

A Little Hire Education for Graduate Students

We offer some advice for our graduate students at the University of South Florida looking to graduate soon. We focus on academic positions in mathematics, although much advice will hold for any search. There is (likely better) advice available on-line. You can start at:

[AMS career information page^{link}](#)

[Young Mathematicians Network^{link}](#)

[MAA's Job seeker resource page^{link}](#)

The bigger picture

The following are true about any position to which you apply:

- **Your preparations for a career began when you entered graduate school!**

Your background, training, dissertation/thesis, teaching experience, and goals matter.

Do's

- Seek out opportunities to improve yourself.
- Pay attention to what it takes to complete your degree.

Don'ts

- Taking the easy way through grad school will hurt you in the long run.
- Don't ignore one of teaching and research in favor of the other. Balance appropriately.

- **A hiring is like a courtship!**

It is vitally important a new hire fit in well in terms of department needs and philosophy.

Do's

- Tailor your application materials to suit position advertised.
- Learn about the school doing the hiring.

Don'ts

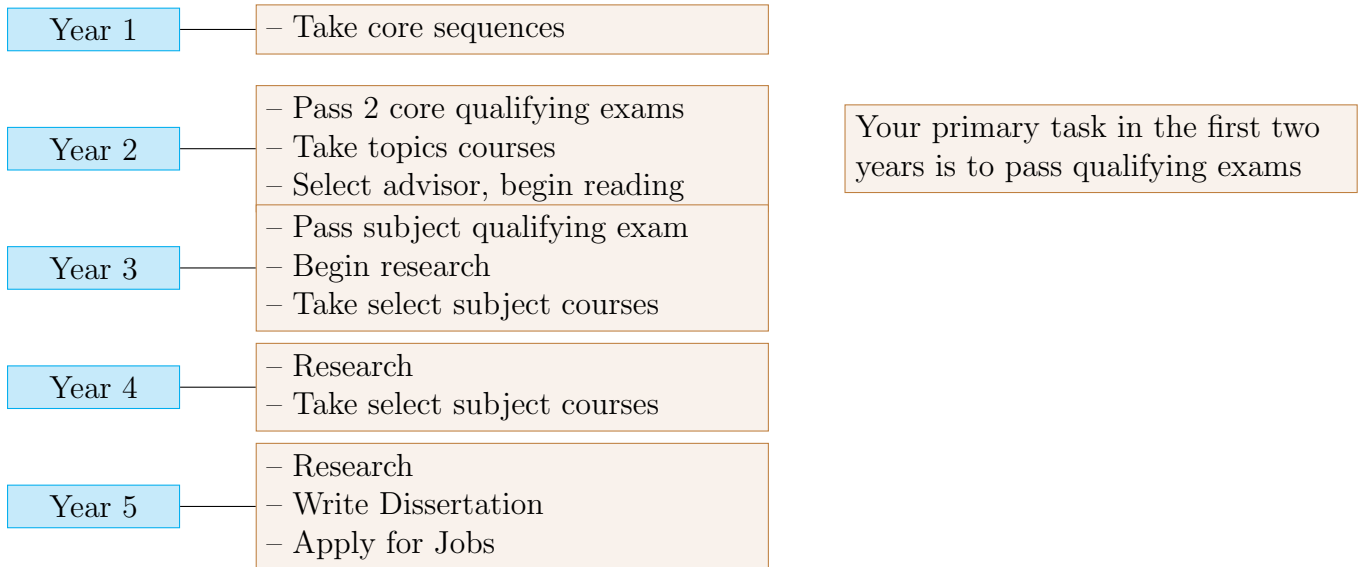
- Misrepresentation will be found out sooner rather than later.
- Don't think that anyone will read a poorly prepared application twice.

We shall elaborate on these points.

