Physics 691
20 Minute Colloquium

The number 1 rule for ANY presentation is:

THINK OF YOUR AUDIENCE

Myers-Briggs Test Indicator (MBTI)

Brain function affects how information is absorbed and processed.

Understanding your strengths, AND that your audience is made up of different 'types' can make you a better presenter.

- **Types:**
  - **Extravert vs. Introvert**: how a person is energized
  - **Sensory vs. Intuition:** what a person pays attention to
  - **Thinking vs. Feeling:** how a person makes decisions
  - **Judgment vs. Perception:** what kind of outlook on life a person adopts

Extraverted vs. Introverted

- Extraverted: (E)
  - Energy gained from surroundings, directed outward
  - Acts first, reflects later
  - More talkative, expressive
  - Like to be around people, social
  - Motivated by environment (people, things)

- Introverted: (I)
  - Gain energy internally, directed inward
  - Quiet energy, thoughtful, perceptive
  - Reserved, private, cautious
  - Think before they act
  - Are more comfortable spending time alone - recharge

Sensory vs. Intuition

- Sensory: (S)
  - Facts, details, and realities
  - Lives in the Present
  - Memory recall rich in details and past experiences
  - Have straightforward speech - Are more realistic
  - Want clear and concrete information

- Intuition: (N)
  - Seek understanding in patterns, context, connections and theory
  - Are more future oriented
  - Admire creativity, imaginative – see possibilities
  - Focus on ideas & the big picture
  - Comfortable with ambiguous, roundabout thoughts

Thinking vs. Feeling

- Thinking (T)
  - Search for facts and logic to make decision
  - Objective, Direct
  - Analytical and systematic
  - Naturally critical
  - Motivated by achievement

- Feeling (F)
  - Employ personal feelings and impact on others to make decision
  - Warm & friendly
  - Sensitive & diplomatic
  - Try hard to please others
  - Are motivated by being appreciated

Judgment vs. Perception

- Judgment (J)
  - Are serious and formal
  - Are time conscious
  - Like to make plans
  - Work first, play later
  - Like to finish project best
- Perception (P)
  - Playful & casual
  - Unaware of time or date
  - Like to wait-and-see
  - Play first, work later
  - Like to start project best

Jo-Anne's Quick Test

- Introverted (I) or Extroverted (E)?
  Do you get energized by working in a group, or does this drain your energy? Would you rather work with individuals for limited amounts of time?

- Better with an 'overview' (N) or more interested in 'details' (S)?
  e.g. Do you enjoy puzzles, needlepoint, crafts (S)? Or do these types of activities often drive you crazy (N)?

- Do you tend to make decisions based on 'gut feel' (F) or do you prefer facts (T)? With art or science, do you find yourself more interested with the stories behind the people (F) or about the artwork and science discoveries themselves (T)?

- Do you like to have a plan (even if it is very, very loose) (J) or do you like to 'go with the flow' (P)?

KEEP IN MIND YOUR AUDIENCE

- N's REQUIRE a clear 'big picture' of your work.
- S's REQUIRE understanding of relevant details.

Most Scientists are N's, while most Engineers are S's.

Big Picture Essential

- F's like anecdotal evidence or decisions made on feeling
- T's like hard facts.

Most Scientists are T's. **Most of the talk should be 'factual'**

- P's are comfortable with 'going with the flow', but can deal with a loose plan.
- J's require some sort of a plan.

Scientists are typically split between these two.

A 'high level' outline is important

Physics 691
20 Minute Colloquium

Colloquium versus Seminar

Colloquium:

- Generally accessible by a 4th year honours physics student
- Accessible by all graduate physicists, regardless of area of major
- Avoids detailed discussion of 'the finer points' of a study
- All terms and abbreviations are initially spelled out.

Seminar:

- Targeted for a specialized research group.
- While some of the presentation may be accessible to a 4th year student, much of it will only be for researchers in the specific area.
- Many terms or abbreviations common to the research area will not be defined.

