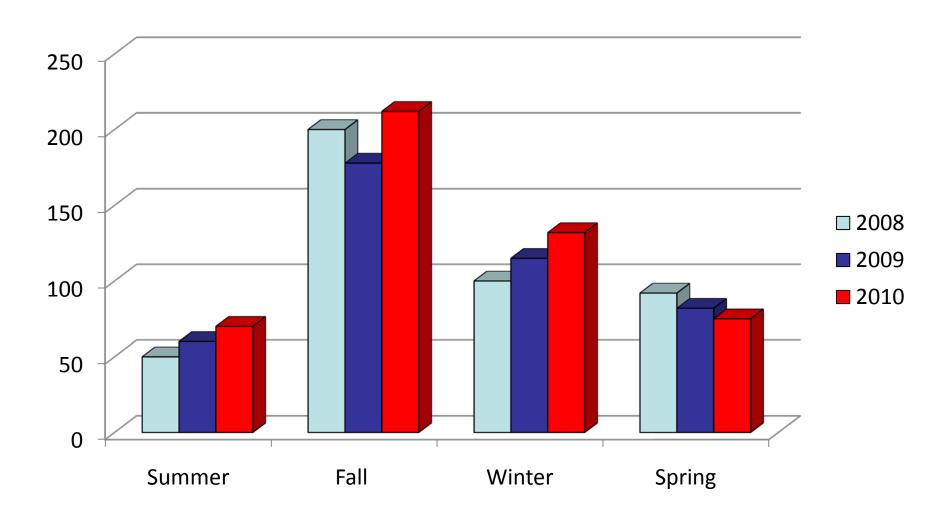


Change background to white



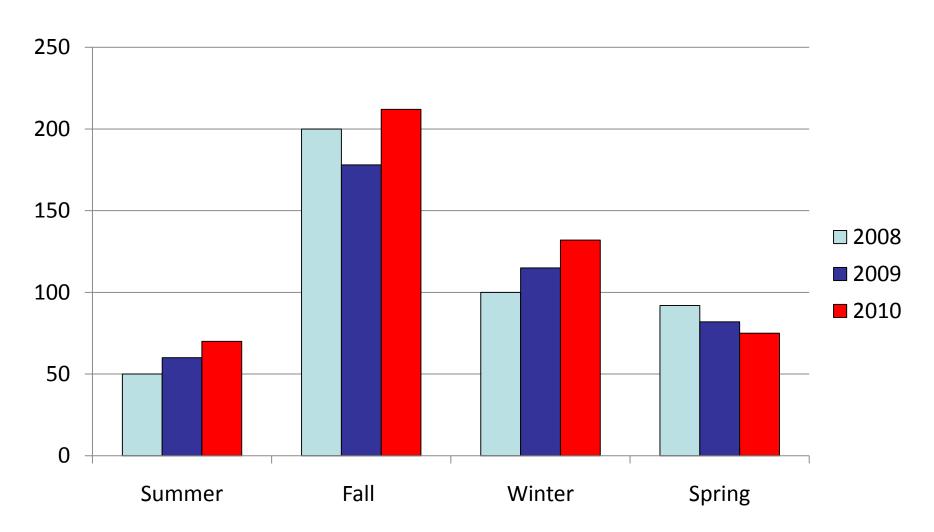


Set vertical axis to zero



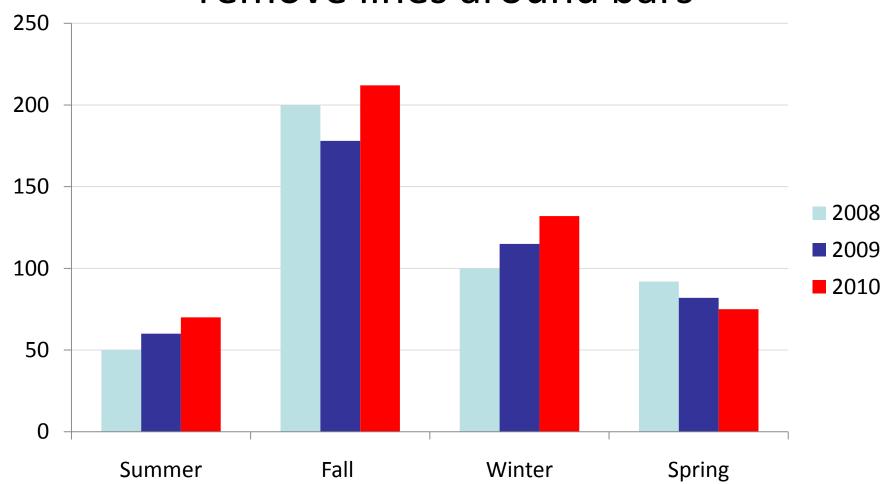


Remove 3-D





