### Beginning

* *What’s the problem?*
  + *Stating the research question*
    - We don’t know the underlying neurophysiological mechanisms of the FPN at play in working memory
* *Why do we care?*
  + *Why the group chose this problem (why it’s important in a greater scientific context.)*
    - Characterizing the mechanism allows us to identify what working memory looks like in a normal, healthy FPN. As a result, we could treat unhealthy FPN behavior with appropriate interventions.
    - “Fuster's research has wide-ranging implications for elucidating the brain mechanisms of cognition. By gaining better understanding of these mechanisms, we are able to better understand the disorders of cognition at the foundation of many neurological and psychiatric disorders, notably brain stroke, brain trauma, Alzheimer's dementia, and schizophrenia.”- http://www.joaquinfuster.com/
* *What should we expect to learn?*
  + This paper will show that time-frequency patterns of high-frequency cortical activity arise during visual working memory (VWM). These patterns are similar in both the PFC and PPC, but unique across the three high-frequency ranges (beta, low-gamma and high-gamma.)

### Middle

* Experimental design, and methodology used to analyze the data
  + A ‘methods’ section that says how the group carried out the research and why it used those methods, along with how many people participated in the research
  + In the particular situation where the current paper is very closely related to a specific piece of existing research (e.g., the paper is a direct extension of previous research), it may be best to reverse the order. In that case it may make sense to start by briefly describing the previous research, and then discussing the contribution of the current paper with respect to that research.
  + Run through a sample trial example to ensure the audience understands how it went
* Results: the main themes and findings coming out of the analysis - using each theme as a sub-heading can work well
  + Why do you think things turned out as they did? You should be able to provide some insight that the audience can take away from the study and discuss some new questions that the research raises.

### End

* summarize what was shown and what the audience should have learned
* conclusions: the group’s answer to the research question based on its interpretation of the data
* recommendations: what the group wants to happen on the basis of their conclusion - the impact they want to have
* what the limitations of the results were and what new questions have been opened.

## Presentation tips

1. Start with a smart PowerPoint presentation
   1. Use bright background slide colors that will make text easy to see and will keep people awake. If you must use a darker color, consider a gradient, or a vibrant color like blue or green.
   2. Limit text on slides to only minimal, key talking points, using pictures and/or figures as much as possible to convey ideas.
   3. Finally, adhere to the Golden Rule of PowerPoint slides: approximately one slide per minute of your talk. If your talk is 15 minutes, DO NOT try to cram 25 slides’ worth of information. Likewise, if you languish 25 slides into a 45-minute talk, your audience will quickly fall asleep. Microsoft provides some great tips and guidelines for preparing better PowerPoint presentations.
2. Keep the content exciting and compact
   1. While we applaud your passion for every remote aspect of your research project, remember as you are preparing your talk that not everyone will share it, even if you’re at a conference solely dedicated to your expertise. People at conferences will take in so many talks and posters that they become unable to absorb too much information.
   2. Pick the most important takeaway points of your discovery, its larger-scale impact, and how it will influence future directions in your work. Try to have your audience leave having learned one or two things they didn’t know from your lecture, and it will be a success!
3. Elocution and delivery matter
   1. Nothing will make the content of your presentation matter less than a poor delivery. Remember to keep eye contact with the audience, only occasionally looking down at your notes, if you have them.
   2. Notecard tip: Print out talking points in large-block letters so they are easy to read when you glance down.
   3. Project a large, clear voice so the back row of the room can hear you, and speak with a comfortable rhythm that doesn’t feel either too rushed or too slow. If you are more soft-spoken, borrow a microphone from the conference or symposium organizers.
   4. Finally, if you feel uncertain about your speaking skills, practice with a lab mate or even a family member. Give your seminar as a group meeting and ask for feedback. In a greater context, consider taking a public speaking or communications course at your university to gain confidence.
4. Express enthusiasm for your research and it will rub off on the audience
   1. If you think expression levels of p53 in C. elegans knockout worms is the most fascinating thing in the world, show it, and tell the audience why. You’d be surprised how engaged an audience can be if you make your work and results sound as fun and exciting as you think they are.
5. Tell a great story
   1. In his terrific University Affairs Magazine post about ways to energize lectures, Professor Dalton Kehoe talks about the central importance of telling a great story. If you think science lacks great storytelling or creativity, you should read our latest post about misconceptions of the field. Conveying a great discovery is all about storytelling, albeit with more technical terminology.
   2. Start with a beginning, a middle and an end.
   3. Introduce your research and why it’s important in a greater scientific context.
   4. Talk about some of the stumbling blocks and experiments that led to the discovery, and, because science lacks a “the end,” the future directions of your research.
   5. Always leave enough time afterwards for a Q & A.
   6. With this simple framework, along with our tips above, you should be able to prepare a memorable, informative seminar that will leave everyone applauding and talking.
6. Write down audience questions
   1. Find a way to record the audience questions in each presentation
   2. Find time later to refine the slides where appropriate to address the questions
   3. Future presentations should be more comprehensive as a result