

Hauber Summer Research Fellows

Introduction to Science Writing
The Loyola Writing Center

•
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Lots of Questions

How to give a scientific presentation...

How to write a scientific paper...

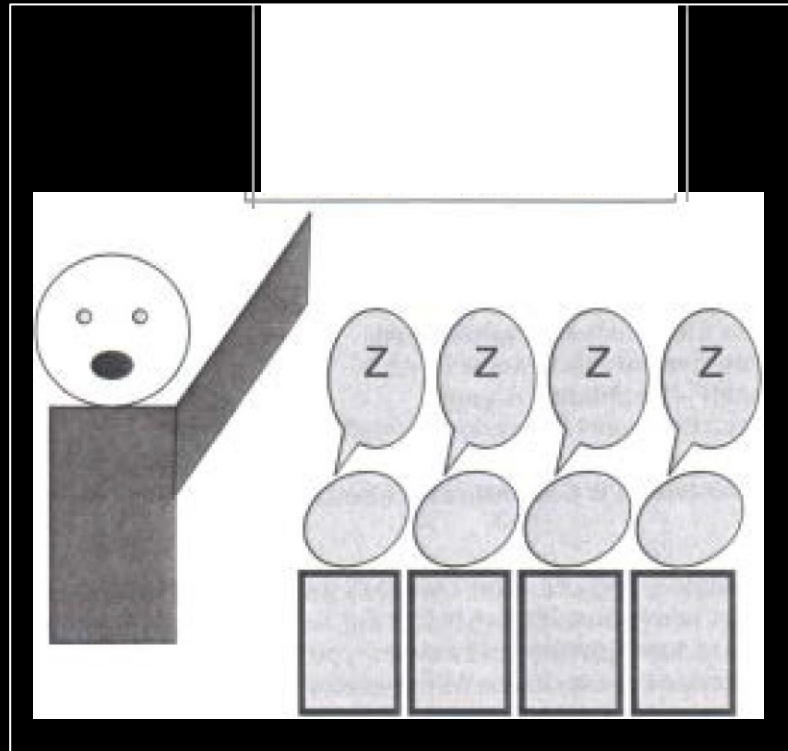
How to develop an abstract...

How to use APA style...

How to use/generate a rubric for peer review of presentations?



How To Give A Research Talk

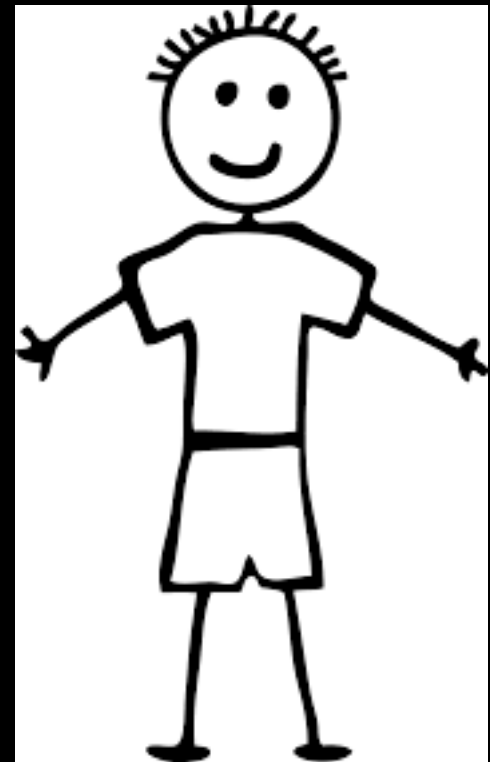


The Writing Center acknowledges materials graciously provided by Dr. J. John Cohen, U of Colorado School of Medicine

If Your Work Is Good, You Look Good

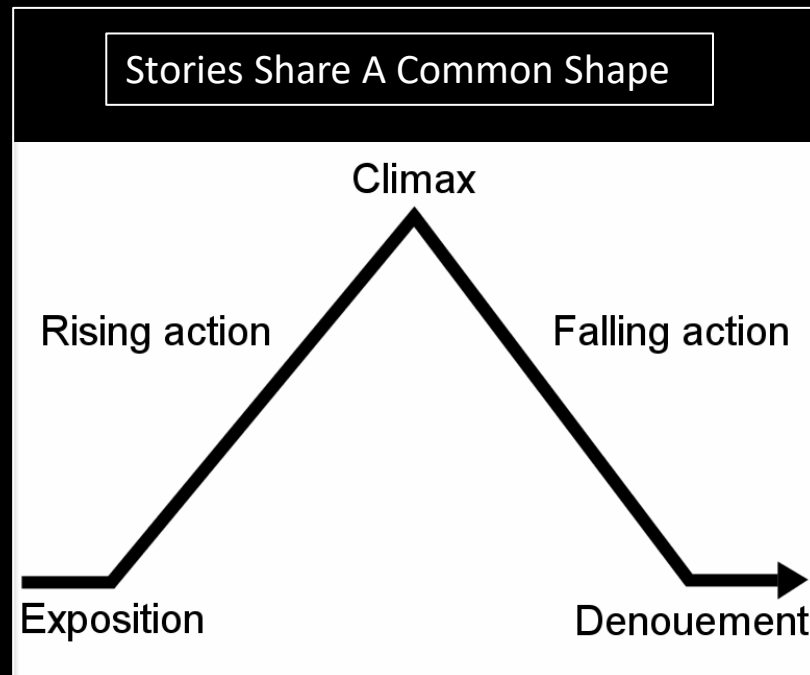
- First, spend your energy on the best explanation of the work, then worry about the elegance of the power point.

