

Paper and Presentation Laws

Laurie Williams's Laws – 1/5

1. Know thy audience
2. Keep it positive
 - Julia: your own work, future work, related work
3. Just say it in plain English
4. Define it before you use it
 - Marsha: in talks, each slide should be as self-contained as possible. Use examples to define terms
5. Be consistent
 - Julia: terminology, font, slide formatting

Laurie Williams's Laws – 2/5

6. Who will benefit from your work
7. Papers can always improve
8. Make use of bulleted lists
 - Marsha: bullets are useful in talks. In papers, it is not practical to write in bullets because of the amount of content, but we should think in bullets
9. Data talk. Statistics shout
 - Faridah: avoid controversial analogies
10. Trust Yoda. Do. Or do not. There is no try

Laurie Williams's Laws – 3/5

11. Never use superlatives

- Marsha: it is more important to have a point in the paper, whether some words are superlatives are less relevant
- Julia: yes but still, do not use superlatives. Do not overstate your problem, do not oversell your solution

12. Their perception is your reality

- Marsha: if people don't understand us, it is our failure
- Julia: papers, program committees, job interviews, promotions...

13. What are you telling people to do next?

- Julia: people should be inspired after listening to the talk (to apply the technique, to solve the problem, to apply the same research method...)

Laurie Williams's Laws – 4/5

14. If you don't believe in your work, who will?

15. Nobody is above feedback.

- Marsha: even big cheeses can use feedback, but don't be obnoxious. How to get to know big cheeses: go to conferences and go to talks by big cheese, go to them and say: "I really enjoy the work and I am working on these related things, what do you think about this work..."
- Julia: getting feedback is hard, even for big cheeses, but you get used to it

Laurie Williams's Laws – 5/5

16. Don't ask your audience to read another paper to understand yours
 - Julia: your papers should be self contained and explain the needed background (in the background section)
17. Presentation is as important as good research.
 - Marsha: sometimes presentation is more important
 - Julia: both are needed. With a good presentation, you can full some people for some time, but not all people all of the time.
18. Don't oversell
19. An unpublished dissertation might as well not exist
 - Julia: the only useful part of a thesis is related work

Marsha Chechik's Laws – 1/4

About paper-writing:

1. Deadlines are important
2. Publish your data and be complete about it
3. Think of the workflow (or architecture) of your solution. Start with a motivating example that allows you to explain your problem and define your terms
4. Tell a story. Whatever doesn't fit in the story does not need to be in the paper (more so for the talk). Tell the story first, add discussion about various pros and cons, choices, ideas etc. afterwards

Marsha Chechik's Laws – 2/4

About paper-writing:

5. Think hard about research questions and make sure they are not yes/no questions (unless it is hypothesis testing)
6. No experiments are perfect. Always add threats to validity. Not all threats to validity can be fully mitigated, nothing wrong with that.
7. What are the rows and columns of your table of numbers? How do they connect with your research questions?

Marsha Chechik's Laws – 3/4

About presentation:

1. Presenter should own the research. When people ask a question, don't be like "oh this part is done by someone else, let them explain", instead try to explain and add "if you wish to know more details, talk to someone in the audience that is in charge of this part of the work"
2. Number the slides, avoid funny fonts, do not put lots of text on the slides
 - Julia: 36 words for novice, 18 words for pros 😊
3. Put as much content as possible on the slides
 - Julia: content != words
 - Julia: One thought per slide, one slide per thought

Marsha Chechik's Laws – 4/4

About presentation:

4. In presentations, find the right level of abstraction to communicate the whys and a bit of importance of the results. Hows are in the paper. If the audience do not understand the why there is no point explaining the how.
5. When people listen to your talk, they should come out with who does what and some oomph, but not the details of the work, details should be found in the paper.
6. Do a dry run, and then another, and another. Be enthusiastic about the material.
7. Start with an example.

Congrats! You are going to present a paper at a conference/workshop/symposium/etc.!

Here is a non-exhaustive list of tips in no particular order.

