

Beamer Basics

L^AT_EX Workshop 2

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► Return

This handout borrows heavily from the department's 2010 L^AT_EX handout and Simon Haeder's previous Beamer working example

Getting Beamer

Beamer Me Up, Scotty!

To use Beamer, you must obtain the beamer document class and several packages. These can be downloaded at:

<http://sourceforge.net/projects/latex-beamer/>

WinEdt should be able to automatically download any missing packages. MikTeX also has them.



How Beamer Works

Beamer functions much like any other \LaTeX document, but it has its own special document class

```
\documentclass{beamer}
```

Many of the commands remain the same, but some may vary. In many cases, however, you are able to simply copy and paste things from your other \LaTeX documents right into Beamer with only minor reformatting.



Class (Warfare) Options

Just like for other document classes, Beamer has several options:

- ▶ Font sizes [10pt]
- ▶ Transparencies [trans]
- ▶ Handouts [handout]

Example:

```
\documentclass[handout]{beamer}
```



Themes

Beamer comes a variety of presentation themes or design templates.

```
\usetheme{Hannover}
```

These will automatically create the style features of your presentation. . . . *You can build your own themes.*



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Themes

Want to see these in action? Go to
<http://www.hartwork.org/beamer-theme-matrix/>

Available Themes

- | | | |
|--------------|---------------|---------------|
| ▶ Antibes | ▶ Dresden | ▶ Malmoe |
| ▶ Bergen | ▶ Frankfurt | ▶ Marburg |
| ▶ Berkeley | ▶ Goettingen | ▶ Montpellier |
| ▶ Berlin | ▶ Hannover | ▶ Paloalto |
| ▶ Boadilla | ▶ Ilmenau | ▶ Pittsburgh |
| ▶ Copenhagen | ▶ Juanlespins | ▶ Rochester |
| ▶ Darmstadt | ▶ Madrid | ▶ Singapore |



Colors

Beamer allows you to set the color for all elements in your frames.

You can either create your own color scheme:

```
\usecolortheme[rgb={0,.5,.5}]{structure}
```

Or use a pre-packaged one:

```
\usecolortheme{seagull}
```



Color Themes

Available Color Themes

- ▶ albatross
- ▶ crane
- ▶ beetle
- ▶ dove
- ▶ fly
- ▶ seagull
- ▶ wolverine
- ▶ beaver

These are also available for viewing on the aforementioned Beamer Theme Matrix.



Fonts

Beamer allows you to set the font for your document. Beamer's default font is sans serif. But you can change that:

```
\usefonttheme{serif}
```

You can also set separate fonts for different functions. For example:

```
\documentclass[mathserif, xcolor=svgnames]{beamer}
```

```
\usepackage{eulervm}
```



Innies Versus Outies

You can also modify both the inner and the outer themes and colors.

- ▶ Inner themes and colors refer to things inside the frames
- ▶ Outer themes and colors refer to the headline, footline, sidebars, logo, and frame title



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Inner and Outer Themes

Inner Color Themes

- ▶ lily
- ▶ orchid
- ▶ rose

Outer Color Themes

- ▶ whale
- ▶ seahorse
- ▶ dolphin



Framing Your Argument

Here's what a basic Beamer frame looks like:

```
\begin{frame}[option] {Title} {Subtitle}
```

Stuff goes in here

```
\end{frame}
```



A Frame Divided

You can divide a frame into two separate columns using the columns environment.

```
\begin{frame}
\begin{columns}

\begin{column}{5cm}
This stuff will appear in the first column.
\end{column}

\begin{column}{5cm}
This stuff will appear in the second column.
\end{column}

\end{columns}

\end{frame}
```



What kinds of things can go into frames?

- ▶ Text
- ▶ Lists/Bullet points
- ▶ Tables
- ▶ Figures
- ▶ Equations
- ▶ Movies
- ▶ Bucky
- ▶ Puppies



What kinds of things can go into frames?

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Beamer's List

Lists or bullet points in Beamer work just the same as in other documents.

- ▶ Itemize environment
- ▶ Enumerate environment
- ▶ Describe environment

But you can also number your items so they appear one at a time

- ▶ This one will be highlighted `\item<1>`
- ▶ Wait? Where did the first one go? `\item<1>`

Or have them revealed one at a time

- ▶ Let the suspense build . . . `\item<1 ->`
- ▶ then reveal your brilliance `\item<2 ->`

The numbering tells Beamer when the bullet will appear.



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A Side Note on the Description Environment

First Item Description of first item

Second Item Description of second item

Third Item Description of third item

Forth Item Description of forth item



Example City (for all your example needs)

Matt's To Do List:

1. Bike for salvation
2. Shower my sins away
3. Work on dissertation
 - 3.1 Feel more depressed
4. Have awkward meeting with adviser
 - 4.1 Feel depressed
5. Drink sorrows away
6. Sleep/Pass out
7. Repeat

```
\begin{enumerate}
\item<2 -> Bike for salvation
\item<3 -> Shower my sins away
\item<6 -> Work on dissertation
\begin{enumerate}
\item<7 -> Feel more depressed
\end{enumerate}
\item<4 -> Have awkward meeting with adv
\begin{enumerate}
\item<5 -> Feel depressed
\end{enumerate}
\item<8 -> Drink sorrows away
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\end{enumerate}
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\end{enumerate}
```



