Giving an Effective Scientific Presentation

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Overview

I. Why Present

II. What to Present
- Telling a scientific story
- Know your audience

III. How to Present
- Power point basics
- Presentation and Communication Skills

Why Present?

- Communicate your science beyond the lab
- Get Feedback from others
- Network
- Career Advancement
  - Grant proposals and job applications
  - Promotions
  - Grant renewals and progress reports
  - Establishing expertise in the field

Organizing your content

- Identify 1 or 2 overarching themes or questions
- Create an outline before preparing slides
- Start broad and progress to more specific
- Tell a story- logical, not chronological

Organizing your content

- Tailor to audience
  - What is the audience's existing knowledge on the topic?
  - What is the audience's goal? (CME vs. scientific information)
  - What is the audience's interest in the topic?
  - What are your goals for giving your talk to this audience?

Questions to Answer

What is your scientific question?

- Introduction and Hypothesis

Why should people care?

- Background, Rationale, Importance to the field

What did you do?

- Methods

What did you find?

- Results

What do your results mean?

- Discussion and Conclusion

How to prepare your slides

Approach

1. Title- short and clear
2. Disclosures (if needed)
3. Outline (for larger talks only)
4. Introduction/Background
5. Methods
6. Results
7. Limitations
8. Conclusion/Implications
9. Acknowledgements

Introduction and Background

- Why is this important? (separate slide)
  - Prior work on the topic (include citations)
  - Who is impacted? Clinical or policy implications?
  - How you will your work contribute to the field and this particular topic?
  - How will your work impact patients, clinicians, researchers?
- Make sure it will connect to the discussion
- Establish your scientific question and state your hypothesis in one slide (optional)

Methods

- Describe the population
- What type of study?
- What tools were used?
- Statistical Approach

Results

- Concise, clear, and thorough
- Provide charts, graphs and tables whenever possible
- Include statistical values (p, mean, etc.)
- Only present what is relevant to your main point
- Limit amount per slide (don't cram)

Limitations

Address Shortcomings:

- Is your sample size small?
- Were the measures used not optimal for your population?
- Are your findings applicable across populations or restricted to certain demographics ?
- What can be done better/differently next time?

