

Website Notes

The To Do List below assumes that the student is graduating in the Spring of 2050.

To Do List

Throughout undergraduate career

- Keep an achievement journal. The information in this journal will be a very useful resource when writing a personal statement. Many graduate schools require a personal statement. A good personal statement may include a discussion of research experiences, participation in academic clubs, and service to the community. For more information on keeping an achievement journal, see the EXTRAS FOLDER.
 - Maintain good grades.
 - Join an academic club(s) and in general, participate in other extra curricular activities.
 - Seek out research opportunities.
 - Apply for scholarships.
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Some time during the Spring Semester in 2049

- Talk to mentors about graduate school. Possible questions to ask are what are the expectations in graduate school, and what are some of the big differences between graduate school and life at your current institution. In addition to getting your mentor's opinion, this conversation also lets your mentor know that you are thinking about graduate school. If you plan to ask your mentor to write a letter of recommendation, it is best that they are aware of your aspirations ahead of time.
 - Research potential schools. For each school you may apply to, make notes on what is required to apply to that school. For more suggestions on what to look for and what to keep track of, see the EXTRAS FOLDER.
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Early in Summer 2049

- Continue to research schools. If you are planning on applying to PhD programs, perhaps consider some master's programs as well (see* in the Fall 2049 checklist)
- Some schools require a GRE General Test Score and/or a GRE Mathematics Subject Test Score. Identify which tests you plan on taking.

- Some schools require a personal statement. Determine if you will need to write a personal statement.
 - If you must take a GRE test, decide on how much time you will use to prepare for these tests. It is not recommended that you take either of these tests without some preparation and for more on this, see the EXTRAS FOLDER.
 - If you must write a personal statement, write a draft of your personal statement.
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Mid Summer 2049 until start of Fall 2049 Semester.

- Study for the GRE Tests.
 - Write a final version of your personal statement.
 - Determine which schools you plan on applying for.
 - Determine who you will ask for your letters of recommendation.
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Fall 2049

- Continue to prepare for any GRE Tests that you are taking.
- Notify your list of letter writers early in the semester that you would like to see if they would be willing to write a letter of recommendation. If one of your mentors agrees to write a letter, ask if they would like a weekly reminder on when the letter is due.
- If you have a mentor who knows you well, ask for feedback on your personal statement and revise accordingly.
- Once you have a list of willing letter writes, begin the application process with each of your schools. The reason for this is that typically that is how your letter writer obtains a link to upload their letter.
- Take the GRE(s).
- Complete your application with each of your schools.
- About one month before the first application is due, send a friendly reminder to each of your letter writers that their letter must be uploaded by date so and so. Until the letter writer uploads their letter, a weekly reminder through email can be helpful as your mentors are likely very busy people.

- *Develop a backup plan which may include applying to master's programs even if you were only considering PhD programs. You never know what a particular graduate school is looking for and there is some amount of luck at play. Perhaps you had three exams the same week you had to take the GRE Subject Test? Perhaps several of the schools you applied to are looking to build their topology program and your research experiences are in combinatorics?
- While you have a lot of things going on, be sure to keep your grades up.
- Continue to remind letter writers until they have uploaded their letter.
- After the last letter writer has uploaded their letter, check to make sure all of your applications are complete.

Timeline

- Spring 2049 - Talk to mentors about graduate school.
- Spring 2049 - Research potential schools.
- Start of Summer 2049 - Identify which GRE tests you will take.
- Start of Summer 2049 - Draft a personal statement.
- Summer 2049 - Prepare for GRE test(s).
- End of Summer 2049 - Prepare a final draft of your personal statement.
- End of Summer 2049 - Determine which schools you will apply to.
- End of Summer 2049 - Register for GRE test(s) if required.
- Early Fall 2049 - Ask for letters of recommendation.
- Early Fall 2049 - Have mentor review your personal statement and revise accordingly.
- Fall 2049 - Begin application process for each school you will apply to.
- Fall 2049 - Take GRE test(s).
- Fall 2049 - Send weekly to letter writers.
- Fall 2049 - Complete application process.
- Fall 2049 - After all of your letter writers have uploaded their letter, confirm that each application is complete.