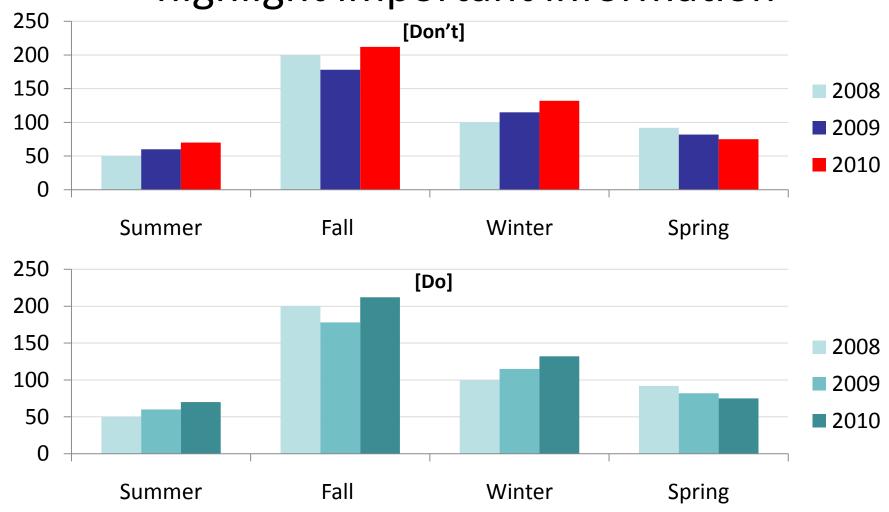
Tone down background gridlines and remove lines around bars



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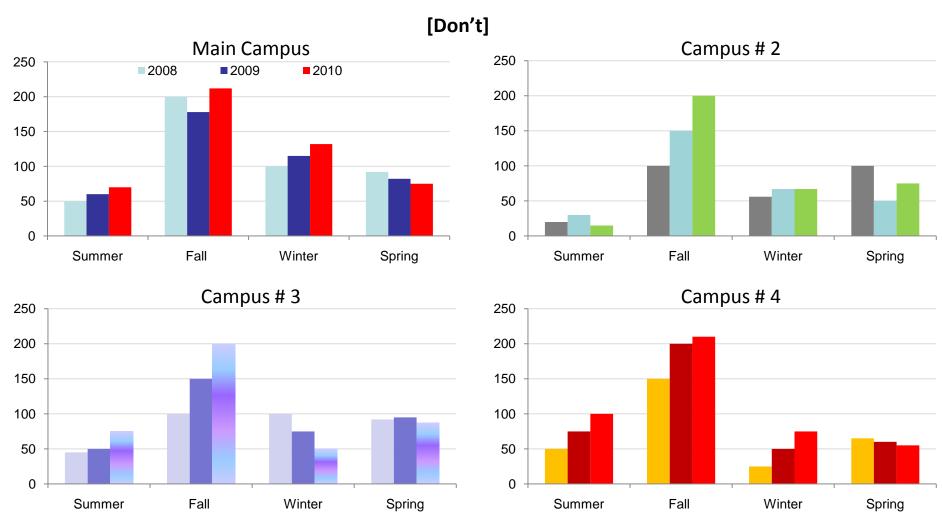


