



# So, you want to have your first committee meeting?

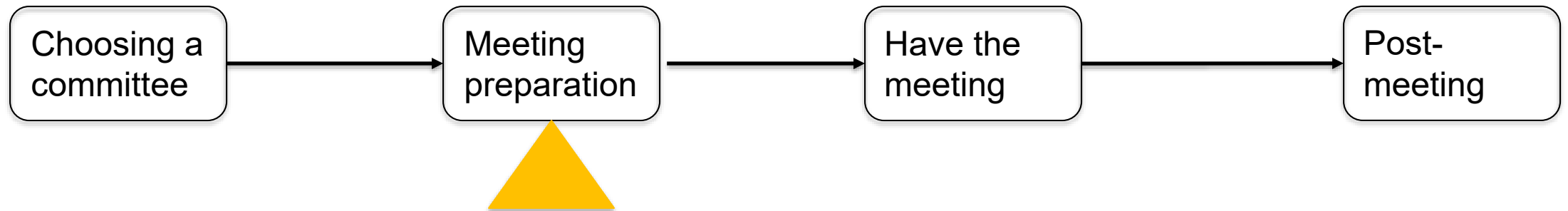
Jacob Brown

FRIBGO Topic: Planning a First Committee Meeting



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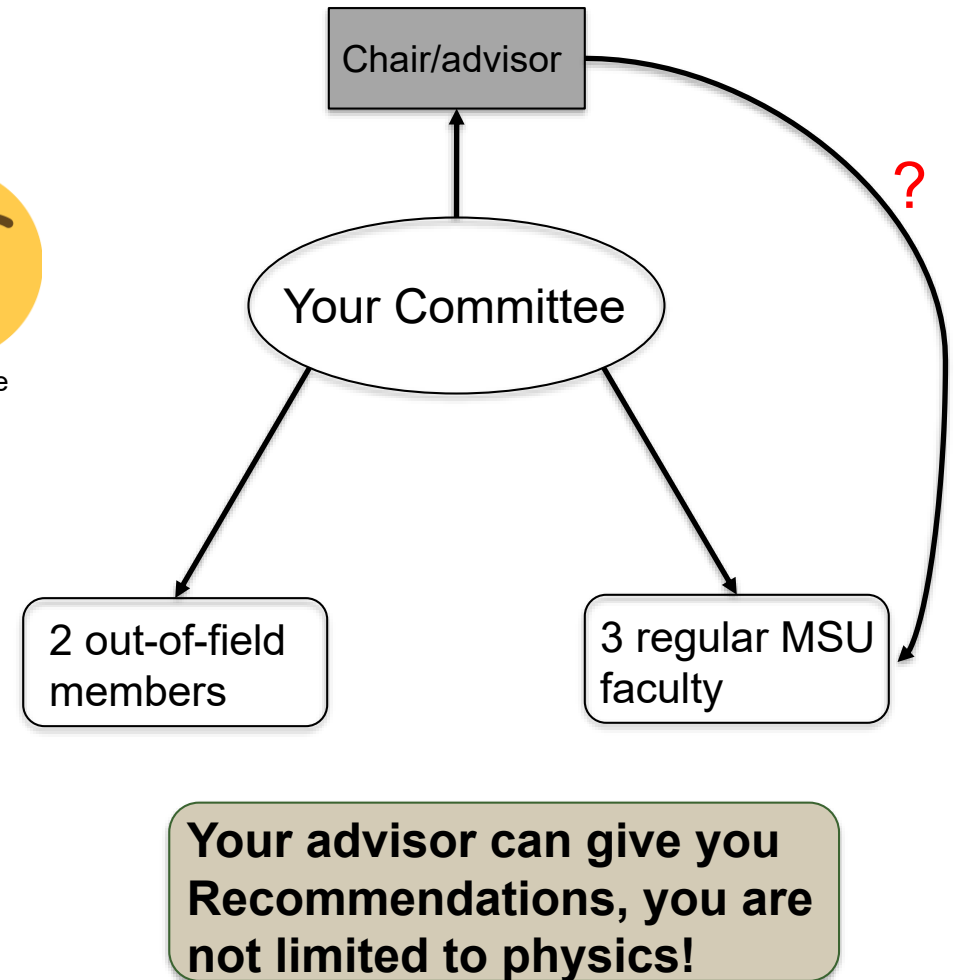
# Outline: Talk and Reality