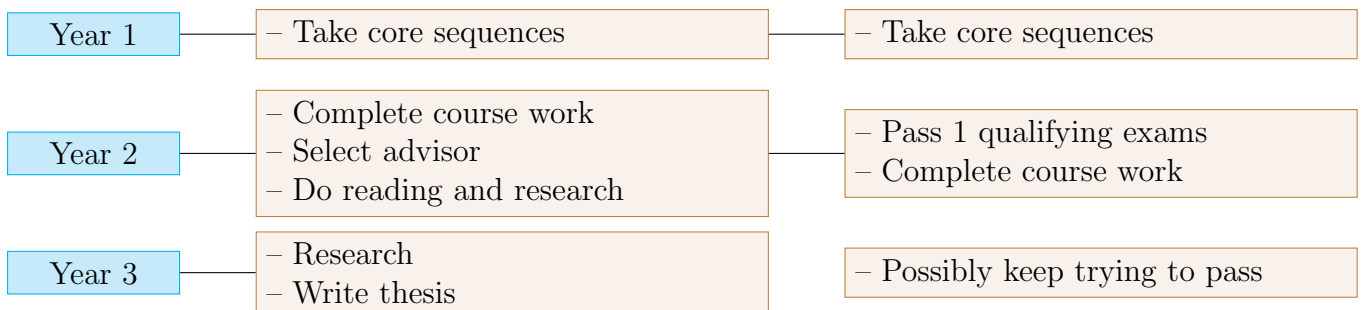
Graduate Studies

To help you chart your course through graduate school, we offer the following.

- Typical Ph.D. progress:



- Typical Masters progress (Thesis option and qualifying exam option):



Students who take the attitude “I’ll get a Masters and see how it goes before getting a Ph.D.” often do not hold themselves to a high enough standard in the core sequences to be able to pass qualifying exams at a Ph.D. level.

The thesis option offers the opportunity to obtain greater insight the practice of mathematics (reading, writing, tools, etc). Also students receive more guidance working on a thesis than studying for an exam. Some students have needed so may attempts to pass an exam that it would have been quicker had they written a thesis from the start.

- You will never have a better opportunity to learn mathematics.

Do's

- Take courses from several faculty members, as suits your interests. Cultivate relationships so they can write letters of recommendation and serve on your defense committee.
- Take a variety of courses. The greater your breadth of training, the more tools you have to solve problems and the more courses you will be comfortable teaching.

Don'ts

- Don't let coursework get in the way of thesis/dissertation research.
- Don't stop learning.

- Teaching is part of your training.

Do's

- Take on a variety of teaching assignments. The preparation will reflect positively.
- Seek out the opportunity to teach a course or two independently, particularly if your goal is to teach. You will need to earn the trust for such an assignment.
- Learn how to convey challenging ideas.

Don'ts

- Don't avoid teaching. You will need the experience for any academic position. Your research won't be so strong that no one cares about your teaching.
- Don't let your teaching responsibilities interfere with your timely completion of your degree. Even if you aim for a teaching career, you still need to finish your degree first.
- Don't dismiss teaching. Research mathematicians are held to high teaching standards.

- A proven record is ideal.

Do's

- Publish (at least submit) part of your Ph.D. dissertation prior to graduation, if possible. Over the past 20 years, it has come to be an expectation for research positions. Acceptance in a peer-reviewed journal makes your dissertation nearly bullet-proof.
- Serving as the instructor of record or other leadership role will help land a teaching position.

Keep your career options in mind

As you progress through graduate school, consider some of your career options. While there is not a particular right or wrong way to get a degree, your decisions have consequences.

Do's

- Think about what you will do after you complete your degree.
- Research how to reach your goal.
- Consider what will make you happy rather than rich.

Don'ts

- Don't wait until you are about to graduate to see what you are qualified to do.
- Don't get too hung up on taking the "right" classes or working with the "right" advisor. They may help, but passion for your subject is important too.

- There are many different academic environments:
 - Large public
 - Small public
 - Private/Liberal arts
 - Community college
 - For-profit
- Industry and Government also employ mathematicians:
 - Statistics
 - Modeling
 - Applied Math
 - National Labs
 - National Security Agency
- Further study in other area: Master's holders in particular may choose to study a second, allied field. A background in math is often prized.

Learn more about careers in math online. A few links:

[AMS career information^{link}](#)

[MAA careers page^{link}](#)

[SIAM mathematics career roles page^{link}](#)

[SIAM mathematics career after Ph.D. page^{link}](#)

Are you ready to graduate?

- You are not ready to graduate until your advisor agrees that you are.

do

- Speak with our advisor about whether or not you will graduate on time for a new job.
- Work hard. The onus of timely graduation remains is yours.

don'ts

- Don't expect your advisor to support a dissertation that isn't ready in their opinion.
- Don't expect that your advisor will allow you to graduate too soon.
- Don't wait until the spring to start your search.