Conclusions/Implications

1. What do you want to leave the audience thinking about?

2. What is your major point? Drive it home here in one sentence

3. Interpret results in the context of the bigger picture and implications for future research

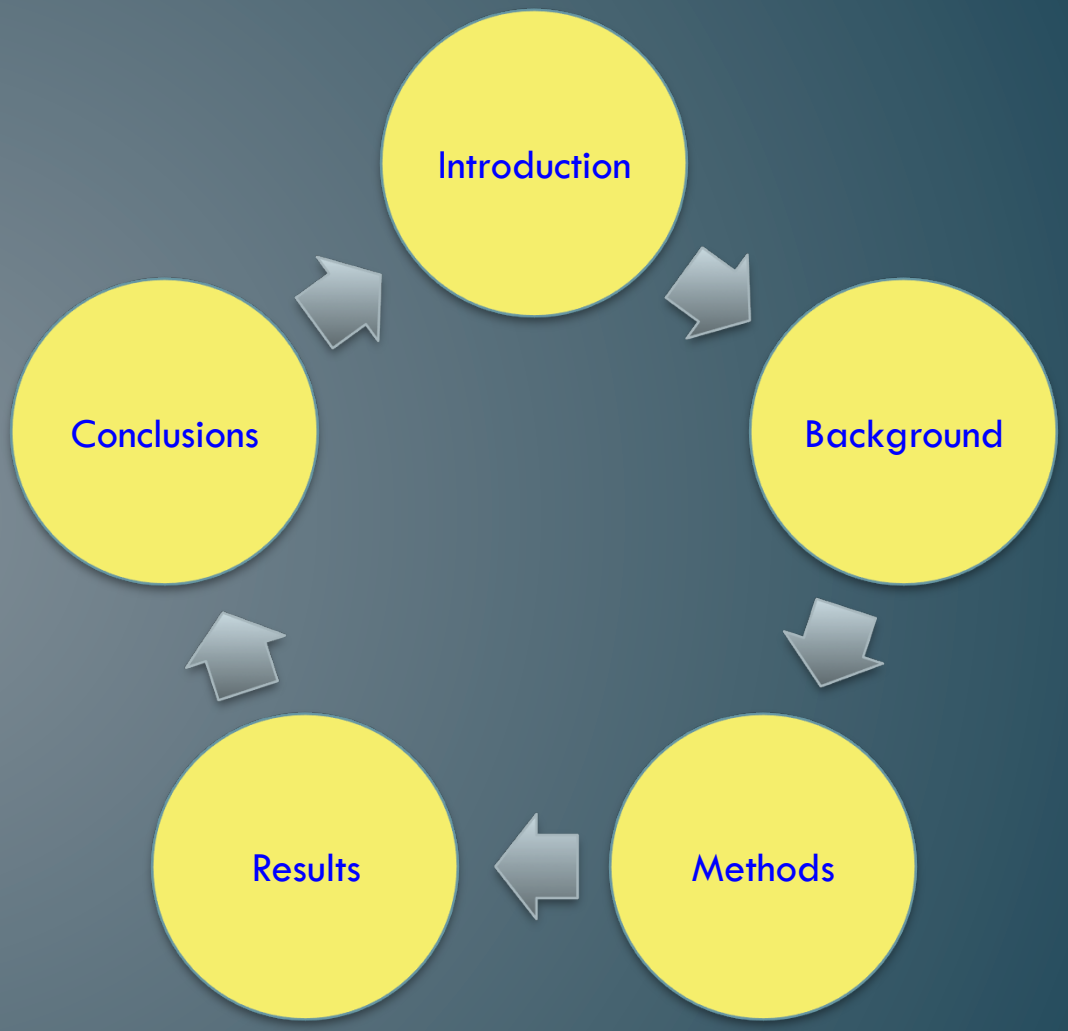
   *Refer back to Introduction

Number of Slides per Section

	Typical 12 Min Talk	Your 10 min MSTAR talk
Title	1	1
Disclosures	1	0
Introduction & Background	2	3**
Methods	2-3	2-3
Results	3	1*
Limitations	1	1
Conclusions & Implications	1-2	1*
Acknowledgements	1	1

* Expected findings

** Be sure to state hypothesis


Introduction
Background
Methods
Results
Conclusions

Slide Design and Layout

- Be cautious with Powerpoint templates- use departmental templates
- Avoid fancy animations and special effects
- Use your ‘white’ space sparingly
- Title slides with succinct, descriptive headings

Colors

- Use high contrast colors:
  - Dark background and light letters –large spaces
  - Light background and dark letters- small spaces
- Avoid neon colors in text or background

Text: Less is more

- If I typed out everything I was going to say in full sentences on my slide then you would want to read it and would begin to tune in and out of my voice, which would be repeating what my slide says since I've left nothing for me to reveal verbally. It
read. Also, since I have so much text in one
and puts a strain on your eyes. Eventually, b
the work I'm making you do and you will dis
much better to display a modest number of
what I'm going to state out loud.

Text: Less is more

- Avoid full sentences
- Use small phrases and key words
- Use legibly sized font
- Slide text dissonance (STD)