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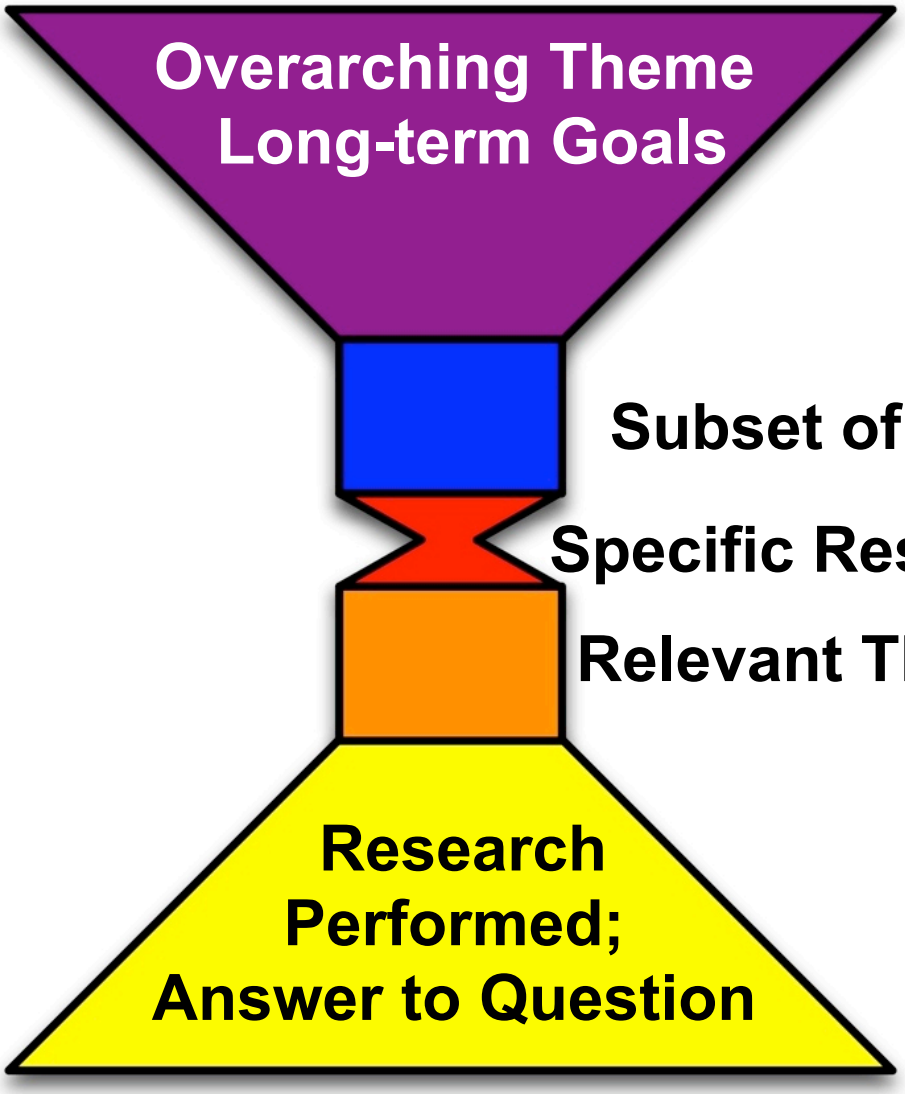
Fundamental Components of a Good Talk

- Good Story
- Good Slides
- Good Presence

The Story

- clear beginning - *Describe the 'big picture'*
- clear plan - *Describe your question and hypothesis*
- clear goals - *Describe your experiment (keep it high level!)*

Visualizing Your Research 'Story'



The Slides

- **Tell them what you are going to tell them - *Have a Title Page and Outline slide***
- **Tell them - *Present the Main slides***
- **Tell them what you told them - *Have a Summary slide***

The Slides

CRITICAL FUNCTION OF…

- **… the TITLE PAGE: Sets the mood of the talk.**

- **… the OUTLINE:**

  Informs the audience of where the talk is going.

  Consider returning to the outline periodically.

- **…the SUMMARY or CONCLUSION SLIDE:**

  Reminds the audience what they should 'walk away' with.

  LEAVE THIS SLIDE UP! The audience will need time to digest it.

From Last Time...

QUESTION:

You said not to go into too much detail, but then you were disappointed that I didn't explain my slide in enough detail - what gives?

Answer:

If you put up a slide, you have two choices:

a) Explain the slide in detail
b) Review the gist of the slide with the audience and let them know that it is not important to understand the entire slide for the rest of the talk (ie. give them an 'out' for not understanding the slide)

IT IS NOT OK TO PUT UP A SLIDE AND IGNORE IT!

