In this session, we'll look at some ways to enhance the communications value of your slides and some tips to avoid humiliation.

The standard presentation software for most scientific talks is MS PowerPoint. Like it or hate it, that's what nearly all AV systems at conferences are set up to use. If you are determined to be an iconoclast and use some other presentation software, fine, but be prepared for last-minute technical difficulties that will annoy your colleagues and cut into your presentation time. If you demand to use something other than PPT, take along a PDF version of your talk on a memory stick that you can use when the computer in the seminar room can't run Photoshop or LibreOffice.

Alexei Kaptarev's *Death by Powerpoint* is an Internet classic not to be missed: http://www.slideshare.net/thecroaker/death-by-powerpoint/
I recommend turning off the “bullet list” format, which is the default in PPT. Presenting ideas in bulleted lists implies hierarchies or relationships that may not, in fact, exist.

“Lists can communicate only three logical relationships: sequence (first to last in time), priority (least to most important, or vice versa), or simple membership in a set (these items relate to one another in some way, but the nature of that relationship remains unstated). A list can show only one of those relationships at a time.” Gordon Shaw, Robert Brown, Philip Bromiley, “Strategic Stories: How 3M is Rewriting Business Planning,” Harvard Business Review 76, 42–44 (1998).

Turning off the bullets also gives you more slide real estate to work with.
The default for PowerPoint slide “titles” is centered. Change it to left-justified.

Turn off the automatic “fitting” functions in PPT to avoid having PPT reduce your font size if you exceed the number of characters MS thinks you should have on a line.

In PPT 2003, on the “Tools” menu, click on the “AutoCorrect Options” tab, then select “Autoformat as you type” tab, and uncheck the two “AutoFit” options in the “Apply as you type” list.

In PPT 2010, right click inside the text box, then select “Format Shape” from the drop-down menu. In the dialogue box, click on “Text Box” on the left navbar, and then turn on the “Do not Autofit” radio button in the “Autofit” section.
Choose an easy-to-read font (40 pt)
Make sure your audience (36 pt)
Can easily read (32 pt)
Every one of your slides (28 pt)
From the back of the room (24 pt)
See what I mean? (14 pt)

Tip: The bigger the room—the bigger the font

You can use the “Master Slide” to format text on all slides. To get to the master slide in PPT 2003, click Shift+the slide icon in the lower left corner of the workspace, or use the “View” menu. To get out of “master slide” view, click CRTL+ the slide icon.

To get to the master slide in PPT 2010, click Shift+the slide icon in the lower right corner of the workspace, or use the “View” ribbon. To get out of “master slide” view, click CRTL+ the slide icon.
Use a simple sans serif font

Serif fonts don’t project as well, because the narrow parts tend to fade away

Eschew wimpy fonts (including Comic Sans*)

Use one main font color and, at most, one contrasting font color for emphasis

Use one main font and, at most, one contrasting font for emphasis

Use mixed upper and lower case for text—writing in all caps looks like you’re shouting (and it’s much harder to read—and proofread!) *or risk professional ridicule

Keep text to a minimum—use just enough words to orient the audience to what they are seeing. You want them to be listening to you, not reading a novella off the screen.

Do as I say, not as a do. This slide, while typical of an academic lecture to facilitate note-taking, has w-a-a-a-a-a-y too much text on it for a science talk.
“Embed” special fonts in PPT to avoid embarrassing surprises at the conference

The Strickler–Berg relation opens the door for comparing measured spectral quantities

\[ \frac{1}{\tau_0} - 2.880 \times 10^{-9} n^2 \left\langle \nu_f^{-3} \right\rangle \int \frac{c(\nu) \ln \nu}{\Delta \nu_a} \]

Different computer—Voilà! Pencils!

The Strickler–Berg relation opens the door for comparing measured spectral quantities

\[ \frac{1}{\tau_0} = (\text{arr} \times 10^{15}) + (n^2 + 1)^{-1} \]

Every computer has its own individual “library” of fonts; if PPT cannot find a font when you open your presentation on a different machine, it just arbitrarily substitutes a font that it thinks is “close.” Often, it isn’t...
To embed fonts in your PPT file:
(1). Open the document in PowerPoint
(2). Click on the “File” tab on the ribbon
(3). Click on the “Options” link on the left menu
(4). Click on the “Save” link
(5). Locate “Embed fonts in the file” option at the bottom of the dialogue box
(6). Click in the check box to turn on the option
Choose a neutral background and a high-contrast color for the text

| Use a light-colored background with dark text |
| Use a dark background with light text |
| This isn’t high-enough contrast |
| Neither is this |
| Don’t ever put red on blue |
| Or blue on red |
| And avoid using gradient fills, too |

Be aware that colors that look bright and crisp on your monitor may look entirely different when projected. In particular, pastel colors and thin lines fade away. Use bright, primary colors, bold fonts, and thick lines.
Don’t use photographic or “fill” backgrounds—just don’t do it. They’re distracting, they get boring after you’ve seen the first one, and the superimposed text is often impossible to read on them.
You want the audience to be thinking about what you’re saying and looking at the evidence you’re presenting, not swooning (or snickering) over your artistic taste.
Don’t use red or green to convey important information*

If you use color to convey information, make sure that information transfers as you intended it and is accessible to everyone in your audience.