- Be organized
- Be articulate
- Start/finish on time
- Practice before hand!
- Explore university templates



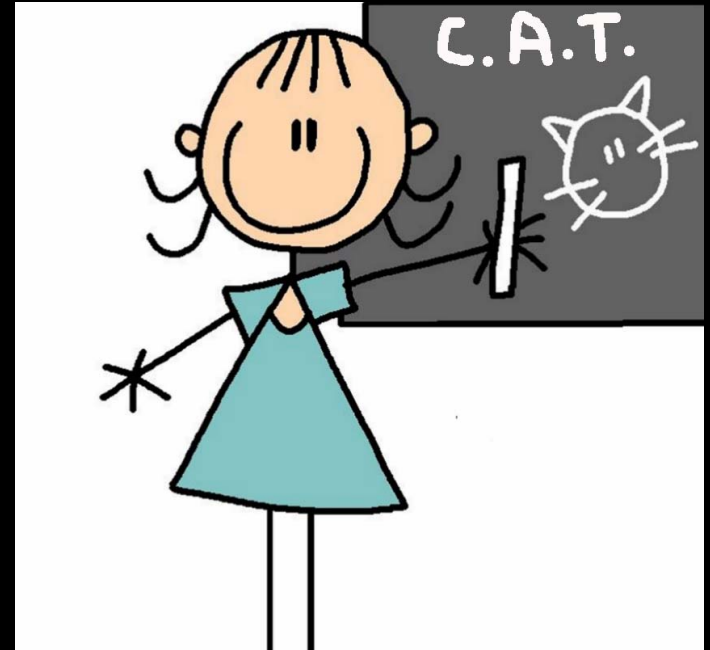
What Should I Present?

- Tell the story of your research.
- A short talk reveals what you wanted to do, what you did, what happened, what it might mean, and maybe, where you go from here.



Begin With Review

- Audiences appreciate having the background explained.
- It helps people remember your talk if you review the necessary **concepts** and **key terms** before you dive in.



Where Should I Focus?

- Save extra time to discuss the implications of your results.
- Don't dwell on methods unless they are novel or unique.
 - Be succinct: “We stained the cells of the onion with iodine. If they are positive they look like this [photo A], if they are negative like so [photo B].”
- 3 points that people remember are better than 12 they forget. **Don't try to do too much!**

Example of Research as a Story

	Narrative Flow	Specifics for talk
Context	There is a problem in the world	Each year in the US 70,000 people are hospitalized with food poisoning, and 6,000 die.
Rising Action	We made a pertinent observation when thinking about the problem:	Many cases seem to be caused by <i>Bacillus cereus</i> , which makes an unfamiliar toxin.
Challenge	This made us wonder:	if it triggers a pathway we can block?
Methods	The method we used to see was:	Flow cytometry (illustrated) and a DNA fragmentation assay (diagrammed)
Climax	And we found:	It induces apoptosis in femtomolar concentrations!!!
Falling Action	That matters because ...	That is one toxic molecule. It doesn't take much to kill you.
	And because . . .	Ingestion of the toxin causes lethal apoptosis in mice, but it can be blocked with genistein
Denouement	Our next steps will be:	Find out which cells are the target in vivo and see if this could be applied to humans.
	"Thank you very much."	

Notes on PowerPoint

- Plan on one slide per two minutes of allotted time as a general rule, especially if you are reviewing data.
- **Save time for questions** at the end.
- Fonts should be 20 point or larger.
- Images should be no larger than 800x600.

Pro Tips

- Practice before hand, in the room if possible.
- Have a back up of the presentation in the cloud, in your email, on a thumb drive, etc.
- If possible bring paper copies of your presentation in case of technical failure. They also make nice handouts for note-taking.
- Leave the audience with a S.T.A.R.
“Something They will Always Remember.”

Research Writing

- Structure: I (Intro) M (Methods) R (Results) A (Analysis) D (Discussion) = “**IMRAD**”
- IMR are fairly formulaic, analysis and discussion are more challenging and stress creative/critical thinking.
 - Analysis means identifying potentially meaningful patterns in the data.
 - The discussion looks closely at the data for/against each different, significant possible meaning—and it usually does so while locating that argument in the context of current existing research.
- Explore guides:
<https://writing.colostate.edu/guides/guide.cfm?guideid=83>

Abstracts

- Since we are on the internet let's look at one of the many excellent "libGuides" available on composing scientific abstracts.
- <https://libguides.usc.edu/writingguide/abstract>
- Important: You **write the abstract after the paper is done.**

APA Style

- So many resources exist online. Many YouTube Videos walk you through how to set up Microsoft Word for APA Style.
- The Writing Center collects useful links:
<https://www.loyola.edu/departments/writing-center/resources/apa-style>
- Writing Center tutors will also help you review and help you learn to use the book and/or online resources.

Presentation Rubric

Categories	Qualities Assessed	Excellent	Good	Fair	Needs Work
Audience Engagement	Verbal presentation, Body language	Maintains eye contact, stands confidently, speaks authoritatively and clearly	More so	Less so	Reading from notes/slides; hard to hear; uses 'um' or 'like' as a crutch; shows nervous tics
Content	Smart, relevant, stimulating	Accurate, current, on point, witty, and surprisng	More so	Less so	Confusing in parts, questions about accuracy, lacking continuity
Slides	Aesthetic and funcitonal design	Clear and effective use of bullets, color, images, transitions, balance of white space	some inconsistency; longer text starts to creep in; some graphics and color	mostly text, full sentences, bland design, lack of transition	very wordy, black and white, hard to follow
Energy Level	Passion for subject matter	Enthusiastic	More so	Less so	Monotone, soft voice
Time Management	Group Planning and rehearsal	Spot on for 10 minutes	w/in 1 or 2 minutes	+/- 2-5 minutes	Off by 5 or more minutes