Text Technicalities

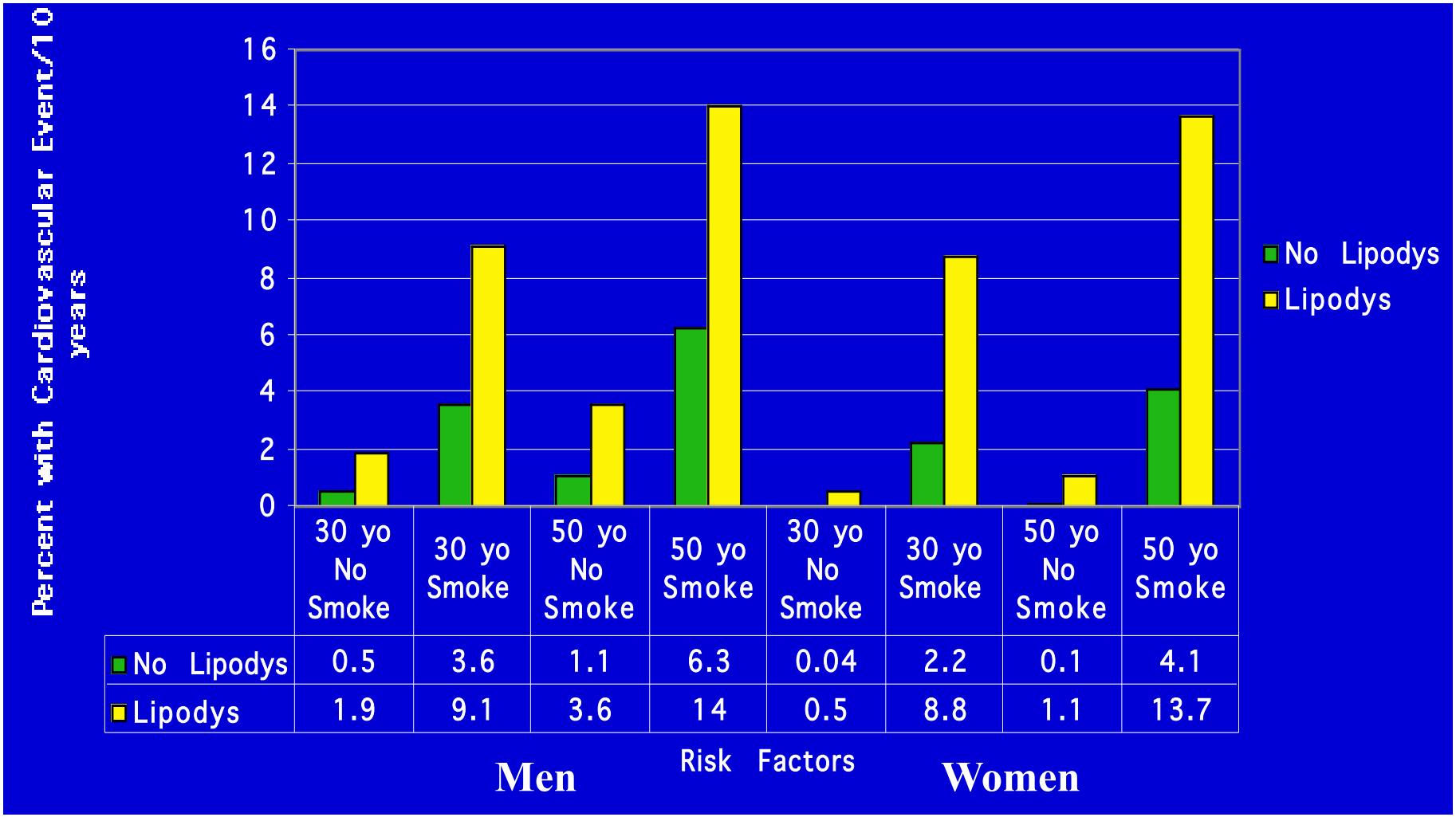
- 1.5-2 pt. spacing between bullet points
- Use Sans Serif Fonts
  - Arial, Calibri, Helvetica
- Font size:
  - Headings: 36-44 point
  - Body: 24-36 point
  - References: 14 point

- This is 14 point
- This is 18 point
- This is 36 point
- This is 44 point

Charts, graphs and visuals

- Minimize number of figures in one slide (1 main figure/slide)
- Provide clear, easy to read titles and axis labels
- Orient the audience to what is most important in the figure
- Simplify complex figures to bare necessities

Ten Year Risk of Cardiovascular Events



	30 yo No Smoke	30 yo Smoke	50 yo No Smoke	50 yo Smoke	30 yo No Smoke	30 yo Smoke	50 yo No Smoke	50 yo Smoke
No Lipodys	0.5	3.6	1.1	6.3	0.04	2.2	0.1	4.1
Lipodys	1.9	9.1	3.6	14	0.5	8.8	1.1	13.7

Projected Scans by Arm: 9/2014-5/2015*

Arm	Baseline	Wk48	Wk96	Wk144	Wk192	Total
Immediate	0	0	0	5	18	23
Deferred wk144	0	0	8	7	6	21
Deferred Start	0	3	2	3	4	12
HEU	0	0	0	2	23	25
HUU	0	0	0	2	17	19
Total	0	3	10	19	68	**100**