Simple, right?  
Not exactly

# Choosing a Committee

- Required to have 5 members, can have more with proper paperwork
  - Can be external to MSU as well:  
<https://pa.msu.edu/graduate-program/current-graduate-students/procedure-for-requesting-persons-who-are-not-regular-msu-faculty-to-serve-on-guidance-committees.aspx>
- For FRIB, many advisors **do not** fall into the regular MSU faculty slot (FRIB tenure)
- Out-of-field members, shoot to compliment the bulk of your committee
  - Ex: an experimentalist can choose a theorist, nuclear physicist can choose a chemist for related detectors or accelerator faculty etc.
    - » Nuclear physics is tricky, lines of what counts as in/out-of-field is blurred (Grad chair can help clarify)



# List of FRIB+MSU Faculty (Non-exhaustive)

1. Pawel Danielewicz
  2. Alexandra Gade\*
  3. Hiro Iwasaki
  4. Bill Lynch\*
  5. Witek Nazarewicz
  6. Filomena Nunes
  7. Hendrik Schatz
  8. Brad Sherrill
  9. Artemis Spyrou
  10. Chris Wrede
  11. Remco Zegers
  12. Vladimir Zelevinsky\*
- Advisor can check potential members through MSU system and check faculty status
  - This list is also subject to change
  - \* means unsure if willing or able to take more committees

# Asking + Gradplan

- Email professors: Personal introduction, brief description of topic, offer to meet if they would like to talk more about it
  - Good to have back-up professors in case others cannot serve on committee
- Adding to gradplan: MSU Student site → Gradplan tile → Committee tab, add emails and send to professors!

Tasks

- Holds: 0
- To Do Items: 3
- Messages: 0

Classes

My Profile

Welcome, Jacob Brown

Academic Records

Grades, transcripts, history

Academic Progress

80% Complete  
7% In Progress  
13% Incomplete

Major(s): Physics PHD  
Physics MS - Physics  
NonThs (B)

Career(s): Graduate

GPA: [Redacted]

Units: 33.0

Student Accounts

Billing, payments, payment plans, and direct deposit

Financial Aid

Loans, grants, scholarships and other types of financial aid

GradPlan

Resources

Resources is where you can find D2L, Academic Calendar, and more!  
Not finding what you need? Check here!

GradPlan

- Committee
- Course Plan
- Research Overview
- Annual Review
- Requests

## Committee

### Select Program

\*Program

Most students in Master's and Doctoral programs are required to assemble a guidance committee. Refer to the Academic Programs catalog for information about deadlines and committee membership.

- Master's Program Examinations
- Planning a Doctoral Program and Appointment of a Guidance Committee

To create your committee for the first time, or to make changes to an existing committee, click **Manage Committee**, add or remove members or change committee roles, and submit for approval.

### Current Committee

[Manage Committee](#)

You have not yet assembled a guidance committee.

If you are in a program that also requires creation of a course plan, be sure to have a guidance committee created and approved **before** you submit a course plan request.



# Preparation

We are now here



<https://tenor.com/search/so-it-begins-gifs>

# Tasks


- Heaviest part of the process in terms of workload (depending on how you feel about public speaking)
  - Scheduling the meeting
  - Writing the abstract
  - Form preparation
  - Slide preparation
- Breakdown the tasks and give yourself deadlines
  - What do you struggle with?
  - How developed is your project?