Tables

x_i	\bar{x}	$x_i - \bar{x}$	$(x_i - \bar{x})^2$
62	54.9	7.1	50.41
53	54.9	-1.9	3.61
81	54.9	26.1	681.21
47	54.9	-7.9	62.41
56	54.9	1.1	1.21
39	54.9	-15.9	252.81
45	54.9	-9.9	98.01
59	54.9	4.1	16.81
47	54.9	-7.9	62.41
60	54.9	5.1	26.01
Σ		0	1254.9

```
\begin{center} \begin{small}
\begin{tabular}{rrrr} \addlinespace[5pt]
\multicolumn{1}{c}{ $x_i$ } & \multicolumn{1}{c}{ $\bar{x}$ } & \multicolumn{1}{c}{ $x_i - \bar{x}$ } & \multicolumn{1}{c}{ $(x_i - \bar{x})^2$ } \\
62 & 54.9 & 7.1 & 50.41 \\
53 & 54.9 & -1.9 & 3.61 \\
81 & 54.9 & 26.1 & 681.21 \\
47 & 54.9 & -7.9 & 62.41 \\
56 & 54.9 & 1.1 & 1.21 \\
39 & 54.9 & -15.9 & 252.81 \\
45 & 54.9 & -9.9 & 98.01 \\
59 & 54.9 & 4.1 & 16.81 \\
47 & 54.9 & -7.9 & 62.41 \\
60 & 54.9 & 5.1 & 26.01 \\
\midrule
\multicolumn{1}{c}{ $\Sigma$ } & & 0 & 1254.9 \\
\bottomrule[1.5pt]
\end{tabular} \end{small} \end{center}
```


Blocks

Introduction to \LaTeX

"Beamer is a \LaTeX class for creating presentations that are held using a projector..."



Other Block Environments

Other Block Environments

Content Type	Corresponding Environment
Generic	block
Theorems	theorem
Lemmas	lemma
Proofs	proof
Corollaries	corollary
Examples	example
Highlighted Title	alertblock



Defining Your Own Block Environment

As with basically everything else in \LaTeX and Beamer, you can define your own block environment.

Questions

My research question??

```
\newtheorem{ex}{Example} \newtheorem{hyp}{Hypotheses}
```



Using Blocks and Columns

Column 1 Header

Column 1 Body Text

Column 2 Header

Column 2 Body Text



Text Boxes

Sample Text

Sample Text

Sample Text

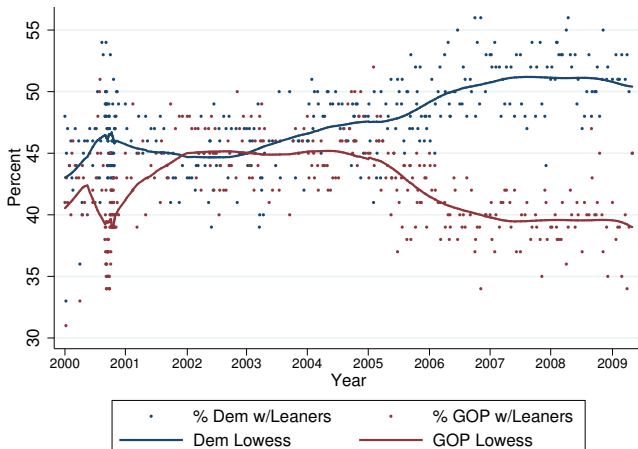
Sample Text

Sample Text



Figures

Figure: Party Identification, 2000-2009



Figures

```
\begin{figure}[h!]  
  \centering  
    \caption{Party Identification, 2000-2009}  
    \includegraphics[width=3.5in]{pid_0009_gallup.eps}  
\end{figure}
```



Equations

You use the equations environment in Beamer just like in other documents.

$$p(A|B) = \frac{p(A)}{p(B)}p(B|A) \quad (1)$$

You can also do neat stuff using the block environment.

An Equation in a Box!

$$p(A|B) = \frac{p(A)}{p(B)}p(B|A) \quad (2)$$



Logos

How did I get Bucky to appear in every frame?

```
\logo{\includegraphics[height=2cm]{bucky}}
```



Note to Self

You can include notes to yourself about particular slides or parts of slides.

```
\note[option]{notetext}
```

Your notes will not appear unless you tell them to appear. In the preamble, include `\setbeameroption{show notes}` in your preamble, and the notes will appear on a separate slide immediately following.

- ▶ Cultural Anthropologists
- ▶ Political Scientists
- ▶ Economists



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Beamer Basics

└ Inside the Frame

└ Note to Self

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1. Tell joke about economists.
2. Make it short.
3. Pause for laughter.

Hyperlinks

What happens when your links have too much sugar

You can add hyperlinks to your presentations to allow for nonlinear jumps in your presentations.

```
\begin{frame}[label=targetname]  
\hyperlink{targetname}{text}
```

▶ Jump to first slide

▶ Jump to second slide

▶ Jump to figure slide

Jump to the list slide on the third bullet

Commands for making fancy buttons:

```
\beamerbutton{text}  
\beamergotobutton{text}
```

You can also do hyperlinks to external websites, like this one.

Final Thoughts

- ▶ Beamer isn't for everybody or everything
- ▶ There's a lot more to Beamer
- ▶ Other Useful Resources:
 - ▶ \LaTeX Handbook
 - ▶ Beamer Class User Guide
 - ▶ <http://www.math.umbc.edu/~rouben/beamer/>