Another good resource is http://www.colourblindawareness.org/colour-blindness/.

*Between 8 and 12 percent of white males are red-green colorblind—who’s your audience?
To see what your image will look like to someone who is color blind, upload your image to the free emulator at http://www.color-blindness.com/coblis-color-blindness-simulator/.

Another great resource, including step-by-step instructions for labeling fluorescent microscope images and data plots so they can be distinguished by colorblind people: http://jfly.iam.u-tokyo.ac.jp/color/.
To make a line break without starting a new item, press Shift+space bar. Don’t maroon a number at the end of a line and put the unit on the next line!

Use the “Order” command on the “Draw” toolbar in PPT 2003 to arrange text and figures in layers. In PPT 2010, right click on the item you want to arrange and then click on the arrow to the left of the “Send to Back” or “Bring to Front” options to arrange layers.

Extra text boxes don’t cost anything. You can use more than one on a slide.
Here’s how I would improve the previous slide.

• Add a motivating statement at the top of the slide.
• Make the obligatory aerial photo of the accelerator smaller and stick it at the lower right of the slide, to convey to the audience that the image is not important.
• Turn off the bullets and tighten up the prose to reduce the number of lines of text.
• Use the additional space you’ve freed up to show a cartoon of the physical process, a schematic of the beamline, and the energy spectra of the photons, and put those images at the top of the slide to emphasize them.

If you just have to show the obligatory aerial photo of the accelerator, make it smaller, move it off center-stage, and crop to emphasize the ring, not the surrounding countryside. A scale would be really nice, but although I found 48 different aerial photographs of SPring-8 on the Internet, not one showed how big it is. A label superimposed on the photo that shows where LEPS is located on the ring would be a good addition, too.

Some technical-editing changes:

• A hyphen is required between 8 and GeV in the first line, 351 and nm in the second line, and 1.5 and GeV and 2.4 and GeV in the last line of text. In every case, the number is combined with the unit to make an adjective that describes the size of the following noun; you indicate that it’s an adjective by hyphenating the two components.
• The abbreviation for “ultraviolet” (and infrared) is always written lower case.
• Provide both lower and upper units for numbers in a range.
• Indicate a range by an en dash, not a hyphen.

When you present an audience with a complicated slide like this one, they don’t know what to look at first and they try to look at everything instead of listening to you. Control their attention by using animations to present bits of information one at a time, synchronized with what you are saying.

Using animations requires practice and rehearsal—we’ve all forgotten about an animation and then were surprised when something popped up when we were expecting that click to bring up the next slide. (And we always give it away by mumbling “Oops, I forgot about that…”)

Mark up your “notes” pages to indicate animations so you can keep track of them as you are speaking.
You can “build” slides in one of two ways

Use PPT animation (learning curve)  Create multiple slides*

*Use the “Insert Duplicate Slide” tool for smooth builds

The animation tool gives you more control and offers a variety of special effects. However, like anything else, there’s a learning curve associated with it, and you’ll have to invest time to get good at it.

Creating multiple slides is easier—at least initially—and extra slides don’t cost a dime. For best results, do the first, stripped down slide, and then use the “insert duplicate slide” tool to make each subsequent slide. That way, you don’t have slight variations in the position of text and figures (which is distracting and annoying for the audience) when you switch from one slide to the next.

On the main toolbar in PPT, click on the “Insert” tab.
When the “Insert” ribbon comes up, click on the down arrow on the “New Slide” icon (first one on the far left), and scroll to the bottom of the menu to “Duplicate Selected Slides” and click on it. (I have no idea why MS uses this language; when you click on that item, PPT inserts a duplicate of the slide you are on—you cannot “select” multiple slides. <sigh>
You could point out features with your hand, but the monitors are often mounted on the wall across the room, above your head, or behind you, where you cannot easily reach them without really hopping around and distracting the audience.

Don’t try to use your laser pointer and then say, “Huh! The laser pointer doesn’t work. Wow! Now what do I do? Well, I guess you can see what I mean...”

USE THE MOUSE TO MOVE THE CURSOR and hope most people can see it.
To recap:

Turn off the bullets
Use motivating statements at the top of your slides, not bland, generic “titles”
Choose a neutral background
Use a sans serif font, at high contrast to the background, big enough to see from the back of the room
Embed your fonts!
Use color judiciously
Use animations to control the audience’s attention
Keep up with technology

Notes and Questions: