Improving your Research Presentation

Organizing Your Talk: Kendra Redmond
A good presentation is like a good shot of espresso

-Jim Endicott
Michael Turner
The University of Chicago
Professor, Departments of Astronomy and Astrophysics, and Physics, and the College; Enrico Fermi Institute; Kavli Institute for Cosmological Physics
Audience
Where are they starting from?

Audience:
- Peers
- Colleagues
- Students

Research:
- Research Group
- Faculty & Staff
THAT CHART EXPLAINED THE QUANTUM HALL EFFECT. NOW, IF YOU'LL BEAR WITH ME FOR A MOMENT, THIS NEXT GRAPH SHOWS RAINFALL OVER THE AMAZON BASIN...

IF YOU KEEP SAYING "BEAR WITH ME FOR A MOMENT", PEOPLE TAKE A WHILE TO FIGURE OUT THAT YOU'RE JUST SHOWING THEM RANDOM SLIDES.
Take-home messages

(1) ___________

(2) ___________

(3) ___________

Goal
I. Outlines are
   a. Essential for planning a good talk
   b. Worth the trouble
   c. Not as boring as you think

II. For short talks
   a. You may not need to
   b. Display your outline because
   c. They can lead to awkward pauses

III. And
   a. They may not be necessary if your
   b. Talk follows a logical progression
Possible TV commercial campaign for Taco Bell. By N8VanDyke
Personality
Personality
Possible TV commercial campaign for Taco Bell. By NBVanDyke
Improving your Undergraduate Research Presentation

Review and Revision

T. Olsen
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. On Equations
VI. Know your Audience
# Review & Revision

I. The “Scientific American” Test

II. A Sequence of Practice & Revision

III. Concrete Visualization/Demonstration

IV. Zooming In / Zooming Out

V. On Equations

VI. Know your Audience
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. On Equations
VI. Know your Audience
A Sequence of Practice & Revision

- A Possible Schedule of Presentation / Revision
  - Aloud by yourself
  - To a fellow student, who understands the work
  - If possible, with your research supervisor
  - To a fellow student, not in the field
  - If possible, with your supervisor and students
A Sequence of Practice / Revision

• After each presentation, seek out feedback; e.g.
  – What did the audience take to be your main points?
  – What did your audience find most effective?
  – What did your audience not understand?
  – About what did your audience want to know more?
  – What did your audience (especially your supervisor) think might not be accurate?
  – What did your audience think wasn’t really necessary?

• Use your feedback to improve the presentation
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. On Equations
VI. Know your Audience
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Predictable Motion
Concrete Visualization/Demonstration
Unpredictable Motion
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. On Equations
VI. Know your Audience
Zooming In / Zooming Out
Space-Time Diagrams
Space-Time Diagrams
Space-Time Diagrams
Space-Time Diagrams
Space-Time Diagrams
Space-Time Diagrams
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. **On Equations**
VI. Know your Audience
On Equations

- The amount of time that an equation should appear on the screen is inversely proportional to the density of symbols it contains.
On Equations

\[ F = -kx \]

\[ F = -kx - bv \]

\[ F = -kx + \alpha x^2 - bv \]
Fractal Dimension
Covers 2 Points
Covers 4 Points
$N \alpha R^1; \text{ Dimension} = 1$
\( N \alpha R^2; \text{ Dimension } = 2 \)
Serpinski Triangle
$N \propto R^{1.585}$; Dimension = 1.583
Generalized form of fractal dimension; application of l’Hospital’s rule for q=1
Review & Revision

I. The “Scientific American” Test
II. A Sequence of Practice & Revision
III. Concrete Visualization/Demonstration
IV. Zooming In / Zooming Out
V. On Equations
VI. Know your Audience
1. Communicating to your audience why one should care about the outcome of your research is more important than communicating the results.

2. Giving your audience opportunities to draw their own conclusions will help them to remember your talk.

3. It's more important that a listener learn one new thing than it is for you to present a massive amount of results.

4. A small amount of humor can be very helpful.

5. An (uncomplicated) picture is worth a thousand words.

6. Practice, (I know, it feels awkward, but do it anyway)

7. Cite your sources and thank your mentors/sponsors/colleagues/moral support/etc.

8. End your talk with “Thank You”, not “That’s All”
Thank you for your kind attention.