Maximizing Admission Likelihood:

A Guide for BYU Undergraduates in Preparation

for Graduate Work in Statistics

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Preface

This manual is designed to be a reference guide and a starting point for a BYU student's exploration into graduate work in statistics. The purpose of this manual is to help BYU statistics students be more aware of what preparation is required for statistics graduate programs. The manual is designed to be a reference guide for specific questions regarding graduate work but can also be read straight through for an overview of graduate work. There are three primary sections: deciding on the suitability of graduate school for individual students, preparing for graduate work, and applying for graduate school.

The structure of this document was taken from a graduate school guide created by the BYU Economics Department. We thought it would be helpful to provide something similar for undergraduate students studying statistics.

I. Is Graduate School for Me?

Background Information

Graduate work in statistics can take on many forms. The contents of this guide focus on Statistics PhD programs specifically, but many of the suggestions also apply to those interested in pursuing a Thesis-Based Master's in Statistics, such as the one at BYU. Students interested in applying to Master's or PhD programs in Biostatistics are also safe to refer to this document.

PhD programs typically involve two years of coursework, followed by a dissertation. The total time to completion (coursework and dissertation) is usually five years. Most graduate students are involved in either teaching or research assistantships for the duration of their program. In a few cases, students may be offered a fellowship that allows them to concentrate exclusively on coursework without other responsibilities during the first year or two.

Graduate work in statistics is a combination of math, computer programming, and of course, statistics. Not only is there a strong coursework component, but as mentioned above, there is an overwhelming emphasis on research. Teaching may also be part of graduate work, but by and large, PhD success is determined by the quality of a candidate's independent research of topics in statistics.

A Word of Caution: Reasons Why Graduate Work May Not Be For You

Graduate work in statistics is a very challenging endeavor, and entry into graduate programs is becoming increasingly competitive. Although getting a PhD in statistics is a very noteworthy achievement, it is not for everyone. There are many factors to consider in deciding whether or not to attend graduate school. This section will begin by telling you all the reasons you might not want to do graduate work in statistics. If you haven't been scared off by the end of this next section, then that may be a good sign that you would be a good candidate for graduate work.

MATH

The first thing students should consider is the high level of math competency required for statistics. If you don't like math, especially proofs and analysis, or you despise the probability and inference courses you are taking in the statistics major, graduate school might not be for you. The recommended coursework in preparing for graduate school is math-heavy, and the math will not go away when you get to graduate school—it will get even harder. A good taste of the kind of math you should be expecting comes in Math 341 Theory of Analysis. This is an essential class for graduate work and is a good indicator of things to come. While not all statistics research

requires the most advanced mathematics, you need to at least have a very high tolerance of advanced math to successfully complete the coursework in your PhD program.

RESEARCH

Another significant part of graduate studies in statistics is research. Earning a graduate degree in statistics revolves around conducting research. However, being a successful researcher requires a slightly different skill set than being a successful student. These skills include curiosity, creativity, and self-motivation. To be honest, if you do not have a self-driven desire to ask and answer interesting questions, then pursuing a PhD in statistics may not be the right path for you. Most careers that PhD graduates pursue are heavily research-based, if not exclusively so. Additionally, strong programming skills are essential for good statistical research, as much of today's work is conducted using languages like R and Python. If you're not doing applied research, you're likely engaging in theoretical research—which inevitably leads back to mathematics. If you are uncomfortable working on a computer for long hours, analyzing data, or writing code, you may want to reconsider your post-graduation plans. A rare exception might be if you excel in probability and statistical theory, where the nature of work can be different.

INCOME

If your primary motivation for pursuing a PhD in statistics is a high salary, you may want to reconsider. While Statistics PhD graduates do have strong earning potential—especially in tech, finance, and healthcare—many lucrative industry roles do not require a PhD. A master's degree in statistics, data science, or a related field can often lead to well-paying positions with significantly less time in school. That said, a PhD can be a valuable investment if you are passionate about research and advancing the field. The time and effort required for a PhD are best justified by a deep intellectual curiosity, not just financial incentives.

SCHOOL

Students who go on to graduate school are guaranteed at least another five years of academic studies. If you're interested in graduate school, you should enjoy learning and be good enough at academic work to be willing to go to school for a minimum of five more years. Again, not everyone wants to be in school until their late 20s or early 30s. If you're tired of school and are thinking graduate school will be any different, think again. If you go to graduate school, the coursework will only get harder and harder as you go along.

CAREER FLEXIBILITY

While many students pursue a PhD in hopes of becoming a tenure-track statistics professor, most graduates end up in different roles. The job market in academia is known to be very competitive, and those who choose that path often complete a postdoc to give themself the best chance. You are most likely to be happy pursuing a statistics PhD if you are flexible in what kind of research-oriented job you have and if you are flexible in where you live. If you are pursuing a

PhD to become a professor at your favorite university in your favorite city, know that your odds of making that happen are low even if you attend a top program.