The Faraday Rotation Relation:

VERSION 1:

The Faraday Rotation Relation:

$$\nabla \cdot \vec{E} = \frac{\rho}{\varepsilon_\circ} \qquad \nabla \times \vec{E} = \frac{-\partial B}{\partial t}$$

$$\nabla \cdot \vec{B} = 0 \qquad \nabla \times \vec{B} = \mu_\circ \vec{J} + \mu_\circ \varepsilon_\circ \frac{\partial \vec{E}}{\partial t}$$

$$\text{NII}: \; m\frac{d\vec{u}}{dt} = e\vec{E} - e(\vec{u} \times \vec{B}) + \text{collisions}$$

$$\vec{J} = -n_e e \vec{u} \qquad \vec{B} = \vec{B}_\circ + \delta\vec{B}$$

$$\vec{B}_\circ \parallel \vec{k}$$

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$$\vec{B}_\circ \parallel \vec{k}$$

The Faraday Rotation Relation:

Solving the above equations gives TWO indices of refraction, one for RCP and one for LCP.

Therefore, for a linearly polarized wave:

$$\psi = \lambda^2 0.812 \int n_e \vec{B} \cdot \vec{dl}$$

The Faraday Rotation Relation:

VERSION 2:

The Faraday Rotation Relation:

For a linearly polarised wave propagating through a magnetized plasma, we know:

$$\psi = \lambda^2 0.812 \int n_e \vec{B} \cdot \vec{dl}$$

The Presence

- ‘Dress for Success’ - *Avoid wearing ‘distracting’ items*
- Engage the audience - *Look and talk to audience*
- Don’t read the slides - *Try to avoid reading from notes*
- Body positioning - *No butts, no bellies, no hands in pockets*

Evaluating the Talks

- Anonymous Bubble sheets will have the whole class to assess:
  - Quality of talk in general
  - Quality of 'story' (too hard, too easy...)
  - Quality of slides
  - Quality of presentation

- Arrange to have your supervisor come

- Two talks per day

- IF you cannot attend or present, it will be YOUR responsibility to trade for a different spot. If the circumstances are extenuating, we will work around it, but conference travel or exam schedule does not count.

Physics 691

20 Minute Talk Schedule

- **March 3**
  - Talk 1: **Ambrish;** Supervisor: **David Hobill**
  - Talk 2: **Golnoosh;** Supervisor: **Maya Paczuski**
- **March 10:**
  - Talk 3: **Jayme;** Supervisor: **Gene Milone**
  - Talk 4: **Adam;** Supervisor: **Mike Wieser**
- **March 17:**
  - Talk 5:**Jalal;** Supervisor**: Nasser Moazzen-Ahmadi**
  - Talk 6:**Farokh;** Supervisor: **Nasser Moazzen-Ahmadi**
- **March 24:**
  - Talk 7: **Sadegh;** Supervisor: **Barry Sanders**
  - Talk 8:**Neda;** Supervisor: **Barry Sanders, Alex Lvovsky**
- **March 31:**
  - Talk 9:**Erick;** Supervisor: **Alex Lvovsky**
  - Talk 10:**Pantita;** Supervisor**: Alex Lvovsky**
- **April 7:**
  - Talk 11: **Jeff;** Supervisor: **Eric Donovan**
  - Talk 12: **Taparati;** Supervisor: **Rachid Ouyed**
- **April 14:**
  - Talk 13:**Mojtaba;** Supervisor: **Nasser Moazzen-Ahmadi**
  - Talk 14:**Mandana;** Supervisor: **Andrew Yau**
- **April 15 (?):**
  - Talk 15: **Ghislain;** Supervisor: **Jörn Davidsen**
  - Talk 16: **Khabat;** Supervisor: **Christoph Simon**

Poster Talks Continued...

- **February 10**
  - **Poster 8:Jeff**
  - **Poster 9: Khabat**
  - **Poster 10: Mojtaba**
  - **Poster 11: Farokh**
  - **Poster 12: Taparati**

[....READING WEEK....]

- **February 24**
  - **Poster 13:Golnoosh**
  - **Poster 14: St-yves**
  - **Poster 15: Neda**
  - **Poster 16: Adam**

See you next Wednesday!