*Assuming no new enrollees

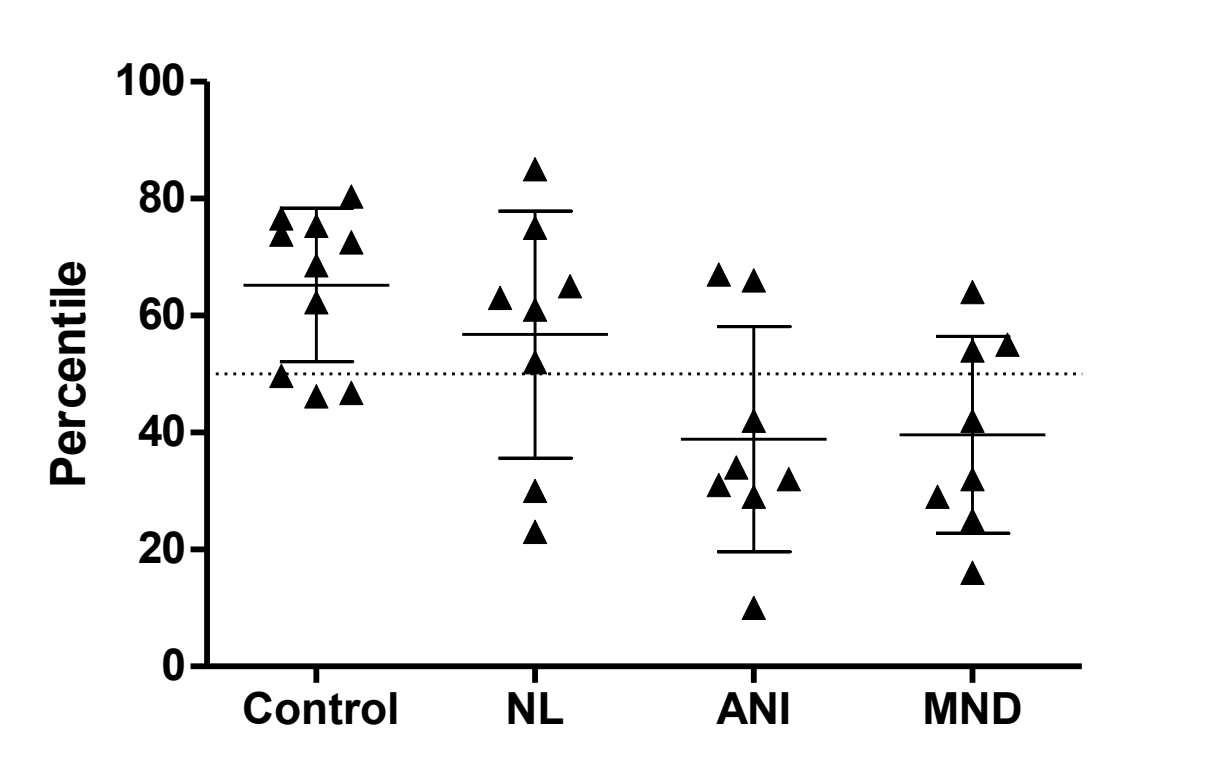
Projected Scans by Site: 9/2014-5/2015*

Site	Baseline	Wk48	Wk96	Wk144	Wk192	Total
HIV-NAT	0	1	6	10	28	45
KKU	0	2	0	5	5	12
RIHES	0	0	4	4	35	43
Total	0	3	10	19	68	**100**

*Assuming no new enrollees

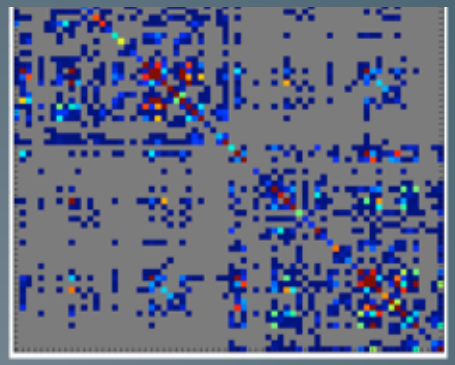
Combine HIVNAT and KKU – call them HIVNAT/KKU