Select one color and use darker hue to highlight important information



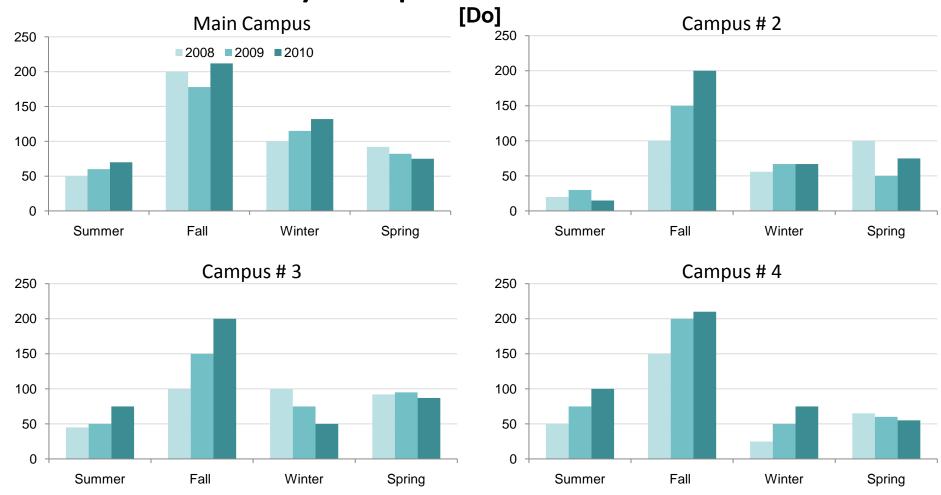


Different color schemes are distracting





Use the same color scheme throughout your presentation





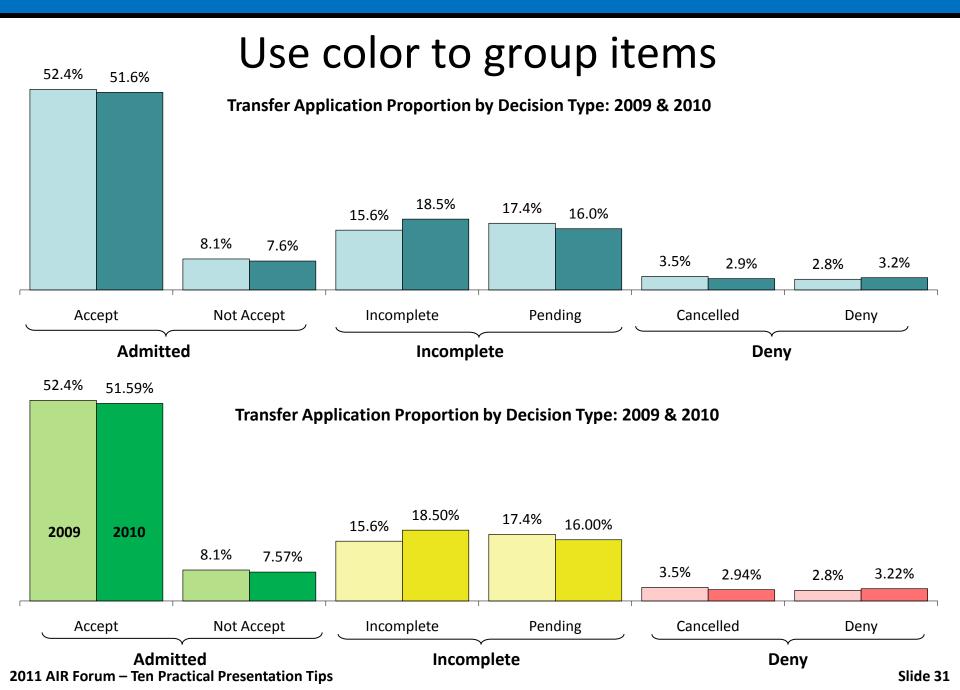
Be careful not to mix colors with their standard associations.