- When applying for jobs, your status will be one of the following:

Degree expected: You aspire to graduate on time.

ABD: All requirements fulfilled **But** awaiting **Degree**—dissertation already been defended.

Graduated: Your degree has been conferred. There is no need to worry.

- Remaining in an expected or ABD status may allow you to stay in graduate school longer.
- Jobs have been lost before they started when a degree was not completed as promised.

Your academic job search begins one year in advance!

We offer a timetable for a typical job search.

August	Advisor ok's graduation plan Arrange for letters Register on MathJobs.org Prepare materials
September	Have materials proofread Watch job listings
October	Verify with letter writers Ready for applications Watch job listings
November	Early deadlines Watch job listings
December	Many deadlines Watch job listings
January	Late deadlines Joint Meetings Watch job listings
February	Early interviews Watch job listings
March	Interviews Watch job listings
April-June	Watch job listings

Preparation is very time consuming. Plan accordingly

Tenure-track jobs are often advertised before November and due Late December. Postdoctoral positions may be a bit later.

Many positions open late. Some are at less competitive institutions, and some are short term positions. These are often springboards for new graduates, so they should not be ignored.

Do's

- Aim for the fall hiring season during which more positions are advertised.
- Pay attention to the secondary hiring season, especially for a first position.

The AMS Employment Center^{link} sponsors job interviews (mostly for teaching positions) at the Joint Meeting of the AMS and MAA, held in early January. Consider attending.

Academic job listings

- There are several places to look for job listings. Most offer free access to job seekers.

- [MathJobs.org](#)^{link} : The leading job listing and application system. It is a bit biased toward US job listings and teaching positions.
- [EIMS](#)^{link} [Notices of the AMS](#)^{link} : These are run by the AMS and lean more toward research positions.
- [MAA](#)^{link} [AWM](#)^{link} [SIAM](#)^{link} [ASA](#)^{link} : Most professional organizations maintain online job listings. Ask your advisor for suggestions appropriate to your situation.
- Local listings: Some smaller schools with a local student body, such as community colleges, advertise on a smaller scale. Watch their websites and listen for openings.

- Pay attention to the nature of the institution and position to match your abilities and interests.

- **Community College:** Your teaching is what matters.
- **4-year Colleges:** You will be expected to teach four courses per term (or more). Doing enough research to supervise undergraduate research is often a strong plus.
- **Master's granting:** You may be allowed room for research while expecting teaching, and a teaching load adjusted appropriately.
- **Ph.D. granting:** Schools with a Ph.D. program require faculty to teach about two courses per term. Earning tenure requires a strong research program and about two publications per year (although quality trumps quantity). There has been a trend to hire people to teach with no research requirements.

- A nine-month appointment refers to a position having assigned duties (and salary) during the academic year. This is almost universally the case, and some ads state this explicitly. Unless the position is only for one a single academic year, a nine-month appointment does not refer to the length of employment.

- Different terms are used for different types of jobs:

- **Tenure-earning/Tenure-track/assistant professorship:**

The most coveted positions offer the opportunity to earn tenure.

- **Postdoc/ Named visiting assistant professorship:**

Highly sought after, these term limited (1–3 year) positions are essentially prerequisites to landing a tenure-earning research position. Often, but not always, they carry a relatively light teaching load. Often a form of mentorship needing a local sponsor.

- **Teaching postdoc:**

A one to three year position, usually with limited research expectations and heavy teaching expectations offering training in this aspect.

- **Visiting professorship:**

Often a one or two year position to replace a faculty member on leave. They are a great springboard for new graduates.

- **Lecturer/Instructor:**

Teaching position, sometimes at a research institution. Almost always non-tenure-earning, but generally renewed regularly. Includes benefits, which an adjunct position wouldn't. Some schools use Lecturer for such a position and instructor for adjuncts.

- **Adjunct Instructor:**

Hired on a course by course basis for low pay, these positions are far from ideal. If you have research ambitions, these positions can be the end of them. They can be fine for a few semesters, but the thinking is that after that your research is becoming stale. That said, we have had a number of graduates use such positions as a springboard to a permanent position at a local teaching or community college.

- Be realistic.

- Tenure-earning research positions require several years of postdoctoral experience.
- Postdoctoral positions generally require several publications.
- Teaching positions require experience teaching.