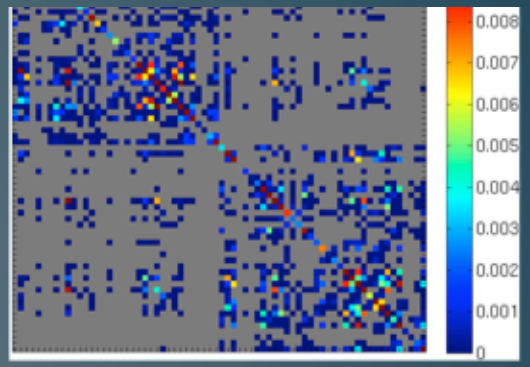
Total NAB Performance

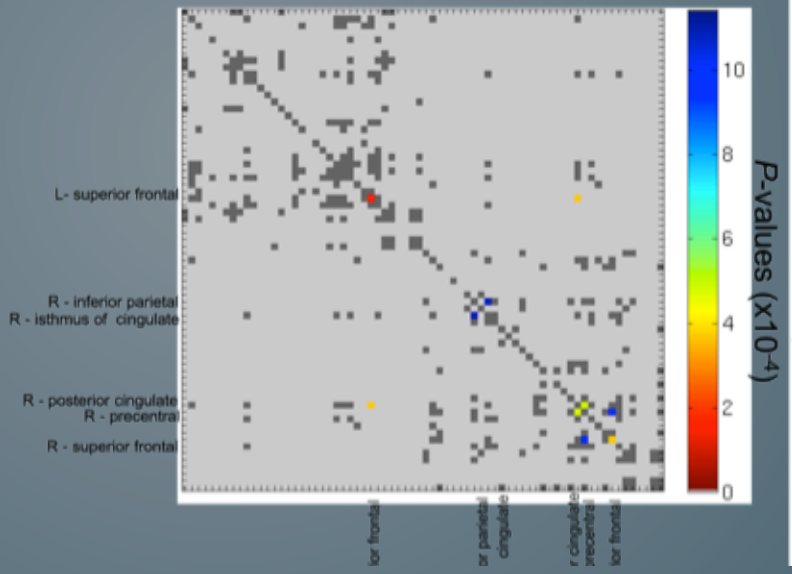


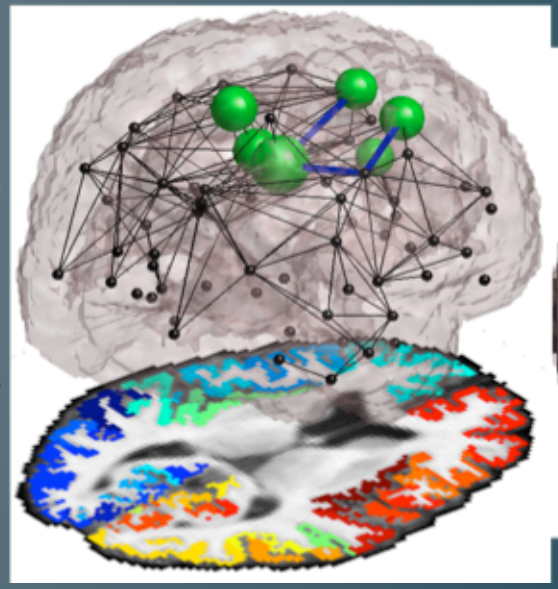
Total NAB across groups. ANI did not differ from MND, but both ANI and MND performed more than 2 SD below controls.

