Tips for Making Effective Presentations

Big Data Summer Immersion at Yale

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Yale SCHOOL OF PUBLIC HEALTH
Data Science and Data Equity

These slides summarize good presentation guidelines and tips that I have learned in my professional career and found helpful from select resources.

The leadership team at my previous company, an offshoot of Pfizer, took great care in training their employees to become better scientific communicators. In this slide deck, I am going to share with you some of what they taught us.

References

1. C. Anderson, "How to Give a Killer Presentation," Harvard Business Review, Jun. 2023, Accessed: Jun. 26, 2025. [Online]. Available: https://hbr.org/2013/06/how-to-give-a-killer-presentation
2. K. M. Naegle, "Ten simple rules for effective presentation slides," PLoS Computational Biology, vol. 17, no. 12, p. e1009554, Dec. 2021, doi: 10.1371/JOURNAL.PCBI.1009554.

Pointers

- Tell a story that frames the “why you did”, “what you did”, and “what is next” questions. Do not make the presentation a series of disjointed points.
- Tailor your message to your audience. Avoid jargon that overcomplicates the point.
- Keep your message on task, relevant, and succinct.
- Use color, animations, and other visuals when they’re necessary or convey something that supports your story and message. Don’t overuse them.
- Keep styling of figures and graphics consistent throughout the deck. If you color-code variables in plots, keep the color-coding scheme the same throughout.
- You audience should be able to quickly understand your slide. Use colors with high contrast, high quality images, and large text in readable font styles.
- Be careful about images that don’t scale (vector graphics). Text in them might not scale in a full-screen presentation. Overwrite image text in PowerPoint to avoid this.

Pointers

- If you use videos, make sure it works (sound if you need sound, etc.). Keep the video short, no more than 1 minute.
- Use one slide to convey one meaning/takeaway. Spend about 1 minute talking about each slide.
- The slide header should be a one-sentence takeaway, and not something general.
- Slides are not your talking notes. Do not read off the slides.
- Practice with an audience. Listen to and consider well meaning advice but decide for yourself what makes sense to implement.
- It's OK to get nervous, the audience expects this to happen. Breath and keep going.
- Try to make eye contact with people in your audience while you present but avoid staring at one person the whole time. Doing this improves audience engagement.
- **Effective presenting comes with a lot of practice.**

Original Slide

BACKGROUND

- SH2 domains are central to cell signaling networks that use tyrosine phosphorylation (pTyr)
  - PTB domains also bind pTyr ligands
- They bind ligands only when phosphorylation has occurred
  - This is regulated by the electrostatic interactions of an arginine in the SH2 domain binding pocket with the negatively charged phosphates on the tyrosine
- They discriminate between different ligand sequences via the remaining sequence around the pTyr, mostly on the C-terminal side of the pTyr
- There are 46,000 pTyr sites in the human proteome and 120 SH2 domains, meaning there are ~5.5e6 possible interactions in human cells

BACKGROUND

RULE 3,7,8

RULE 1

New Slide 1

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New Slide 2

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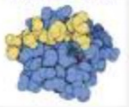
RULE 6. 7

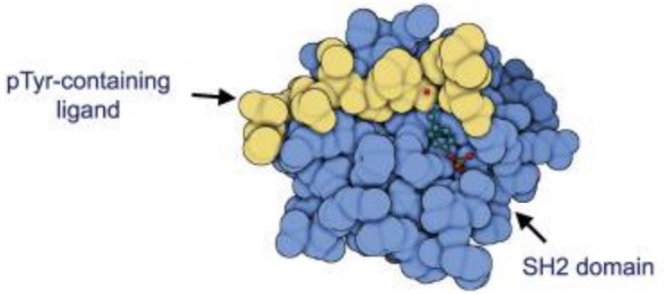


RULE 5

Structure: PDB 2IUI (Nolte et al., Nat Struct Biol, 1996)

New Slides

SH2 domains reversibly interact with phosphotyrosine (pTyr) ligands



Structure: PDB 2IUI (Nolte et al., Nat Struct Biol, 1996)

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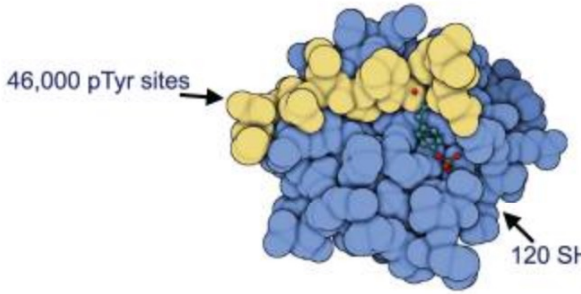

5.5 million possible interactions

Structure: PDB 2IUI (Nolte et al., Nat Struct Biol, 1996)

Ten simple rules for effective presentation slides Figure 1. Accessed June 28th, 2025.

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