Good Indicators: Signs That You Might Be Well Suited For Graduate Studies

Having considered reasons why you might stay away from graduate school as well as incorrect motivations to go, here are some good indications that you will both like and succeed in graduate work.

CURIOSITY

You should love to learn and have a strong curiosity about the world around you. You should enjoy reading and learning in different forms and genuinely desire to understand why and how the world works. If you are drawn to the idea of uncovering hidden patterns, questioning assumptions, or looking for better ways to make sense of information, then you might enjoy graduate studies in statistics.

MATH

A good statistician has a good foundation in statistical theory, and that theory is based on math. You should not just feel comfortable with math but enjoy using it to solve problems and answer questions. You should not be afraid to deal with advanced calculus and abstract theory in solving problems. The training you need to use these tools will come with time, but you should be at least willing to tolerate advanced mathematics.

PASSION

If you're reading this, it's clear you're capable and intelligent. But are you truly passionate about statistics? Do you find excitement in areas like data analysis, probability, statistical modeling, or machine learning? You should genuinely enjoy your statistics courses and be eager to dive deeper into topics beyond what's covered in class. If you can't get overly excited about some aspect of statistics to the point where it occupies your thoughts often, you may find that spending hours working with data and conducting research might not be as fulfilling as you expect.

The following story perfectly illustrates the principle of passion. Henry Eyring, who had encouraged each of his three sons to major in physics, once had a conversation with his son, Henry Eyring, while they struggled through a problem in their basement. He asked, "When you walk down the street, when you're in the shower, when you don't have to be thinking about anything else, isn't this what you think about?" To which the younger Henry replied, "No." Instead of expressing disappointment, the father used this moment as an opportunity to teach his son a powerful lesson. He said, "Hal, I think you'd better get out of physics. You ought to find

something that you love so much that, when you don't have to think about anything, that's what you think about."

Dealing with Uncertainty

For many students, taking probability and inference (STAT 240 and 340), multivariate calculus (MATH 314), linear algebra (MATH 213), and theory of analysis (MATH 341) can help one decide if the type of math that will be found in graduate studies is something they can handle. Gaining experience as a research assistant is also a great way to expose oneself to the work that graduate students do. If you don't enjoy either of those, then it is likely that doctoral studies in statistics are not for you.

If you still feel unsure about graduate work, you should start preparing to go to graduate school, and the preparation process should help you to see clearly if graduate school is really what you'd like to do. As you start the process of preparation, not only will the work you do help you to understand more about graduate work, but your interactions with faculty and other students will also give insights into the nature of graduate work. Many students don't firmly decide on doing graduate work until their second or third year at BYU, but if you've already started preparing, it will be to your advantage.

Alternatives to Statistics PhD Programs

A statistics major can be good preparation for several research-oriented PhD/Graduate programs outside of statistics. Some programs in adjacent fields require similar preparation. If you love research, but either have research interests outside of statistics or are looking for a less technically demanding program there may be alternative programs you would be interested in. The list below is incomplete, but can give you an idea of potential alternatives. As you make decisions about future schooling, take time to talk to your professors and get ideas as to what programs there are out there and what might be the best fit for your interests.

- **Master's / PhD in Data Science**
- **Master's / PhD in Biostatistics**
- **Master's / PhD in Computer Science**
- **Master's in Business or Data Analytics**
- **Master's / PhD in Operations Research**

II. Preparing for Graduate School in Statistics

Overview

Once you've decided on graduate work, there is quite a bit of preparation to be completed. Even if you're not sold on going to graduate school, much of the preparation will be to your advantage for other post-undergraduate options, so it is wise to start as early as possible. This section is outlined such that the preparation that must be started the earliest is listed first and the preparation that can be started latest is listed last.

Academic Coursework

In preparing for graduate work, there are some very important classes you need to take. These classes can be broken down into three different categories: statistics classes, math classes, and other classes. The classes listed in the following tables as being strongly recommended are classes that most qualified applicants will take. If you are unable to take one or two of them, it doesn't mean you can't ever go to graduate school, but it does put you at a disadvantage relative to other applicants who will have taken those classes. All the classes listed in these charts are in addition to the other requirements for graduation, so keep in mind the need to complete those basic classes too (no graduate school will admit you if you don't get an undergraduate degree).

Statistics Classes
Once you complete STAT 121, you should go directly into the five core classes (STAT 230, 240, 250, 330, and 340). After that, you will also choose from a number of 300-, 400-, and 500-level statistics courses that will fulfill your major requirements. Deciding which of these classes to take will depend on your goals and interests.

Math Classes
Math classes are very important in preparing for graduate work. Many statistics students interested in going to graduate school will end up doing a minor in mathematics and it is highly recommended to do so. If you select the Statistical Science emphasis, many of the math courses you take will double count for your major requirements, so it requires very little additional work. If you pursue the math minor, you should have Math 341 as one of your electives. Most statistics programs encourage students to have taken at least the first course in a real analysis sequence. If you have the time, you can take Math 342, which is the second course in the sequence. The two main things PhD admissions committees look for in a potential student is **1) Mathematical Ability**, and **2) Research Potential**. Every additional, relevant math class that you can take and perform well in is another display of your ability to do high-level math.

