

MITOCW | mitres16-9960-how_to_organize_a_research_paper_captions

[Morse code beeps] [Whoosh]

[Helicopter rotor]

Hi. My name is Annika Thomas, and I'm a fellow with the AeroAstro Communication Lab at MIT, and today we're going to be talking about how to organize a research paper.

By the end of this lesson, you should be able to understand that organization is important for an audience's understanding of a research paper.

You'll be able to use common organization templates to craft a cohesive research story, and you'll be able to develop central arguments and organizational structure of a paper.

So we're going to start off with a brief introductory activity where you're going to organize paper claims.

So go ahead and open up the activity called "Organize Paper Claims" and take about five minutes to organize these lettered claims into the story for a research paper.

Write the sequence of letters from A to J in your chosen order, down, and then we can compare it with the next slide, where we have the actual answers of how this research paper was organized.

[Alien spaceship beeps]

So in the paper "Length Scaling in Spacecraft Dynamics", this is the organization of the claims within the research paper.

And you might have some little discrepancies or changes in the way in which you organize these specifically, but they should follow roughly the same format where it goes from more general ideas into specifics and then back into general ideas again.

And so we're going to talk a little bit about this structure of papers, which is the way that you should be presenting material in your research papers.

So we use what's called the hourglass approach, where the hourglass structure is a measure of generality within your paper.

So you start off with more general things like establishing significance, describing the status quo, and identifying the gap that you're addressing with your paper.

Then you move into your work of addressing the problem where you talk about what did you do?

You fill the gap with your research and then reestablish significance in the context of the field.

Now this hourglass can look a bit different.

The shape of it is largely dependent on your audience.

If there's a larger bowl, this is usually focused more towards a general audience that doesn't have as much background information on what you're working on.

If you're working with an audience that has a similar experience and background to you, you might have a longer stem instead, where you are talking about the specifics of what you did, and not spending as much time establishing kind of the generality of your work.

So your paper is going to be comprised of what we call arguments.

And arguments are a combination of claims, evidence, and reasoning.

Your claim is a statement of our understanding about a phenomenon, the results of some study or you as the author, and your view of the field.

Your evidence is your quantitative or qualitative data that is used to support that claim, and your reasoning is the justification of that claim, which shows how the evidence specifically supports that claim.

And when you shape these arguments, we actually work backwards.

We start by gathering evidence, including notes, results, slides, etc.

Then we can rearrange that material, that evidence, until we start to see a logical series of conclusions.

Next, we identify thematic bins that correspond to different claims.

And finally we tie that evidence together, those claims, into a mean claim that has reasoning associated with it.

So remember, when you're working backwards and you're shaping these arguments, that the goal of your paper is to prove that you did something new and useful.

So just to recap, the two main tools that you learned about during this lesson for organizing a research paper include, first off, crafting your research story using the hourglass approach, of kind of changing the generality of what you're talking about based on your audience.

Next, we learned how to develop arguments using claims, evidence, and reasoning.

And now you should be able to use common organization templates to craft a cohesive research story and to develop the central arguments in organizational structure of your research paper.

[Morse code beeps]