- [The math jobs wiki^{link}](#) offers some insight into the progress of the hiring season. When you see the same person listed over and over, there is a strong chance that they are grant funded.

You are marketing yourself!

Carefully prepare your application material—there is a lot of room for mistakes.

- There is no one set of material, but the most commonly requested are:

- **Letters of recommendation:** Arrange that they be written and sent.
- **Cover letter:** Introduce yourself, explain why you would be a good hire.
- **AMS coversheet**^{link}: Recommended form for academic jobs.
- **Curriculum vita (CV):** Training, experience, and accomplishments.
- **Research Statement:** Research you've done, its significance, and your plans.
- **Teaching statement:** Experience, philosophy, goals, etc. in teaching.

- Search committees have a big job to do. A well-prepared application makes a good impression.

Do's

- **Organize** and label your materials.
- **Customize** materials to fit that which is requested.
- **Finalize:** An incomplete application is usually rejected outright.

Don't send:

- **Personal information** such as picture, birthday, etc. Keep it professional. Don't raise issues that cannot legally be considered^{link}. Don't stir up potential personal biases
- **Transcripts** unless (until) specifically requested. A list of relevant courses is better.

- Your record won't speak for itself.

Don'ts

- Don't exaggerate—nothing is a bigger turn off than misrepresentation.
Example: Presenting support from your advisor's grant as if it were your grant.
- Don't give less information that is requested.
Example: Neglecting to mention many years of teaching experience.
- Don't overwhelm the committee with too much information.
Example: A 200+ page teaching portfolio is excessive.

- You may wish to create two application packets: one for teaching, one for research.

Customize

- Teaching position: Emphasize teaching, but address research. Choose three letter writers to address your teaching abilities, and at least one for research. The potential to supervise undergraduate research as a strong plus.
- Research: Emphasize research, but address teaching. Choose three letter writers to address research and at least one for teaching. Have a strong research plan.
- A bit of each: Some schools may allow room for research while expecting teaching. You better be good at both.

Don't

- Send a research application for a teaching job. It sends two messages: 1) I just want a job, I don't care what you want; 2) I don't plan on sticking around.
- Send a teaching application to a research job. You're wasting everyone's time.
- Send material addressing just one aspect. Regardless of the job, you should address both teaching and research. The difference lies in which is emphasized.

Letters of recommendation are very important!

The importance of your letters to the hiring committee cannot be overstated.

- Seek out letters that will highlight your abilities. Consider whether you are looking for a teaching or research position when choosing.

Do consider asking

- **Your Advisor** should address your research. They should address your ability to present complex material in seminar (hint: Invite your advisor to one of the classes you teach). A recent graduate with no letter from their advisor will need to explain why this is the case.
- **The Associate Chair** or a **Course Supervisor** should address your teaching record. Even for a research position at least one letter should address teaching—if three letters are requested, send a fourth about teaching.
- **Outside letter writers** in your area but outside your department should address your research. A friend of your advisor whom you met at a conference is ideal, as they can speak about a presentation or discussion.
- **Your professors** can speak about your abilities and work ethic as a student. Those who attend the same seminar or serve on your committee can speak to your work and your presentations as well. It is of dubious value to have a letter that says little more than “He/She was a student in my class. He/She earned a grade of (blank)”.
- **Appropriate outside/past employers** in relevant prior teaching or industry experience can be of value. If they are too old, they may not count for much.

Don't ask

Letters from the following are at best unhelpful, at worst harmful. We've seen all of these.

- **Fellow graduate students** lack the perspective and independence to be trusted.
- **Old acquaintances** often lack the independence to be trusted and ignored.
- **Your students.** Use excerpts from student comments in your teaching material.
- **Character references** are not generally considered in academic searches.

There may be exceptions, but very rarely.

- **Missing letters** may disqualify you on technical grounds. It is fine to arrange for more letters than requested just in case one is lost/forgotten. **Late letters** may be accepted for a short time after the deadline, but don't count on it.
- Help your letter writers help you.

Do's

- **Ask early!** There is a big difference between asking for a letter and asking that a letter be sent. We do not appreciate the former on short notice.
- **Share your application material** with your letter writers as soon as they are ready.
- **Make specific requests** (where and by when) as soon as reasonable.
- **Thank them** before and after.

- Know how the letter will be submitted. **Arrange** for the delivery of the letters. Only at the lowest level of position will a department solicit letters from a list of references themselves.

