

Things to Cover in a 50-Minute Technical Job Talk (with 10 minutes for questions)

These are the opinions of Susan R. Hunter as of May 13, 2015, and are subject to change.
If you have comments / suggestions, please email susanhunter@purdue.edu.

BEFORE YOU MAKE YOUR SLIDES:

- Get to know your audience. To whom are you speaking? What is their knowledge base? If graduate students are in attendance, what courses have they likely taken? What key message / story would you like to tell to the audience?

THE TALK:

- (Optional) A Tutorial. (*Everybody follows.*)
 - If your talk uses math or technical content that is not common knowledge for the audience, create a brief up-front, stand-alone tutorial on that topic containing sufficient knowledge to follow at least $1/3 - 2/3$ of the talk, at a broad level.
- (~ 10 min) The Problem. (*Everybody follows.*)
 - What is the problem? (Just the problem. Include nothing about solutions here.)
 - Where does this problem arise? (Why is it an important problem?)
 - Why is the problem hard?
 - **Do not proceed until the audience fully understands the problem and its context. Seek audience confirmation.** Ask for questions, and then pause for at least 10 seconds. (Practice how it feels to wait for 10 seconds. Count in your head if it helps.)
- (~ 5 min) Existing Solutions.
 - What has been done already to solve this problem? (*At least people in your area follow, if not everybody.*)
 - What gap remains in this work? (*Everybody follows.*)
 - What is YOUR research contribution to fill this gap? (*Everybody follows.*)
- (~ 30 minutes, minus tutorial time) Your Solution.
 - Distill the essence of your contribution 1 or 2 sentences that an undergraduate would understand. State it up front and at the end. (*Everybody follows.*)
 - What is your solution?
 - * Up to 15 minutes of this portion (but no more!) can be used to showcase your competence, although people in your area should retain a broad idea of what you are doing. (*Nobody follows completely, but people in your area retain the broad idea.*)
 - Why is your solution innovative? (*At least people in your area follow, if not everybody.*)
 - What is the impact of your solution? (*At least people in your area follow, if not everybody.*)
 - How does it compare to the other solutions? (*At least people in your area follow, if not everybody.*)
 - **Use copious pictures!** Outside of the 15 minutes in which it is okay if almost nobody follows, avoid math-only slides. Math + picture slides are great, as long as you provide detailed explanations for all notation.
- (~ 5 min) Where will you go from here? (*Everybody follows.*)
 - Tell the audience again what you have accomplished. What work remains on this topic?
 - What are its potential applications?
 - How do you see yourself as a researcher, and what questions are you interested in pursuing next?
- (~ 10 min) Questions.
 - **Do not run over!** Running over time gives the impression that you (i) do not respect the audience's time, or (ii) did not prepare, or (iii) cannot rise above the details enough to tell a story in 50 minutes. All of these are *very very bad*.