Additional Remarks

- On Keeping and Achievement Journal - Throughout your time as an undergraduate, it is recommended that you keep an academic journal. This journal should include activities you have participated in and achievements that you have made as an undergraduate. Examples include involvement in Math Club and other academic clubs, any presentations you may have given, undergraduate research experiences, and scholarships that you have been awarded.

You want to be detailed enough in your journal to where if you need to write about the activity/achievement, you can do so with some detail. For example, compare the two the following two statements that a student who was involved in Math Club could make.

1. I was a member of the Math Club
2. For 3 years I was a member of the Math Club. During these three years, I participated and helped coordinate several events including fundraisers, book sales, and colloquium talks.

The second statement is more descriptive and gives a reviewer a better impression of your role in Math Club. Here is another example concerning scholarships.

1. I won the Academic Excellence by an Undergraduate Mathematics Student Scholarship in Spring 2048.
2. Throughout my undergraduate career I applied for several scholarships and grants. In Spring 2048, I was awarded the Academic Excellence by an Undergraduate Mathematics Student Scholarship in Spring 2048. This award is annually to two undergraduates who must be mathematics majors. It is one of the most prestigious scholarships that a mathematics major at my institution can apply for and several of the previous winners have gone onto graduate programs in mathematics.

Not only will keeping an academic journal help you to describe your accomplishments in greater detail, it will serve as a good record for all of the activities that you participated in. It can be easy to overlook activities that occurred early on in your career and you do not want to do this. For example, suppose as a freshman you volunteered at a science fair for high school students, and as a sophomore you worked at a tutoring center that serviced high schoolers. Independently, these two activities could be viewed as not worth mentioning in a personal statement. However together, one could make an argument that you are ready to participate in outreach activities in graduate school. For example, one could write “I have experience working with high school students through a Science Fair and my job as tutor. I would like to continue to work with high school students in graduate school and participate in outreach activities in the community”

In closing, your personal statement is your chance to convey to reviewers what a great addition you would make to their graduate program. Most likely a reviewer

will have access to your academic transcripts and possibly GRE scores, so you want to tell them what they do not see when looking at transcripts.

- Maintaining Good Grades - In order to make your application as competitive as possible, you may need more than just good grades. Good grades are very important, but other activities like attending conferences, poster presentations, taking the Putnam exam, and research experiences demonstrate that you are engaging in the mathematical community and are willing to do tasks that are not requirements of your major. It can be tricky to find a good balance. You certainly do not want to let your grades be negatively impacted by extra activities. Be sure to keep this in mind as you progress through your undergraduate career.
- Joining Academic Clubs and Other Activities -
- Seeking Out Research Opportunities - There are typically two major components in a PhD program. One component involves passing a set of exams which are often called qualifying exams. The second component is the completion of PhD thesis in which you will have to do original research. Indicators for potential success with qualifying exams are your grades and your GRE scores. What about original research? Here involvement in organized research projects is a plus. This may include participation in an REU or in an independent study course focusing on original research. Occasionally a research project leads to a manuscript that is submitted for publication. At this stage in your mathematical career, it is a real accomplishment to be a author or coauthor on a manuscript, but one should be careful about viewing a research project as being a success only if it leads to a publication. The first step is to get the research experience because research is very different than your course work.
- Applying for Scholarships - It is important to apply for scholarships. It is recommended that you seek at different scholarship opportunities. One place to start is within your department and college. These local scholarships can be less competitive than scholarships offered at the national level. Similar to research experience, applying for a scholarship but not winning should not be viewed as a failure for a couple of reasons. First, just by applying you get the experience of applying for a scholarships. This may include writing a statement about your accomplishments thus far, which is an incredibly important skill. When you apply for any job, you must convince the hiring committee that you will be a valuable asset to their institution. Once you have a job, you may be required to write annual reports about your achievements for that year. Second, applying for scholarships shows that you have the initiative to go out and doing something in addition to your required

coursework. In academics, putting together grant applications is a valued activity that, in some areas, is just as important as having a paper published. In areas such as chemistry and biology, an individual's research program could rely heavily on external funding. In mathematics, grants can sometimes be used for travel to conferences which is crucial for networking and staying current with research trends. Lastly, applying for scholarships is the only way that you can win a scholarship!