YELLOW BLUE ORANGE
BLACK RED GREEN
PURPLE YELLOW RED
ORANGE GREEN BLACK
BLUE RED PURPLE
GREEN BLUE ORANGE



Increase 25%



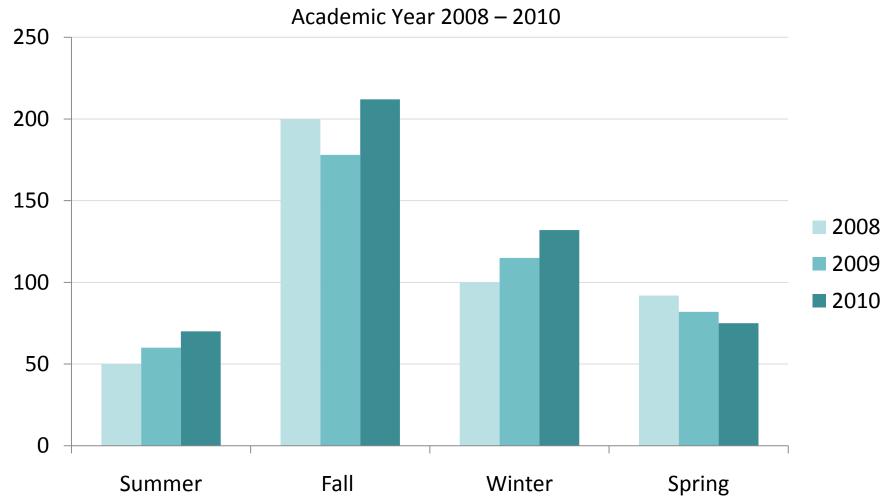


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What does this chart show?

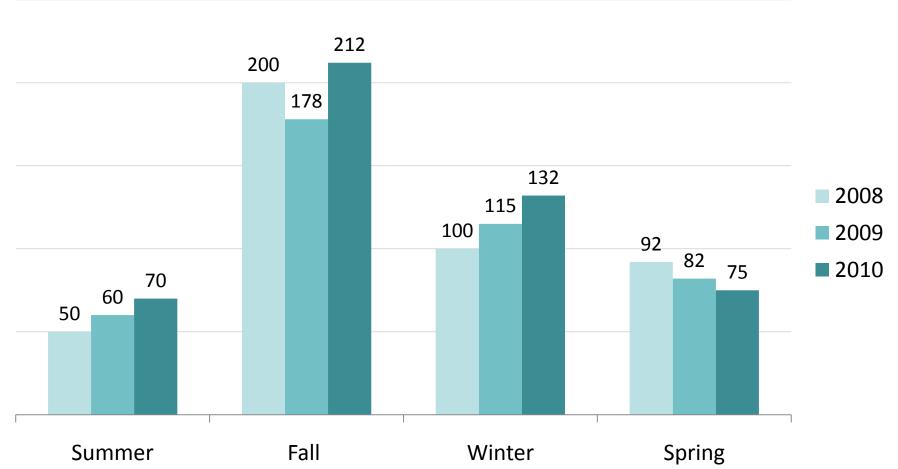
DePaul Undergraduate Hispanic Enrollment by Year Academic Year 2008 – 2010





