Math DRP Presentation Guidelines

Gracie Conte

Each semester, the UNC math DRP culminates with presentation sessions in which the undergraduate participants give short talks on the material they have learned. The DRP presentation colloquia are intended to be a low-stress way for students to gain experience in communicating math to an audience in a formal setting. Below are some tips for giving DRP presentations and math talks in general.

Practice

Practice is the most important thing you can do to ensure that your talk is successful. Since the DRP talks are so short, you can and should practice the talk at least twice (preferably three times), and at least once with your mentor. Make sure you time yourself to make sure your talk isn't too long or too short.

Format

Students will give either slide talks or of chalk talks. Mentors and mentee pairs should of course discuss which format is appropriate for the mentee's talk.

Material

- The talks should be approximately **15 minutes**; this is not enough time to present everything a you have learned. Instead, you should think of the presentations as a chance to talk about a small sample of the material you have studied: give some basic definitions, present one or two interesting examples, and/or give one or two theorems.
- Wave your hands! Don't show the audience every nitty-gritty detail of your calculations. Get the main ideas across, and then tell them that if they are interested, you can direct them to the appropriate sources which contain all the relevant details. No one wants to watch you compute integrals for 15 minutes.
- At the same time, don't assume too much knowledge from the audience. After studying something for a whole semester, things will become obvious to you but not necessarily everyone else.
  - Math is a broad topic and it is possible that even people getting their PhD's may not have seen or worked with what you talk about.
  - Try to make your talk accessible to people who have never had a class over the 300 level.
  - Be careful not to use specialized definitions that others in the room will not know.

  A good talk will feel like you are assuming your audience is very stupid: you need to write more, repeat more, and explain more than you think you should have to.

- Give people a reason to care. Try to relate what you are talking about to other mathematical objects that the audience might be familiar with or give some applications, perhaps even to the real world. In general, be considerate of your audience, and remember that the purpose of a talk is for those listening to learn something. That being said...
- Have one main punchline or idea and make it clear! Find the one thing you want your audience take away from your talk. This will keep you on task and keep the audience engaged since they will know why they are there.
- This one main idea should be what determines the structure of the talk. You want the audience to hear about this one cool theorem or example, so the rest of your talk should be devoted to building up the necessary background and intuition so that you audience can understand and appreciate your main point.

General Presentation Advice

- **Make sure that you fully understand the whole content of your talk.** If you can't understand it, you can't explain it. Don't repeat something because you read or heard it. Use the skills that you have cultivated to come to a complete understanding. Another general rule, do not say anything you are not prepared to answer questions about.
- Face the audience as much as possible. Try not to stand between the public and what you are presenting. You make a better door than a window.
- How to use slides
  - Don't just read your slides! Just because you are using slides does not mean you are restricted to them.
  - It's best to have as few words on your slides as possible (use them for diagrams, visualizations, etc). If you have a large chunk of words to present, use bullet points to summarize the information and verbally paraphrase the content. If you're going to put in a theorem or definition, be terse! Cluttered slides are uninformative and often detract from what you are saying as the audience tries to read the slide.
  - Strategic use of the board can be used to great effect. If there's a calculation you want to emphasize, write it out on the board and put the punchline on the slide. The audience will digest information better this way.
- How to do a chalk talk
  - If you choose to give a chalk talk, it is even more important that you use the board strategically. Determine ahead of time how many sections of board there are in the presentation room.
  - Create a section of the board to keep important definitions or theorems so that when you use them later, the audience can easily remember them. Determine ahead of time where you want to place your important theorems or information to remember.

  - You should also predetermine how you are going to organize your use of the rest of the boards so as to avoid erasing the important stuff. It is also very helpful to number your chalkboards as you progress throughout the talk. Just write a number in the top corner every time you move to a new section of the board. This will help your audience follow the progression of your talk if they need to refer back to things you wrote previously.

- When answering questions, think for at least five seconds first if you don't know the answer immediately. It may feel awkward for you, but the room will think you are formulating a proper answer (which you should be).

- Last piece of advice. We're not here to judge you! This is probably your first time giving a technical math presentation. We're here to help you figure out the right or wrong way to do things before it actually matters. So make sure to breath and don't be (too) afraid of us.