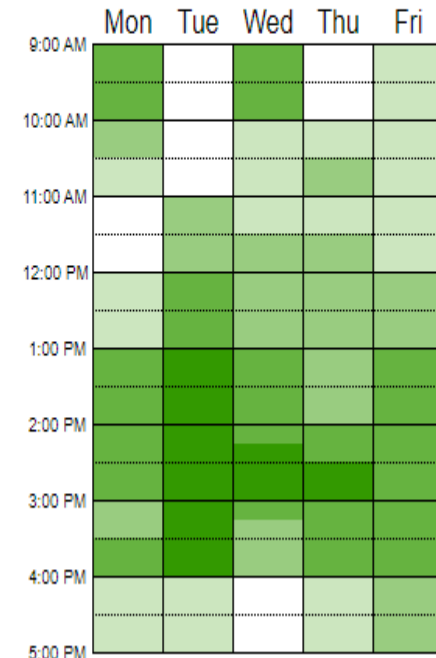
# Scheduling

- Task breakdown can be subjective, but heavily recommend doing this first
  - Professors are very busy and getting them to agree on a time can be very hard
- Meetings can be held from August 15<sup>th</sup> to May 15<sup>th</sup> (subject to change)
- Pick a week far out from you asking so professors can have advance
  - Use a scheduling tool and share with your committee members
    - » When2meet is a good option, free and easy
    - » <https://www.when2meet.com/>
- Secure room through Outlook (1200 is common choice) and set up a zoom meeting for time and date of meeting
  - Take room a bit earlier than start time

Group's Availability

1/5 Available  5/5 Available

Mouseover the Calendar to See Who Is Available





# Abstract + Evaluation Form

- Abstract portion is 1 page in total
  - Title
  - Abstract content, no word limit
  - Committee members, chair must be marked (website says use an asterisk)
    - » Site: <https://pa.msu.edu/graduate-program/current-graduate-students/forms.aspx>
  - Citations
- Evaluation form must be filled out with student name and title
  - Blank form on above site
- Combine the evaluation form and abstract into one PDF file
  - Email to Kim and Rosie two weeks with zoom info and meeting date+location

Example, my form

Evaluation Form Oral Examination First Guidance Committee Meeting

Student Name: Jacob Brown

Abstract Title Investigation of Ponderomotive Effects in Narrow Bandwidth, Medium-velocity Elliptical SRF Cavities

Please score the following:

		Unsatisfactory	Satisfactory	Excellent
<b>Organization</b>	Abstract format	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality of Slides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	References	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Transitions easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Content</b>	Choice of Topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Difficulty of Topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Presentation level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Thoroughness of Research	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Presentation</b>	Clarity of Speech	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Expression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Presentation Length	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Audience Engagement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Context</b>	Introductory Material	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Previous Work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Scientific Impact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Alternative Views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Critical insight</b>	Response to Questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Mastery of Topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Conclusions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Future Perspectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How much did you learn?  Nothing  A little  Some  Quite a bit  A lot

General Comments \_\_\_\_\_

**Guidance committee members only**

Closed Session		Unsatisfactory	Satisfactory	Excellent
Response to Questions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mastery of Topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Research Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall Evaluation  Unsatisfactory  Satisfactory  Excellent

(For Faculty Only) Name: \_\_\_\_\_ Signature: \_\_\_\_\_

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## Investigation of Ponderomotive Effects in Narrow Bandwidth, Medium-velocity Elliptical SRF Cavities

Jacob Brown<sup>1</sup>

<sup>1</sup>Facility for Rare Isotope Beams, Michigan State University, East Lansing, MI 48824

### Abstract

Superconducting radio-frequency (SRF) cavities have become the primary tool in particle accelerators for high beam power or beam repetition rate. Recent advances in SRF technology allow linac cryomodule operation in constant-wave (CW) mode such as the FRIB heavy ion linac. Lower beam loading effects in CW mode allows for a wider choice of loaded quality factor ( $Q_L$ ) for linac cryomodules.  $Q_L$  must be chosen at compromise between higher stored energy and higher power requirements for countering cavity deformation effects. Deformations can occur from mechanical vibrations and the non-linear/ponderomotive pressure of the cavity's fields on the walls. In extreme cases, these two effects can couple together, leading to instabilities in cavity operation. Instability thresholds are usually determined experimentally after a prototype for the cavity has been produced.