- Talking to Mentors about Graduate School

- Researching Potential Schools - When you research potential schools, you should try to be as organized as possible. A spreadsheet is a great way to keep track of certain key features about the schools you are applying for.

First, look at what components are needed to apply to the school. For example, not all universities require a GRE subject test, and some departments require a personal statement that mentions specific faculty members an applicant is interested in working with. This is not a promise that you will work with those members, but demonstrates that you have looked at the faculty and identified research areas that you are interested in. Perhaps you have research experiences in areas that are close to a two professors at a school you are applying for. This would be a good time to mention this and support why you have identified your list of potential advisors.

Next, think about what personal preferences and financial constraints. A typical PhD program is at least 4 years. Is the community surrounding the campus a place that you can see yourself living during graduate school? What types of funding opportunities are available? Is there a tuition waiver? There are many factors to consider. Ultimately what you keep track of is up to you and may vary from person to person.

- GRE Tests - Depending on the schools you are applying to, you may need to take the GRE General Test and/or the GRE Mathematics Subject Test. You should not take either of these tests lightly. More information on the GRE tests can be found on the GRE page. If you think you are already prepared, feel free to try our short practice exam which is not only shorter than the GRE, but more narrow in scope.

- Writing a Personal Statement - Before reading this section it is advisable to read the section on Keeping an Academic Journal.

Many schools require a personal statement. This may sound like a difficult task and it might not be clear how to begin, but this is why you keep an academic journal. When you go to write your personal statement, look back at your journal. Can you identify a theme to your work? Did you participate in several research projects? Were you involved in different outreach activities? The goal is to give the reviewer an idea of what they will get if you are admitted to their graduate program. Grades are on your transcript, so it might be best to emphasize other areas. For example, perhaps you participated in two research projects and while none of them lead to a publication, you did present in a poster session and competed in an undergraduate research competition. You could then market yourself as an active researcher who enjoys presenting their results to the mathematical community. Additionally, you look forward to continuing to do research, establishing your own research program, and present your work at conferences.

Whatever you choose to emphasize in your personal statement, you want to do your best to make it stand out. After reading your personal statement, a reviewer should have no problem saying things like “Applicant X had good grades and GRE scores, but also was very active in the campus community through their participation in clubs and outreach activities like science fairs” or “Applicant X had good grades and GRE scores, and seems to have a lot of interest in research given that they were involved in two research projects and applied for scholarships to help support their research program.”

Timeline

This timeline is based on a student who plans on graduating in the Spring 2010 semester.

- The moment you enter college - Start a journal of activities and achievements throughout your time as an undergraduate student. You want to be detailed enough in your journal to where if you need to write about the activity/achievement, you can do so with some detail. For example, compare “I was a member of the Math Club” versus “For 3 years I was a member of the Math Club. During these three years, I participated and helped coordinate several events including fundraisers, book sales, and colloquium talks.”

In order to make your application as competitive as possible, you may need more than just good grades. Good grades are very important, but other activities like attending conferences, poster presentations, taking the Putnam exam, and research experiences demonstrate that you are engaging in the mathematical community and are willing to do tasks that are not requirements of your major.

It can be tricky to find a good balance: you certainly do not want to let your grades be negatively impacted by extra activities.

Building a CV

- 3rd week of Spring 2009 semester - Begin to talk to professors that know you well. Professors who you have had for more than one course or have done research projects/independent study projects with. One question you should ask is if they would be willing to write a letter of recommendation for a program. Another possible question is suggestions on schools to apply to. You should be prepared to not have immediate answers, and there may be many reasons as to why a professor may not answer immediately. The point is that now they are aware of your situation.
- During Spring 2009 semester - Begin to research schools that you are thinking about applying to. It is ok to aim high, but you should shoot for a spread of different types of schools. A rejection from MIT is worth less than an acceptance from other schools that may not be as prestigious as MIT. When you are researching schools, you may want to organize things like what tests are required to apply (GRE general, GRE subject), application deadlines, and a reasonable guess as to whether or not you would be happy living in the area. Other aspects are requirements of the PhD (qualifying exams, time limits) and funding opportunities (tuition waivers, health care, housing).

