

Preparing Effective Slide Presentations

The following slide preparation tips are provided to help speakers prepare effective and readable presentations.

Too much on one slide!

Missing axis label.

Lack of contrast between background and text.

Inconsistent font and color.

Split up figure panels.

Figure text is too small.

Conclusions:

- Wide variation in the quality of U.S. genetics standards
- U.S. genetics standards are insufficient for preparing the next generation of genetic scientists

Table: % Students with Complete, Partial, and Unsatisfactory Answers

Theme	% Students with Complete Answers	% Students with Partial Answers	% Students with Unsatisfactory Answers
Reproduction	61	na	39
Theory of evolution	51	na	47
Evolutionary relationships	25	na	70
Genes	21	45	30
Mutations	2	33	58
Interpreting genetic material	1	1	83
Genetic disease	5	31	56
Recombinant DNA	8	27	58

Line Graph: College freshmen intending S&E major, by field: 1990-2008

Bar Chart: TIMSS scale average score-500

Country	Score
Singapore	567
Taiwan	561
Japan	554
South Korea	553
England	542
Hungary	539
Czech Republic	539
Slovenia	538
Hong Kong	530
Russia	530
United States	528

Diagram: Faculty Motivation

The diagram shows a flow from 'Incentives' (Intrinsic: Peer feedback, Qualification; Extrinsic: Promotion and tenure, Stipends) to 'Faculty Motivation' (represented by a bar chart), which leads to 'Scientists committed to working in K-12 classrooms'. A box for 'Other professional incentives' (APSL, AARP, AOB, AOCU) also points to 'Faculty Motivation'. A note mentions 'Knowledge and confidence via skill development'.

Avoid slides that look like this!

Each slide should be designed to be concise, uncluttered, and readable from a distance. Include only key words and phrases for visual reinforcement.

Common Presentation Issues Suggested Fix

Too much text

Can it be said instead of written? Is there a visual that can convey the same information? Use no more than six lines per slide, with each line containing no more than six words.

Too much information per slide	Each slide should convey one main idea. The audience should be able to take in the visual in 20 seconds or less. Information relevant to another idea should be moved to another slide. Irrelevant details should be excluded altogether.
Small text	No text should be smaller than 24 point, including text in an imported figure. If the figure text is not important, edit it out.
White or bright backgrounds	Use light (not white) text on a dark background to minimize visual fatigue.
Inconsistent fonts/colors/backgrounds	Use consistent fonts/colors/backgrounds to keep the focus on your science.
Absent labeling of graphical representations	Make sure each figure includes sufficient labeling for the audience to make sense of it, including axis labels for graphs.
Too many slides	Present only the ideas and science necessary to tell your story, not every experiment you have ever done. A 15-min presentation should have 10-12 slides.
Unnecessary animation	Animation should only be used to focus your audience's attention. Revealing one lane of a gel at a time as you discuss an experiment is appropriate. Swirling in every figure is not.
Red/green heatmaps or other visuals	Remember that those who are red/green colorblind cannot interpret figures that rely on distinguishing red and green. Use blue and yellow instead.
Using whole multi-panel figures on one slide	Multi-paneled figures should be split up for readability and to minimize distraction. Also see "Too much information per slide".
No storyline or narrative	Throwing experiments and data at an audience with no overarching narrative is a sure way to put people to sleep. Give your audience a story arc they can hold on to even if they miss the point of one of your experiments.
Presenting experiments strictly chronologically	Think about how to structure your talk so that an audience unfamiliar with your science will best grasp the ideas you are trying to convey. Chronological order may not be ideal.
Omitting the larger motivation for your work	Remember to state explicitly why your science is important and how it fits into a bigger picture.
Presenting unnecessary detail	Include only the details crucial to understanding your data. If someone is curious about your cell culture conditions, they will ask.
Turning away from the microphone	Face the audience and your microphone at all times when speaking.

Reading slides	There should not be enough text on your slides for you to read your presentation (see “Too much text”). Use the notes section of PowerPoint or bring notecards if you are afraid you will forget to say something important.
Flipping through slides too fast	This is usually tied to having too many slides, but also occurs when a speaker is nervous. Make a conscious effort to pause after advancing to your next slide.
Failing to orient the audience to a figure	You will lose the audience if you jump right into your data. Explain axes and any other relevant information about the figure before discussing the data it shows.
Running over into Q&A	Carefully time your presentation and cut slides if necessary.
Speaking unclearly (too fast, too low, mumbling)	Practice enunciating and remember to breathe while you are speaking.

Figure Guidelines

- Figures should be simple, with large lettering and clearly marked axes, etc.
- For figures created in charting programs and exported to a slide presentation program, be sure that the output fonts and line widths are legible once the image is scaled.
- If you have a complicated chart, it’s a good idea to add statistics directly onto the chart and to provide the details of the graph orally.

For more detailed guidance, visit <http://www.ibiology.org/ibioseminars/techniques/susan-mcconnell-part-1.html>. Note this video is approximately 45 minutes long.