Include clear and legible data labels

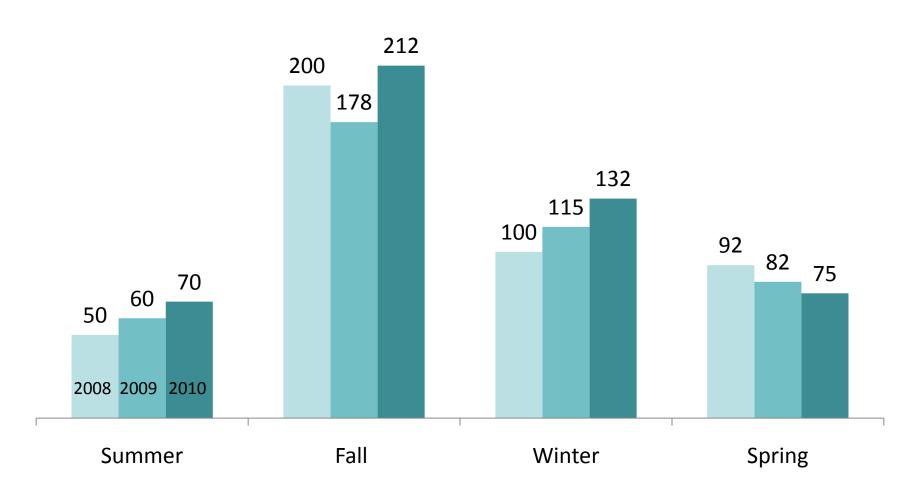
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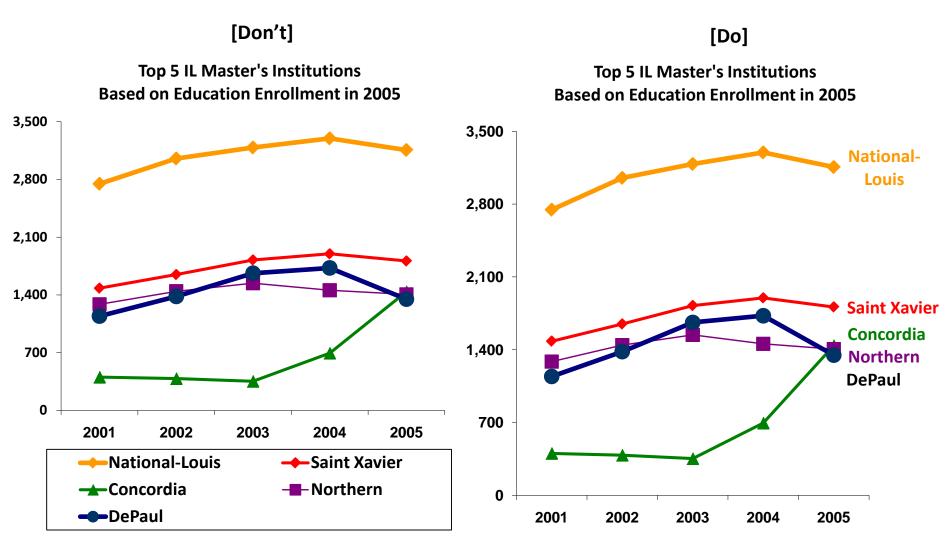
Put the legend as close to the data as possible

DePaul Undergraduate Hispanic Enrollment by Year Academic Year 2008 – 2010





Place labels directly next to the lines.



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Guidelines for fonts

- DON'T USE ALL UPPERCASE or all italics or all bold
- Only change color for emphasis or to group words together
- Underlined text can be hard to read
- · Don't use fancy fonts
- Make sure font is large enough to read easily

Guidelines for fonts

Use either serif or sans serif fonts, but use consistently

Bell MT Bodoni Courier New Garamond Georgia Goudy Old Style Arial
Century Gothic
Franklin Gothic
Gill Sans
Lucida Sans
Tahoma
Trebuchet
Verdana

Don't use busy backgrounds!

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Scan down

Freshmen													
		Apps		Admits			Deposits			Enrollments			
College	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg	
Commerce	2,509	2,922	16%	1,923	2,066	7%	864	867	0%	793	756	-5%	
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LA&S	4,983	5,975	20%	3,753	4,101	9%	1,313	1,362	4%	1,133	1,156	2%	
Total	9,291	11,089	19%	6,982	7,582	9%	2,702	2,752	2%	2,386	2,368	-1%	

Scan across

	Freshmen													
	Apps			Admits			Deposits			Enrollments				
College	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg	2006	2007	% Chg		
Commerce	2,509	2,922	16%	1,923	2,066	7%	864	867	0%	793	756	-5%		
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Align headers and limit color

[Don't]

