A Technical Guide to Applications

Overview

Broadly speaking, there is a technical science to putting forth your best application, but there is also an art to finding your niche or “best fit” when designing an application or finding programs to apply to.

Step 1) Explore and develop your own “academic taste”

This takes some time and is something you will continue to refine and develop through your academic career. A good place to start is to keep an open mind and explore a variety of different projects or programs. However, when you find something that strikes your interest and feels promising, try to explore it deeply.

Step 1.5) Ways to do this are: reading courses in the main semester, group Directed Reading Program, RTGs (Research and Training Grants), Freshman Research Initiative, Completing a senior honor’s thesis

Step 2) Find your people

This should probably be both step 2 and step 0. You can begin finding friends who share your interests as early as you like, but finding mentors, such as graduate students, professionals, professors can take a bit more time. It’s up to you to decide whether a person is a good mentor **for you**. We will talk a bit more about this.

Building a network

How to build a mathematical network?

1) **Join mailing lists for your local organizations**
    a) AWM (Association for Women in Mathematics)
    b) Math Club
    c) Math Circles (many universities have some version of this)
    d) SMMG (Sunday Morning Math Group)
    e) **Quick Tip:** If you google "[math topic] mailing list" and you are likely to find an email list run by a group of researchers, usually you can add yourself to the listserv. This is an especially easy (and low-commitment) way to learn about current activities, internships, PhD positions, and conferences.

2) **Make friends with upperclassmen and grad students!**
    a) Hint: Many grad students enjoy talking with undergrads – it gives us the warm and fuzzies when we see you pursuing your mathematical interests! We also are great to talk to when a professor or administrative process seems intimidating - we were in your shoes not too long ago!

3) **Attend department seminars/regular math talks**
    a) Ask permission before attending, but most schools with graduate programs will allow upper-division undergraduate students to attend graduate-level seminars

4) **Attend the office hours by your math professors**
    a) You don't have to have a specific class question, some professors are also willing to talk about your career interests. It's always recommended to ask for advice from more than one person; sometimes it takes a few attempts to find a professor with whom you "click" with.

    b) Talking to your professors about your academic/career goals in addition to class material will help your professors write a letter of recommendation for you later on. A positive, detailed letter

from a professor who knows you well or who understands your growth/progression could be an influential part of your applications.

5) **Don't be afraid to email professors and people in industry if you are genuinely interested in their work/research**
    a) There is a bit of an art to this, so feel free to ask us questions about this

6) **ATTEND CONFERENCES**
    a) Ok, you've already completed step 1 of this
    b) Turn to page [ ] to learn more about conferences and organizations that encourage undergraduate participation.

7) **Update your resume/CV periodically**
    a) i.e.) don't wait until the end of your four years in college to try to update your high-school resume

Nationwide/Local Organizations

Nation-wide Organizations

- OURFA^2M^2
  - https://sites.google.com/view/ourfa2m2
- AWM
  - https://awm-math.org/resources/undergraduates/
- AWM Mentor Network
  - https://awm-math.org/programs/mentor-network/
- EDGE Program
  - https://www.edgeforwomen.org/
- Lathisms
  - https://www.lathisms.org/
- AMS
  - https://www.ams.org/learning-careers/students/undergraduate
- AMS sectional meetings
  - https://www.ams.org/meetings/sectional/sectional.html
- Putnam Exam
  - https://maa.org/putnam/
  - This is totally optional, and mostly just serves as good practice
  - Professor Miller runs Putnam practice in the Fall semester
- Geometry Labs United
  - https://geometrylabs.net/

Local Organizations/Degree Plans (@ UT Austin):

- Dean's Scholars
- Polymathic Scholars
- FRI (Freshman Research Initiative)
    - https://fri.cns.utexas.edu/research-streams
- Scientific Computation Statistics Certificate Program
- Honors Thesis
    - This is not really a program, but a degree option, most schools offer this in some shape or form (ask Dr. Teresa Martines about eligibility: theresa.martines@austin.utexas.edu)
- Texas Experimental Geometry Lab
    - https://sites.utexas.edu/geometry-lab/
- UT Austin Mathematics Directed Reading Program
    - https://web.ma.utexas.edu/users/drp/about.html

Undergraduate Conferences

Note: Most of these conferences have travel funding for undergraduates, so apply early!

- **TUMC (Texas Undergraduate Mathematics Conference)**

- **JMU Math & Stats: SUMS**
  - https://www.jmu.edu/mathstat/sums/index.shtml

- **Young Mathematicians Conference (YMC)**
  - https://ymc.osu.edu/

- **Rose-Hulman Institute of Technology: Undergraduate Mathematics Conference**
  - https://www.rose-hulman.edu/class/ma/web/mathconf/2023/index.html

- **Joint Math Meetings**
  - https://www.jointmathematicsmeetings.org//jmm
    Student Travel Funding

- **MAA MathFest**
  - https://maa.org/meetings/mathfest-2017
    Student Travel Funding.

- **AMS Sectional Meetings**
  - https://www.ams.org/meetings/sectional/sectional.html
    Student Travel Funding

- **MAA Section Meetings**
  - https://maa.org/member-communities/maa-sections/section-meetings
    Student Travel Funding.

- **SIAM Conferences**

- https://www.siam.org/conferences/calendar
  Student Travel Funding

Study Abroad/Internships

Where to look?

- https://www.mathprograms.org/
  -
- https://utexas.campuslabs.com/engage/
  -

REU(s)

- **A presentation by Luke J Seaton on this topic:**
  - **2021 Resources Presentation**

Grad School

Step 0:
Decide that you want to apply to grad school

Step 1:
Identify the schools you want to apply to!

Step 2:
Find the professors you think you might work with

Step 3:
Craft an application template, but personalize it to each program

Step 4: Submission! (Also, it's not a bad idea to request a fee waiver, since the cost per application is often $50-$100)

Step 5:
Waiting……

Programs: MA/Post-Bac/PhD

UNDER CONSTRUCTION

Guide to being an international

UNDER CONSTRUCTION

A quick guide to funding grad school

Nation-wide Funding Organizations

- NSF GRFP
- Fulbright
- Edge Program
- McNair

Offices and resources available to students at UT Austin:
** note: many of the resources advertised by these offices are available at multiple institutions **

Texas Global at the University of Texas at Austin

https://global.utexas.edu/engagement-strategy/fulbright

https://gradschool.utexas.edu/funding/fellowships/grad-school

**Note that PhD programs will fund you (by a departmental fellowship or TAship), but it is also nice to have independent funding