1. You are not actually presenting a paper. The paper is the result of research work you have performed. The research is what you're **actually** presenting: the approach, the reasoning behind, the insights you obtained, and how your work advances the state of the art and how it expands the existing body of knowledge.
2. No matter how much time you're given for your presentation, it is not enough to present the work in detail, so that cannot be the goal. The actual goal is twofold:
 - a. You are trying to convince people that your work is worthy of their attention, and that they should have a look at the paper
 - b. You are presenting **yourself**. In the end your goal is to be known for that work you presented, because... connections are everything.
3. Not everyone (maybe nobody!) knows who you are, so introduce yourself well. Make sure people know how to contact you.
4. Do not try to pack everything into the presentation, but rather get to the salient points you want to bring over, thus creating a "message" that you want people to take away from your presentation.
5. Ignore the audience: it doesn't matter how many people there are, and do not judge your "(in)success" based on audience size.
6. Do not ignore the audience: you're talking to them (not to the projection, not to the floor), and they are giving you their (hopefully undivided) attention. Observe them, learn from their reactions.

Michele Lanza, University of Lugano, Switzerland

7. Consider that room size varies wildly. This implies large enough font size, high contrast slides, speak to the whole room.
8. Buy a remote clicker to advance your slides – it unleashes you from the computer.
9. Make sure your computer has a charged battery.
10. Slides do not matter: Your slides are **not** your presentation; they are just a visual aid to support your narrative.
11. Slides matter: the better they are, the better they support you. Well done slides denote depth, seriousness and professionalism. Run a spell checker.
12. Rehearse. Rehearse. Was it mentioned that you should rehearse? Rehearse.
13. Make sure you try the setup beforehand and show up ahead of time. Introduce yourself to the session chair. Murphy's law and all that.
14. The more presentations you give, the better you get at it: do not forego opportunities to present.
15. Prepare also for a slide-less “elevator pitch” version of your talk: something you can tell someone within a very limited time frame.

Michele Lanza, University of Lugano, Switzerland

16. The audience is your friend: they have no interest in you failing at the presentation, so: there's no need to be afraid. Stage fright is normal, even for veterans, it denotes that you (still) care, which is good.
17. When you are asked questions, take the time to repeat/rephrase the question loudly, it will help you think about what you say and also helps the audience hear the question again.
18. After the session do not run off, but stick around, sometimes people in the audience prefer to ask their questions in a more private setting.
19. Refrain from copy-pasting things (tables, charts, etc.) from the paper into the slides. It denotes a certain laziness in your side.
20. Giving presentations is fun, so...enjoy the moment!

Matt Might

1. The audience determines the talk.
2. Practice almost makes perfect.
3. Nervous energy is exploitable.
4. Every talk should motivate a problem.
5. An academic talk is about an idea, not a paper.
6. Slides must not overwhelm the viewer.
7. Images and diagrams are better than text.
8. Math's benefit must outweigh the loss of attention.
9. Style matters.
10. Questions are not random.

Bonus:

Top 10 Proof Techniques NOT Allowed in 6.042

10. **Proof by throwing in the kitchen sink:** The author writes down every theorem or result known to mankind and then adds a few more just for good measure. When questioned later, the author correctly observes that the proof contains all the key facts needed to actually prove the result. Very popular strategy on 6.042 exams. Known to result in extra credit with sufficient whining.
9. **Proof by example:** The author gives only the case $n = 2$ and suggests that it contains most of the ideas of the general proof.
8. **Proof by vigorous handwaving:** A faculty favorite. Works well in any classroom or seminar setting.
7. **Proof by cumbersome notation:** Best done with access to at least four alphabets and special symbols. Helps to speak several foreign languages.
6. **Proof by exhaustion:** An issue or two of a journal devoted to your proof is useful. Works well in combination with proof by throwing in the kitchen sink and proof by cumbersome notation.
5. **Proof by omission:**
 - "The reader may easily supply the details."
 - "The other 253 cases are analogous."
 - "..."
4. **Proof by picture:** A more convincing form of proof by example. Combines well with proof by omission.
3. **Proof by vehement assertion:** It is useful to have some kind of authority in relation to the audience.
2. **Proof by appeal to intuition:** Cloud-shaped drawings frequently help here. Can be seen on 6.042 exams when there was not time to include a complete proof by throwing in the kitchen sink.
1. **Proof by reference to eminent authority:**
 - "I saw Fermat in the elevator and he said he had a proof . . ."