

Guide to the Arizona Winter School

Welcome to the Arizona Winter School! The next five days are going to be intense, so before you plunge in, look over these suggestions on how to get the most out of them. We've divided the suggestions into two sections, one for students and one for speakers (feel free to cheat and look at the other section if you want).

1 For students

The most important thing to remember is that the Arizona Winter School is for you, not for the speakers, postdocs, or other people attending the workshop. The courses, readings, projects, and help sessions have been designed for you. Take part in them.

1.1 How it all works

There are four topics for the School. For each topic we have invited one or two experts to give a series of talks, for which lecture notes are posted in advance. We have also asked the speakers to propose in advance a related project on which some of you will be working. You will be assigned in groups to one of the projects, will work on it with the corresponding speaker (your team leader) both before and during the school, and will make a presentation with your team members at the end. Even if you are not assigned to a project, you are welcome to join in and work on the problem (but in most cases you will not be part of the formal presentation).

1.2 Before the school (i.e., now!)

Read the project descriptions and the lecture notes that have been posted on the AWS web site. Read at least the ones for your group, and all of them if at all possible. Follow up on the references cited, and discuss them with your team members. Start to think about the projects that have been proposed. If you don't understand, email your team leader and your team members with your questions.

You aren't going to have a lot of time to do all this during the school itself. Come as prepared as you possibly can and you will get a lot more out of it. If you feel overwhelmed by the project description, show it and the lecture notes

to your advisor and ask for suggested background reading. If you have time, organize a local seminar at your institution on background material for one or more of the topics.

1.3 Lectures

Read the notes in advance! Don't be afraid to ask questions during the lectures. Grab the front rows; they are for you. If you don't want to ask a question during the lecture, go up to the speaker afterwards. If there are points you don't understand, ask the speaker to clarify them.

1.4 Working groups

There's a good chance the some of you will get stuck at some point during your work on your project. Don't think that you are the only one! There are plenty of others in the same boat (and more who have been in it in previous years and come back for a more relaxing experience). There are many people you can ask for help: your team leader, your fellow team members, a friendly postdoc or senior graduate student who happens to be floating around, one of the organizers of the school. Go back and look at the lecture notes and papers that you read in preparation for the school, and see if they shed any new light on the problem.

1.5 Evening sessions

These are where most of the work and learning happens. Take advantage of them. Ask one of the speakers to expand on that day's topic, or to give a preview of what is coming. Grab your team leader for an extended work session. Winter School alums will probably come down to watch you suffer; make them work by helping you (you'll be able to pick them by the fond smile of reminiscence on their faces).

"Ombudspeople" (typically a Winter School alum and a Southwestern Center member) will be available at the evening sessions and will try to resolve any issues that come up. If you are having trouble, but not quite sure who to ask or how to ask about it, then they are the people to go to.

1.6 Professional development component

These activities are helpful and there is no exam on them. Take advantage of them.

1.7 Presentations

You will not have a lot of time, so make your presentation as efficient as possible. Practice your presentation with other members of the group. Most novice speakers make the mistake of preparing too much material; don't try to fill

up all the time available. You will have questions from the audience, and it generally takes longer to explain something than it does to think it through in your head. If you have messy details to report—don't report them. Summarize the key points, or put them on an overhead slide. Coordinate with your team members so that you use the same notation and don't have to repeat it.

1.8 What to do in your spare time

You don't need to worry about this, you won't have any.

2 For speakers

2.1 Lectures

The most important thing to remember is that the Arizona Winter School is not for the big shots sitting in the front row (they shouldn't even be there), it is for the students. There is a wide range of levels, and we want to serve them all. Many AWS speakers have made the mistake of preparing too much material for the time available. It is better to make the talks clear and understandable, and use the evening question sessions for filling in extra details.

2.2 Working groups

A team of graduate students will be assigned the problems you proposed. You are their team leader. You are responsible for getting them through the project, and preparing them to make a coherent presentation on their work at the end of the school. Take the time to get to know them by email before the conference. If there are some who seem less prepared, suggest readings to them. Meet with your students early during the school, and set up a regular system of work sessions with them. In addition to mathematical help, they may well need help on how to prepare a presentation. Serious attention to the team projects can pay off well; in the past, some of the projects have produced publishable work.

2.3 Evening question sessions

The evening question sessions are a crucial part of your job; that's where students who didn't understand a point in your lecture can ask you about it, and that's where your team members will get guidance from you. You might want to enlist the help of a senior graduate student or postdoc who is not directly involved in your team.

2.4 What to do in your spare time

Alas, you won't have any of this either.