2009 Spri	ng Quart	er: All Stude	ents							
Headcour	its									
		2009	2008	1-Year	2008	2008	2008	2008	2009	2009
		YTD	YTD	Comparison	FINAL	% of Final	Budget	YTD%of	Budget	YTD%of
College	Career	(3/6/2009)	(3/6/2008)	#	(4/28/2008)			Budget		Budget
Commerce	UGRD	4,000	3,900	100	4,000	100.00%	4,100	97.56%	4,200	92.86%
KGSB	GRAD	2,000	1,800	200	2,000	100.00%	2,000	100.00%	2,200	81.82%
	All	6,000	5,700	300	6,000	100.00%	6,100	38 38%	6,400	88.06%
Communic	UGRD	900	1000	-100	1,000	90.00%	1,000	90.00%	1000	100.00%
	GRAD	150	200	-50	250	60.00%	200	75.00%	200	100.00%
	All	1,050	1,200	-150	1,250	84.00%	1,200	87.50%	1200	100.00%
CDM	UGRD	50	100	-50	150	33.33%	100	50.00%	100	100.00%
	GRAD	1,500	1,000	500	1,500	100.00%	2,000	75.00%	1,800	55.56%
	All	1,550	1,100	450	1,650	93.94%	2,100	73.88%	1,900	57.88%

[Do]

Year-to-Date/Budgeted Headcount - All Students

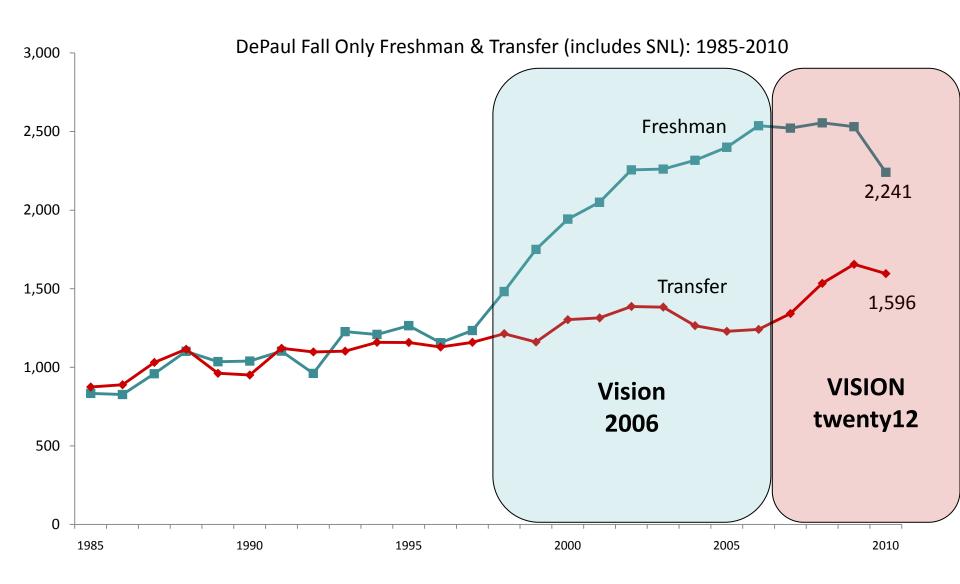
Final Spring 2011 Enrollment Update Report March 6, 2009



						Revenue									
		2008	2009	2008-2	009 Chg	2008 Final %	2008	2008 %	2009	2009 %	2009	2009	% from	% of	
		(3/6/2008)	(3/6/2009)	#	%	(4/17/2010)	of Final	Budget	of Budget	Budget	of Budget	Budget	(3/6/2009)	Budget	Univ Total
Commerce	ugrd	3,900	4,000	100	2.6%	4,000	97.5%	4,100	95.1%	4,200	95.2%	\$3,000,000	\$2,900,000	-3.3%	4.1%
	grad	1,800	2,000	200	11.1%	2,000	90.0%	2,000	90.0%	2,200	90.9%	\$1,100,000	\$1,200,000	9.1%	1.7%
		5,700	6,000	300	5.3%	6,000	95.0%	6,100	93.4%	6,400	93.8%	\$48,299,142	\$46,216,270	-4.3%	65.6%
Communication	ugrd	1,000	900	-100	-10.0%	1,000	100.0%	1,000	100.0%	1,000	90.0%	\$1,000,000	\$900,000	-10.0%	1.3%
	grad	200	150	-50	-25.0%	250	80.0%	200	100.0%	200	75.0%	\$500,000	\$480,000	-4.0%	0.7%
		1,200	1,050	-150	-12.5%	1,250	96.0%	1,200	100.0%	1,200	87.5%	\$15,605,151	\$14,781,801	-5.3%	21.0%
CDM	ugrd	100	50	-50	-50.0%	150	66.7%	100	100.0%	100	50.0%	\$7,000,000	\$6,700,000	-4.3%	9.5%
	grad	1,000	1,500	500	50.0%	1,500	66.7%	2,000	50.0%	1,800	83.3%	\$5,000,000	\$4,000,000	-20.0%	5.7%
		1,100	1,550	450	40.9%	1,650	66.7%	2,100	52.4%	1,900	81.6%	\$17,978,529	\$19,240,891	7.0%	27.3%