FRIB is pursuing R&D to demonstrate high-performance medium-velocity ( $\beta_0 = 0.65$ ) elliptical cavity for its linac energy upgrade (FRIB400), which requires not only high  $Q_0$  ( $Q_0 < 2 \times 10^{10}$ ), but also high  $Q_L$  ( $Q_L = 2 \times 10^7$ ) [1], the latter of which was not demonstrated elsewhere in medium-velocity elliptical cavities. We plan to predict ponderomotive effects in the FRIB400 cavity from theoretical calculations combined with finite-element-method (FEM) simulations, measure the instability thresholds in the real cavity to experimentally verify the theoretical predictions, and explore alternative stiffening ring design [2] or low-level RF (LLRF) algorithms to actively suppress the instability or increase instability thresholds. This talk will propose a method to characterize ponderomotive effects that can be used before development of a prototype cavity, which will be beneficial to machine planning. Additionally, we will discuss the plan for experimental verification of our calculated/simulated values in tests later this year.

COMMITTEE:  
 Ting Xu, Chair  
 Sergey Baryshev  
 Wade Fisher  
 Peter Ostroumov  
 Vyacheslav Yakovlev  
 Remco Zegers

[1] P. N. Ostroumov, et al., *Elliptical Superconducting RF Cavities for FRIB Energy Upgrade*, NIM **A888**, p. 53-63 (2018)

[2] E. Zaplatin, et al., *SRF Low-beta Elliptical Resonator Two-ring Stiffening*, Proc. of LINAC2016 (2016)

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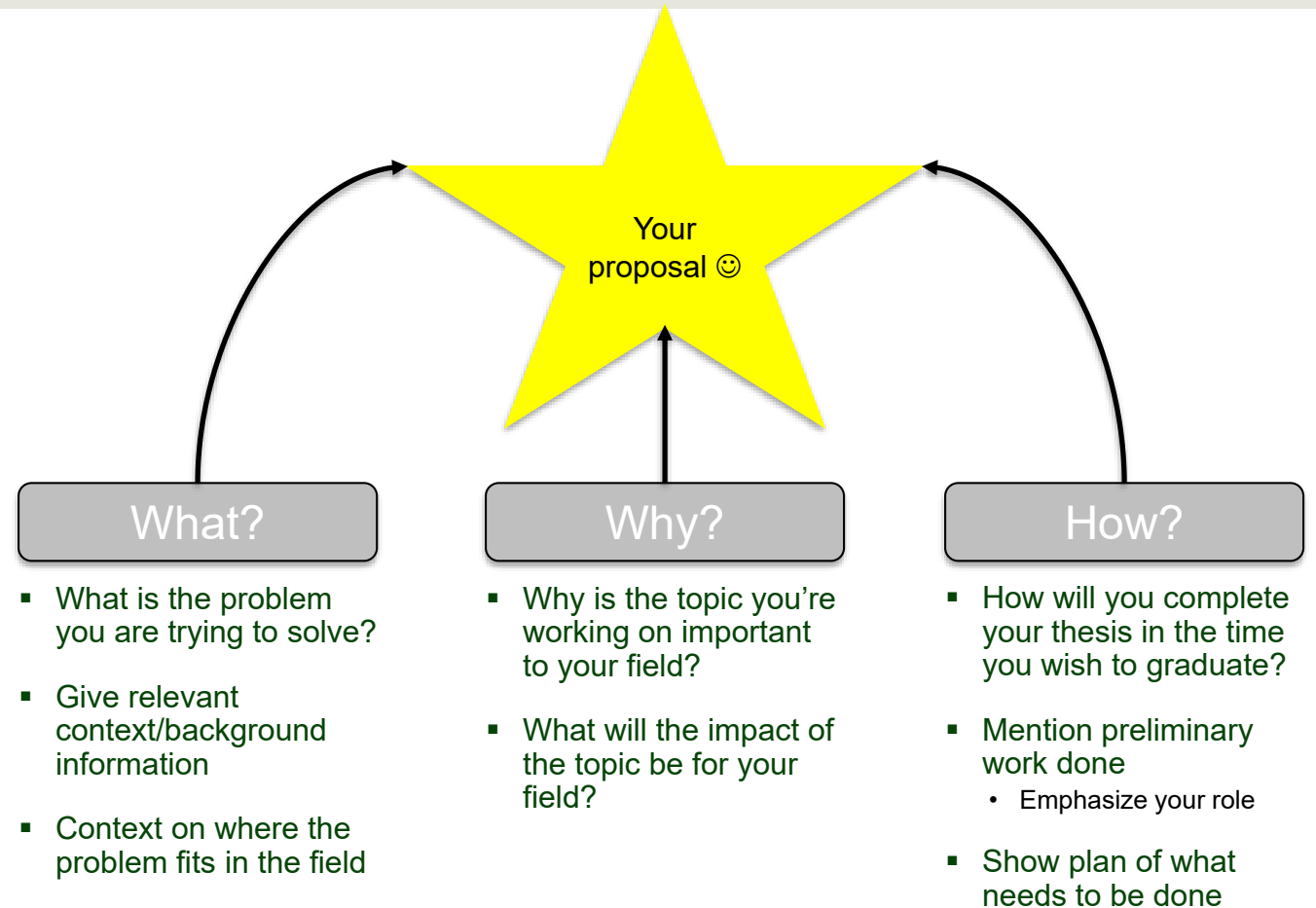