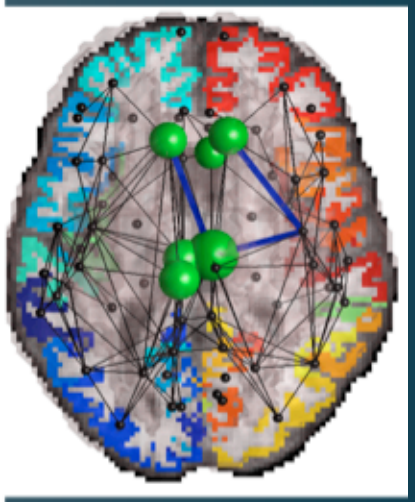
Chiao et al. AIDS Res. 2013



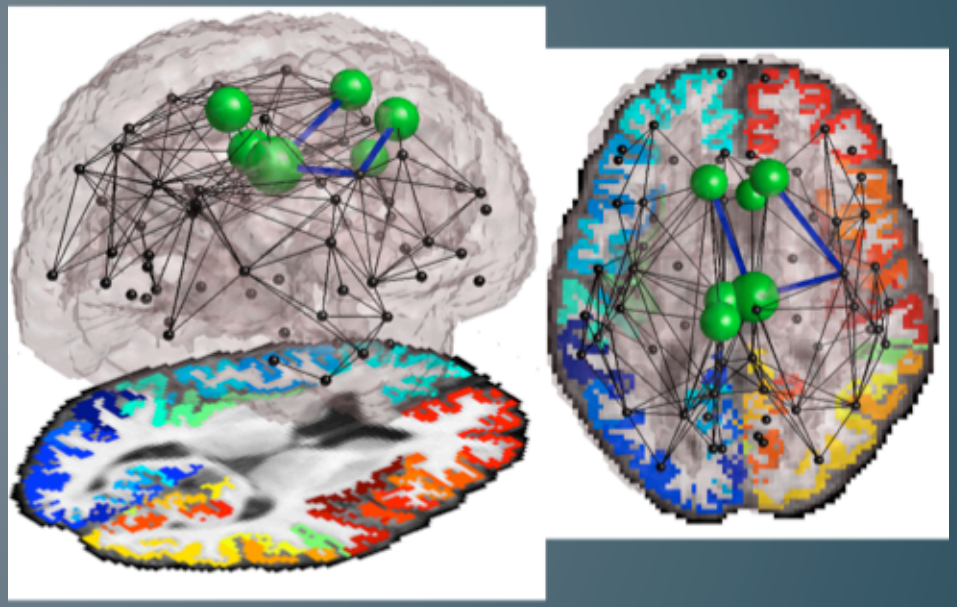

0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
Fiber proportion


L- superior frontal
R - inferior parietal
R - isthmus of cingulate
R - posterior cingulate
R - precentral
R - superior frontal
10
8
6
4
2
0
P-values (x10-4)





Network Connectivity Integrity in HIV



Presentation Basics

- Plan your words, but don't memorize a script
- Be mindful of time limits (avg. 1 min/slide)
- Speak slowly and enunciate- pace yourself
- Take pauses to allow audience to catch up
- Demonstrate confidence- don't doubt yourself but recognize the extent of your knowledge

Body Language

Body

- Stand straight (don't lean at an angle)
- Don't fidget, play with your hair etc.
- SMILE!!!

Eyes

- Don't stare at your slides- speak to your audience
- Scan the audience and make eye contact

Adapted from UCSF OCPD 'Presentation Tips for designing and delivering a dynamic research talk'

Audience Questions

- Prepare by considering what questions may be asked
- Practice in front of others to get feedback and suggestions for possible questions

Audience Questions

- When asked a question:
  - Listen carefully and restate question if not certain you heard correctly
  - Take a moment to think out your answer
  - Don't doubt yourself- be confident!!
- If you don't know the answer:
  - Try your best and acknowledge importance of the question
  - Consider if it will help you in your work
  - Don't be rude or condescending

Summary

- Keep it simple and concise
- Know your audience
- Know your presentation goals
- Get feedback
- Be Confident
- Practice Practice Practice!!!

Further Resources

- UCSF Office of Career and Professional development
  - Mock presentation opportunities for practice and feedback

- Scitable.com (by Nature.com): 'English Communication for Scientists,' Unit 4: Giving Oral Presentations

Engaging the Audience

- Start with attention grabber
- Road map:
  - Provide a preview slide at beginning with outline of the talk and refer back to it through out the talk to help orient
- Include audience in the story telling, use ‘we’, rather than ‘I’
- Use humor- but remain culturally sensitive (no nationality jokes) and professional

Transitions

- Provide verbal transitions that direct audience when moving onto a new point or concept
- Important in telling your story in a manner that audience can follow
- Review major points before moving on to next point
  - ‘So now that we’ve looked at what to present, we’ll look into how to present’