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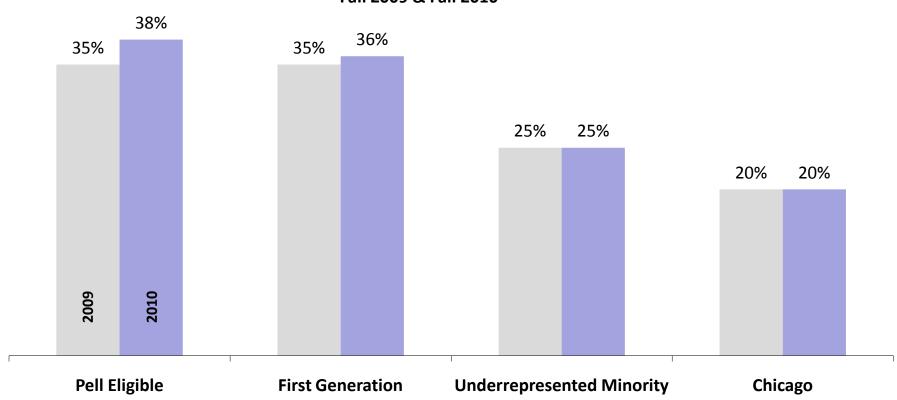




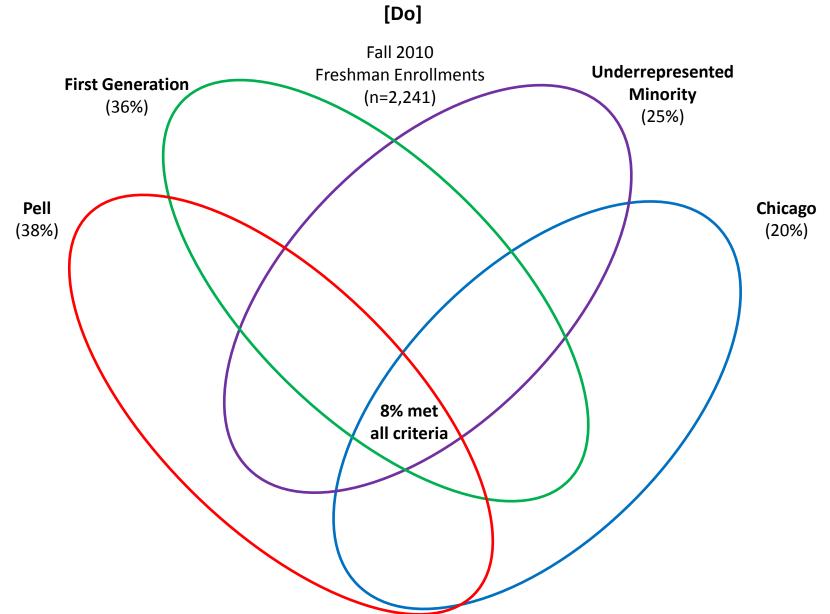
■

[Don't]

Percentage of Freshman Enrollments by Mission Student Factors
Fall 2009 & Fall 2010







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What are the main takeaways?

Are the slides clear and understandable?

Does the presentation tell the story effectively?

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For more information...

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