- **On-line submission:** The letter writer gets an email with a link to a page where the letter can be uploaded. This is the system used by *MathJobs.org* (one submission for all the jobs you apply for!).
- **e-mail submission:** Many institutions ask that the letter writer send a PDF to them by email. Be clear if the request will come from the institution or if you are responsible for making it of your letter writer.
- **mailed submission** Some institution still ask for a physical letter, although fewer and fewer do each year. If you need a paper letter sent, ask your letter writer what would help (address label, stamp, etc).

- Be aware of the following.
 - **Waive** your rights to see the letters. Many institutions simply ignore the content of letters when you don't.
 - **European expectations** are for a balanced evaluation of strengths and weakness. American's just sidestep negative qualities. Those familiar with the American system will write for the intended audience.

Application materials

You can learn about most application material online. We make a few comments.

- **Cover Letter**

The cover letter is an introduction.

- State your interest in the position. I suggest identifying the job and institution to indicate at least enough interest to customize the letter.
- Introduce yourself with a little bit about your goals.
- Name department members who you may know or share a common interest with, if appropriate. This is especially true for research positions.
- Note how your experience and training fit the requirements.

There is some debate over where on a spectrum a cover letter should be.

- In the age of MathJobs and other automated applications process, a generic letter is all anyone expects.
- Tailoring your letter to fit the job description and institution is important. It shows that you have high interest in the position and understand what it entails. I favor this end of the spectrum. However, you can boilerplate parts of the letter.

Don'ts

- Don't name the wrong school. It is easy to forget to update all of the pieces when customizing. It shows some sloppiness.
- Don't misdescribe the position. We seen applicants describe permanent positions as one-year positions, indicating that they might not stay.
- Don't gratuitously name drop faculty members who really have no connection to your work. It suggests you don't know what they actually do.
- When a passion becomes too personal it sends a creepy vibe.
Example: Spending a full page explaining that your brother's coming out has made you passionate about treating everyone equally.

- **The Curriculum Vita (CV):** This is all about you professionally. This is an absolute requirement. Much is written elsewhere, so I won't comment further, other than to note that a CV is not a resume.

- **Research Statement**

I recommend that students have two or three versions of their research statement, depending upon their goals.

- **For research positions** a strong research statement is essential. Describe what you have done, what you are doing, and what you plan to do. It is not uncommon for such a statement to run 10 pages.
- **For teaching positions** a scaled back research statement is appropriate. Many Bachelors-only granting institutions expect one research paper every other year in the first six years (three total)—traditionally this was the publication of one's dissertation in parts. Many Bachelors-only granting institutions welcome research that is suitable for undergraduate projects, so work this aspect if possible. In addition it is helpful to know which sorts of courses would be your strong points.

Be appropriate

- It can be detrimental to include too much about research when applying for teaching-only positions. Here somewhere between 1 paragraph and 4 pages might be all you need to include, making it clear that you do not intend to let research get in the way of teaching. This can help when describing the courses that you feel well qualified to teach, as well as show you could supervise undergraduate projects. But say it so as to emphasize why you are discussing research for a teaching job.
- Many positions specify an area. If your work doesn't fit, you are unlikely to be seriously considered.

- **Teaching Statement** You may wish to have different versions of your teaching material to suit the job you are applying for. The listing may request one or more of several variations of teaching material.

- **Teaching Experience:** A list of courses taught, where, when, in what capacity, and perhaps a brief description of each. Perhaps describe how you have grown as a teacher.
- **Teaching Philosophy:** What drives you? How do you approach teaching?
- **Teaching Portfolio:** A broad picture of your teaching.
 - * courses taught and methods of teaching, integration of technology,
 - * student or peer evaluations: scores and comments, emphasis on recent courses
 - * other measures of outcomes or success.
 - * very select samples of documents generated for the course.
- **Teaching statement:** Some combination of the above, less detailed than a portfolio.
- **Evaluations:** Rating and excerpts from student comments. Try to be balanced, so as to avoid the appearance of cherry picking.

Don't feel overwhelmed

Talk to your advisor. They know best the specific area, as well as having a sense of the hiring process. Get help proof reading. Compare notes with other graduate students. Talk to other faculty.

Prepare Well. Watch for Opportunities. Good Luck!

Brian Curtin
Department of Mathematics and Statistics
University of South Florida
last updated September 2016