# Slide Preparation

- Most crucial part of the process, you are selling your research topic (in 25 minutes)



- Format and flow are up to presenter, but proposal should seek to aim three questions



# Slide Preparation: Suggestions

## ▪ Suggestion:

1. Use clean format for slides, should not distract from the presentation
  - a. There is the FRIB standard on the portal, but custom formats can be made
2. Use simple transitions
3. **Bold takeaways** or highlight them some other way
4. In-slide citations, sufficient information to find paper or presentation
5. Scale figures so they are readable
6. Define all acronyms before use
7. Unhappy with a slide while making them?  
Don't delete right away, save them as back-up and delete later if you'd like

## ▪ Maybe avoid:

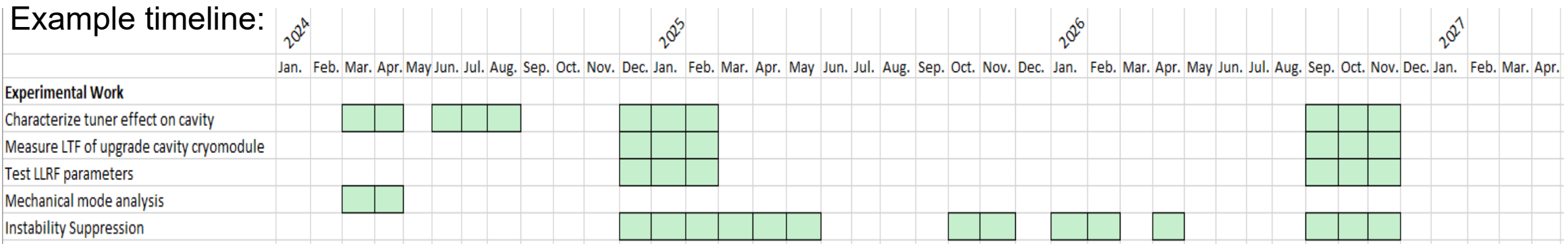
1. Avoid larger math equations when possible; put the most relevant expression
  - a. Theory exception haha
  - b. List all relevant symbols, some people may be listening, some may be reading
2. Avoid jargon and too much technicality
  - a. At least two members of your committee will be out of field, they need to be able to know what you're saying
  - b. More technical details can be excellent back-up slides



