Questions about Grad School

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Timeline application?

1. Deadlines for grad applications come in waves. The first batch will be due December 10 and also December 15. There will be a second wave around the first week of January and a third batch would be around the end of January/beginning of February. Make sure to search for all of this information the summer of that application season. Make a spreadsheet with deadlines of specific schools, gre requirements, do they offer fellowships that you could also apply for (for this, ask them or search in their website--this might be a different deadline).

How to make your application competitive? What do grad schools look for in your application?

1. Research, internships, breadth of courses taken, involvement in outreach, etc.
2. Grad schools look at everything including what was mentioned in the previous bullet.

What is the typical workload like? What's the breakdown in how much time are you spending on classes/research/teaching? What is a good work/life balance in grad school?

1. The first year is dedicated mostly to classes, passing your qualifying exams and TAing (some schools may just want you to grade instead of TAing, some might do neither). Set a schedule for yourself every week and make sure it is reasonable. If you treat grad school like a job, then you should consider working on homework, attending classes and TAing in that 40 hours per week window. The breakdown varies for people.
2. Some programs are more course-heavy than others in the first year, so you should take your preferences into account when applying to schools!

What are the most important factors about choosing a program?

1. *Community*: Find a program that will support who you are and will meet your needs (whichever they may be). Ask grad students what is their community like, i.e. competitive vs collaborative. Ask what grad students do besides math, what are their hobbies? What activities do they plan together? Is there a common hangout place that they like to go? If these are important for you, it is worth asking so that you know what you are getting yourself into.

2. *Research*: If you know what type of research you like, look into programs that offer a good program based on your interests. If not, make sure that the program you are interested in offers different areas of research, AND a variety of professors who are active in that area (active here means that they continue to do math research and keep publishing). For example, you may want to go to place X but you are there and find out there is only one professor who does what you want and they are not a good match for you -- this can have an impact on you. Consider emailing professors or their students to see if there are people you could see yourself working with.
3. *Location*: If you are particular about location, then you should definitely take this into consideration. For example, maybe you like hiking (and it is something that makes you happy), is the potential place you are planning to live the next 5-6 years of your life a place where you can hike? Make sure that if you have some passions/hobbies that you are able to keep practicing them. Does the town have your favorite grocery stores? What if you like to get certain food but maybe it will not be available there? These all play a role if location matters for you. Grad school can be tough, so you want to make sure that you can be happy outside the program too.

To how many places should one apply?

1. About 8-10 grad schools. This list should include at least 3 safety schools (that you and your advisor/professor/mentor agree that you would definitely get in), 3-4 schools you have a chance to get in but are not too sure about, and 2-3 dream schools.
2. Ask for fee waivers to the schools you plan to apply to. Most of the time they may not have it on their website but you should definitely ask, the worst that can happen is they say no. Explain your situation (but also have someone read over your email!)

Is doing research here at ICERM similar to research in grad school? What is different and similar with research here versus research in grad school?

1. It is different since you will be working with yourself only. (although you may have the opportunity to work on collaborative projects in grad school! This might look a little different than at ICERM in that you will probably not be assigned a group of people to work with, but your advisor might help you connect with collaborators)

What to do the summer before grad school? How should one prepare preliminarily for the first semester?

1. Most people have said it is best to just take this summer as your vacation. It is most likely that your summers will involve some type of academics in one way or another when you are in grad school. I would recommend to enjoy this summer.
2. For women in math, there is a program called *Enhancing Diversity in Graduate Education* (*EDGE*) which you can apply the winter of your last year in undergrad. This summer program is a 4 week long program that takes place in different universities. If you get accepted, they book a flight for you so you can join 13 other students. At this program you take 2 classes (algebra and analysis) the first 2 weeks and you take 2 other classes (measure theory and some other class that varies from year to year) for the last 2 weeks. Check out their website for more info!
3. I did a combination of getting a summer job for part of the summer (since I needed to start paying off loans) and rested and got settled in the new location for the rest of the summer. -Max

Should you do a masters instead of PhD?

