How to Present a Journal Club Talk

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Start with a “title” slide

“Title of the Paper You’re Presenting”
Complete Bibliographic Citation

Presented by <Names of Team Members>
Department of Physics • University of Illinois at Urbana-Champaign
PHYS 496, December 2, 2022

The title slide cues the audience “Get ready to listen”
Include an interesting graphic to grab their attention
Your talk should answer the following questions:

- What is new about the paper? (Introduction)
- Where does it fit in the context of prior work? (Background)
- What methods were used? (Methods)
- What were the primary results? (Results)
- What do the authors think these results mean? (Conclusions)
- What is your assessment of the paper? (Critique)

Use this paradigm to organize your presentation

What about an “outline” slide?

Outline
- Background and Introduction
- Methods
- Results
- Conclusions
- Critique
- Questions

I think the use of “outline” slides is vastly overrated—little meaningful content, eminently forgettable (cme)
If you feel compelled to provide an outline, make it content-rich

Today we’ll discuss
Majorana fermions (MFs), theory background
InSb nanowires used as “colliders”
Zero-energy peaks observed; believed to be electrons scattering off MFs
Could be used for solid-state qubits
Critique of paper
Audience questions

Consider an “outline” graphic at the bottom of each slide to orient listeners

Motivating statement, written as a sentence and left justified

<SLIDE STUFF>

Place a running outline at the margins of the slide (bottom or right margin)
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<SLIDE STUFF>

Theory • InSb Nanowires • 0-energy Peaks • MF Observed • Applications • Critique • Q & A

Be creative but not distracting
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Allow about 2 min* per slide

Do the math:

15 min total – 3 min for Q&A = 12 min for “talk”

\[
\frac{12 \text{ min talk}}{\approx 2 \text{ min/slide}} = 5–7 \text{ slides max*}
\]

7 slides – title slide – summary slide = 5 slides

*Allow more time for dense slides, equations, tabular data

How do you divide up your five slides?

1. Problem/motivation/background—what audience needs to know (prior work)
2. What is new and why it’s important
3. Methods
4. Results and conclusions
5. Your critique of the paper

Note #5—the difference between a standard science talk and a journal-club talk
What is different about a JC talk?

5. Your critique of the paper

Put on your peer-reviewer hat
- Is the work valid?
- Does it represent a significant advance?
- Is it accessible?
- Are the figures well made and meaningful?
- Is the paper well written?
- How much of an impact has the paper had?

Note #5—the difference between a standard science talk and a journal-club talk

The last slide should be a summary that recaps the main points of your talk

First “observation” of Majorana fermions in semiconductor nanowires
Predicted in 1930s, never before observed
Used InSb nanowires as “nano-colliders”; zero-energy peaks observed
Generated quasiparticles of electrons, possible qubits for topological quantum computers
Didn’t actually observe Majorana fermions; inferred them from electron scattering

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Put your contact information on the last slide
Don’t use a pointless last slide

The last slide will get the longest audience exposure—make it count!*

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*Reiterate your important points and stimulate audience questions
To recap...

Discuss all aspects of the paper—background, methods, results, conclusions
Be selective; distill your message to the essentials
Emphasize what is new or different
Present a critique of the paper—discuss strengths and weaknesses; evaluate its likely impact
Provide a title slide and a summary slide
No more than seven slides
Rehearse and revise (shorten); mind the time

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