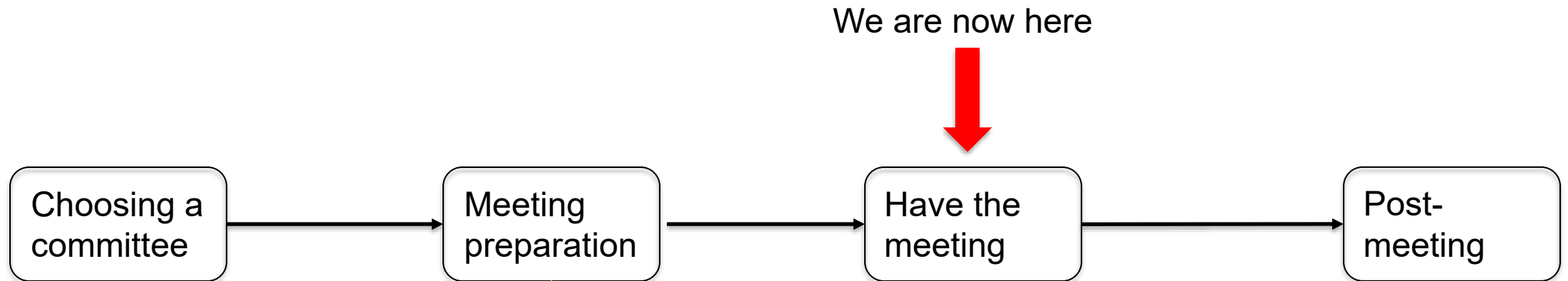
# Slide Preparation: Closed Session



- Include a timeline of relevant dates/milestones for your thesis
  - Work with advisor to breakdown thesis into appropriate tasks
  - Dates are malleable, rough estimates are fine
- Classes taken: subject exams (include GPA) and relevant extracurriculars (can include GPA if you want)
  - Expected to be included, not usually asked
- Accomplishments: presentations at conferences, papers published, etc.
  - Include planned presentations and publications
  - Can be in open session, up to presenter



# Meeting Time



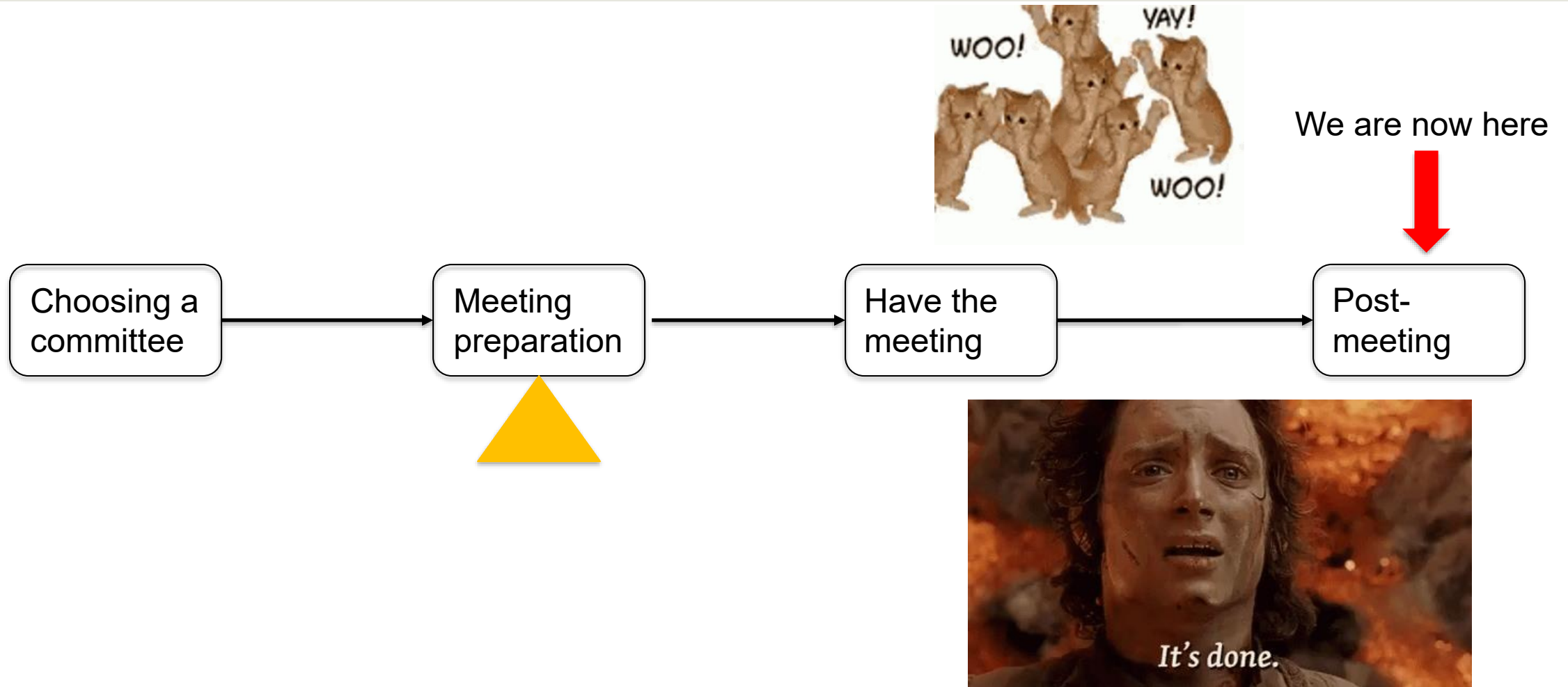
<https://tenor.com/view/joker-dark-knight-batman-gif-3438276>