1. The advice is always: Apply for a PhD and if you decide the PhD is not for you, leave with a masters. This means you can always leave your PhD program after completing all requirements of their masters. This way, it saves you money (most masters degrees are out of pocket). People have done this and it does not harm them but also you do not have to "pay back" anything.
2. Those of us that did detour to a masters before our PhD don't regret it, but there are usually specific circumstances that made that detour a good decision. 1) fully funded masters programs are rare, and unless you can get that funding, you really should consider accepting a PhD program over a masters. 2) specific people you want to work with that you know are capable of getting you through the masters in a two year time frame, and into a PhD if that is what you want.

What if you do not get into grad school? What should you do?

1. You should always apply to safety schools (see bullet point on how many to apply to). But in the worst case scenario, ask your mentors/professors if there are any opportunities that you could do so that you can boost your application for the next round. Try to find out about Post-Baccalaureate programs that some schools may offer (this program is intended for students who would like to expand their math skills before applying to grad school).

How do you know if you should take time between undergrad and grad school? (reasons such as burnout)

1. *Personal*: By the time you graduate, most people have a decent idea of how they respond to stress, how you dealt with a full course load and work. During the

start of your senior year, I'd take some time to check in on your mental health. Many schools offer counseling services, and I highly recommend using these resources. You'll need to really consider your mental and physical health before you throw yourself into another stressful program. If you realize you have burned yourself out, you need to take that into consideration.

2. *Practical*: Money is an important part of this decision tree, unfortunately. If you have a source of income outside of being a student worker, it may be easier to make the decision to give yourself some time between programs. You'll need to consider your options and have a back up plan if you decide to wait on grad school.
3. *Balancing the two*: This is going to look different depending on the individual. I went straight into my grad program, but my sister saved up enough during her final semester so that she could take a semester off and recover from her program. Each of those decisions were the right one for us, but would not have worked out well for the other person.

What are other opportunities/alternatives instead of going straight to grad school (gap year)?

1. This will depend heavily on what you want to do with your graduate degree - data science opportunities vs. educator

How to prepare for the GRE?

1. See printed handout.

Is the GRE worth taking if most of the places one person is considering have the GRE as optional in the application?

1. This depends, there are two GREs: the general GRE and the subject GRE. Most places require just the general, some require both and some neither. If either is optional, you should just see what you get, if you do not like the score then do not report/submit it. But if it is a pretty good score, then report/submit it.

Can you take off for religious holidays?

1. This probably depends on the school.
2. Once your schedule is more research based and less class-based, you can have a talk with your advisor about taking time off!

How should one cope or adapt with the difficulty to be able to be successful?

1. Try to find a group of people that you can talk about your math feelings with! Doing this helped me realize that I wasn't the only one stressed out about whether or not I would be successful.

2. Talking to people outside of math can help put math worries in perspective.
3. Most schools should have counseling services and often have experience working with grad students.

How to make connections?

1. Conferences: If you want to make connections outside your department, you could look into applying/going to math conferences.
2. Seminars/Colloquiums: Your math department may organize seminars for you. You could attend these and meet other professors. Sometimes, students in a specific field organize student seminars without professors. This can be a great opportunity to bond with other students in a less stressful environment.

3. Volunteer opportunities: Some professors run regular programs for local high school students on a yearly basis. Volunteering to help with the events can help you connect with those professors.
4. Hobbies, activities outside of your program can help you meet non-math people.

How important are attending talks, conferences, colloquiums, etc?

1. They are important but you should try to attend only if you can and have time. In your first year, you want to adjust to your program, school, town. Focus on passing your first year classes, completing any requirements such as qualifying exams and others.
2. After adjusting to your new life, you might want to attend talks, conferences and colloquiums to start meeting potential people who you might want to work with.