Quote from UCSD website: “Departmental support is only offered to Ph.D. students, which typically includes a Teaching Assistantship each academic year as well as full Tuition and Fee Scholarships. This is guaranteed for five years as long as a student is in good academic standing and fulfills all teaching responsibilities satisfactorily. There will be no changes to this policy as long as funds remain available”.

Quote from UCSD website: “1Application Requirements For admission to the graduate programs, a Bachelor’s degree in Mathematics is recommended or a strong background in mathematics with a minimum GPA of 3.0 required. A year’s sequence in both upper-division algebra and real analysis is strongly encouraged.

GRE Tests Requirements The following GRE Tests are required for all applicants:

GRE General Test The GRE General Test is required to apply to all degree programs.

GRE Math Subject Test The GRE Math Subject Test is required to apply to the M.A. in Pure Mathematics, the M.A. in Applied Mathematics, and the Ph.D. in Mathematics programs.

For the M.S. in Statistics program, the requirement for the GRE Math Subject Test may be waived if you will have completed an undergraduate degree in either Pure Mathematics or Applied Mathematics by the time you start at UCSD. However, if your undergraduate degree is not in either Pure Mathematics or Applied Mathematics, you must submit a GRE Math Subject Test score.

Your undergraduate degree must specifically be in Pure Mathematics or Applied Mathematics to waive the GRE Math Subject Test requirement. Sub-disciplines that could be considered applied math (such as Statistics, Accounting, Actuarial Math, Financial Math, Economics, Information Management, etc.) will not waive the GRE Math Subject Test requirement. INCLUDE SAMPLE

There is no required minimum score for the GRE General Test or the GRE Math Subject Test.”

- Spring 2009 Semester - Continue to build CV
- End of Spring 2009 Semester - Meet with professors again about letters of recommendation, discussing what your research has found regarding graduate programs, and seek advice that they may have
- End of Spring 2009 Semester - Take a GRE practice test in mathematics IF there is are programs that you plan to apply to that require a GRE subject score. It is also a good idea to look at the GRE general test.
- Summer 2009 - Continue to build CV
- Summer 2009 - Prepare for GRE Exams
- Summer 2009 - Draft a statement of purpose/personal statement
- Summer 2009 - Continue Researching Schools
- Summer 2009 - Develop a backup plan in the event that your are unlucky and you do not get accepted into a graduate program. This backup plan could involve applying to a masters program at the your current institution and then use this time to obtain a master’s degree and continue building your resume. You may also

want to apply to master's programs at other schools. Some schools do have an option of transferring from a master's program into a PhD program but this will likely involve you doing very well on more than one qualifying examination.

- Start of Fall 2009 Semester - Ask for letters of recommendation. Supply the letter write with a list of schools that you are applying to together with a date at which you will need the letter by. It is likely that the letters will be submitted online and you will never get a copy of the letter. This is one of the reasons that it is important to remind your letter writers as once you have notified them, the letter write must upload their letter to the institutions application program.
- Start of Fall 2009 - Revise statement of purpose/personal statement. If you feel comfortable, you may want to ask one or more of your letter writers to give you feedback on your statement if they have time.
- Start of Fall 2009 - Know how to obtain unofficial transcripts
- Fall 2009 - Register for GRE (see link)
- Fall 2009 - Prepare for GR (see link)
- Fall 2009 - Send frequent reminders concerning letters of recommendation
- Fall 2009 - Take GRE tests (see link)
- End of Fall 2009 - Prepare applications
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Training

- Determine which tests you must train for.
- Take practice tests early on to get a feeling for how much time you must devote to preparing
- Links to training books, both subject and general
- A free practice test for GRE subject
- Our training schedule for the Fall 2009 semester
- Test registration deadlines (rough estimate so that we do not have to update each year or be responsible for test dates)

GRE General

- Description
- Links to books only for general

- Link to website where register for GRE general
- Test registration deadlines link
- Warnings about taking the test seriously

GRE Subject

- Description
- Links to books only for general
- Link to website where register for GRE general
- Test registration deadlines link
- Warnings about taking the test seriously
- LINKS to training program