# Presenting

- Practice your slides beforehand and work on timing
  - Its ok to be under 25 minutes, and ok to go a bit over
  - You will most likely be faster in the real meeting
  - **You can do your practice talk with us!**
- Print out at least enough of the evaluation forms for your committee members and bring pens for them just in case
  - Can print ones for audience as well, personal choice
- Arrive to room early to set up tools: zoom, pointers, microphone
- Breathe! If you've made it to this point, you're going to be ok! Just do the best you can 😊



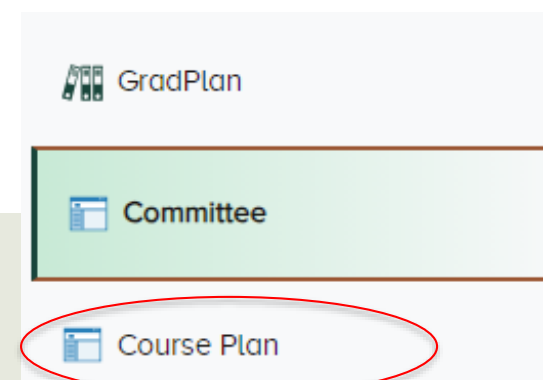
# You did it!



<https://tenor.com/view/frodo-baggins-its-over-its-done-lotr-gif-12920799>  
<https://tenor.com/view/cat-cats-celebration-woohoo-jumping-gif-25834998>

# Post-meeting Administration

- **Compilation of forms:**
  - Report form: miscellaneous questions including discussions on next year goals, graduation timeline and career interests.
    - » Include feedback from committee at the end of the meeting
    - » Get signed by committee then grad director
    - » Form:  
[https://pa.msu.edu/sites/\\_pa/assets/File/Guidance-Committee-1-102521.pdf](https://pa.msu.edu/sites/_pa/assets/File/Guidance-Committee-1-102521.pdf)
  - Comprehensive exam form: list of subject exams and grades as well as committee and meeting date
    - » Signed by grad director
    - » Form:  
<https://pa.msu.edu/Comprehensive%20Exam%20Completion-2022.pdf>
- **Both are submitted to Kim**
- Post committee approval: fill out the course plan in Gradplan
- With the forms submitted, you can now get your masters degree (non-thesis)!
- Credit required: 6 credits of PHY 800, 30 credits total
- Ask Kim to add the degree to Gradplan, then you can apply for graduation
- Master plans in handbook, full details:  
<https://pa.msu.edu/graduate-program/GradHandbook-102423.pdf>





# Summary: Key Points

- Committee needs: 3 regular MSU faculty, 2 out-of-field, compliment your project and other members
- Scheduling is recommended to be a priority when committee is confirmed
- Breakdown all the preparation in an order that works to your strengths and knowns
- Slides should answer three main questions: What? Why? How?
  - Don't forget about all the forms
- Submit all the forms after; you'll be able to get your masters
  - Handbook and Kim are good resources
- **WE DO PRACTICE TALKS**
- You'll do great, you deserve to be here 😊