Strongly Recommended	**Great (if you have time)**
● MATH 112 - Calculus I ● MATH 113 - Calculus II ● MATH 213 - Linear Algebra ● MATH 215 - Computational Linear Algebra ● MATH 314 - Calculus of Several Variables (III) ● MATH 290 - Fundamentals of Math ● MATH 341 - Theory of Analysis	● MATH 342 - Theory of Analysis II ● MATH 541 - Real Analysis ● MATH 413 - Advanced Linear Algebra ● MATH 334 - Ordinary Differential Equations *This list is not exhaustive, and you could likely find additional relevant courses, but consult professors before taking anything just to be sure

Other Classes

Computer programming is an essential skill for statisticians. For all emphases, you can fulfill one of your major requirements by taking CS 111 - Introduction to Computer Science. R and Python are far and away the most used programming languages for statistics. Any classes you can take that will help strengthen your programming skills are useful. There are other ways in which you can learn these skills, but taking a class or two to get into the programming mindset is very helpful. Apart from STAT 250, most of your statistics classes will be in R, so you will have plenty of exposure to it. There are also a few classes in the department that are done in Python, so take those if you would like to learn. If you have the time, it could also be worth taking CS 235 - Data Structures and Algorithms.

Timing

Aside from meeting the necessary prerequisites, starting early and being wise in your scheduling can help. If you wait too long to take some of these classes, you will find that there are university scheduling conflicts that make it impossible to take all the strongly recommended classes. Given all that, here are some tips on when to take which classes:

• Aim to take 2-4 statistics/math/computer science courses per semester. You may decide to take more or less depending on what you can handle.

• Don’t take too many math classes in one semester. The workload for these classes is often higher than your other stats and computer science classes, and if you take too many, you may overload yourself.

• Take classes in spring and summer terms. Many of the math and computer science courses are offered at these times. Knocking out recommended courses in the spring and/or summer can lighten your load in the fall and winter.

Here is a sample schedule:

Fall 2023 - 13 credit hours
- CS 110
- MATH 113
- STAT 240
- STAT 250

Winter 2024 - 14 credit hours
- CS 111
- MATH 290
- MUSIC 101
- REL A 212
- STAT 340

Spring 2024 - 5 credit hours (equivalent to 10-15 credit hours in a semester)
- MATH 213
- MATH 314

Summer 2024 - 4 credit hours (equivalent to 8-12 credits in a semester)
- MATH 215
- MATH 341

*Notice that this student opted for a lower credit load when they had to take 4 stat/math/cs classes at once. Then, they took required math classes in the spring and summer to stay on track. This student became a statistics major late in their sophomore year, which is why they had to pack so many of these classes into each semester. Ideally, you declare your major earlier and can spread out the classes in a way that makes things a bit more manageable.

Remember, not only is it important to complete these classes, but it is also important to do well in them. For example, admitted students at top programs typically have a major GPA of 3.8 or higher. Don't be discouraged if your freshman year was a disaster and your overall GPA is not perfect. Admissions committees look a lot at how you did in your math and statistics classes, especially Math 213, Math 314, Math 341 and your core statistics classes. Do your absolute best to obtain good grades in those classes.

Getting to Know the Faculty

If you want to go to graduate school, it will be highly beneficial to have both experience doing statistical research and strong letters of recommendation from faculty. Both of these are impossible without good relationships with the faculty. If your professors don't know who you are, you are less likely to be hired by them, and they will be less likely to be willing to write you good letters of recommendation. You should try to get to know the faculty as soon as possible. The following are some ways in which you can better get to know the faculty.

Excelling in Classes

The first place to start in getting to know the faculty is the classroom. It goes without saying that you should be working hard and excelling in your classes. This alone will often get you recognized to some degree, but students who go above and beyond the minimum expectations for that A will leave even more favorable impressions on the faculty. Here are some pointers on how to leave that favorable impression:

- In class, don't fall asleep, talk incessantly with your neighbors, or do homework for other classes.
- Try to get involved in class discussions, answer questions and even pose questions when you don't understand the material. If you are really interested enough in statistics to want to get a doctoral degree, you should invest as much as possible in class time.
- Beyond the time spent in class, make an effort to visit professors during their office hours to ask further insightful questions related to the material in class.
- Ask for advice regarding post-undergraduate plans. Let that professor know by your actions that you are interested in really learning, not just the grade.
- Be curious and genuine. Desire to learn and form authentic relationships with your professors.

Attending Department Events

Anyone serious about their studies in statistics should make an effort to get involved with the department. The BYU Statistics Association often sponsors various opportunities for students to learn more about faculty and various fields in statistics. Each year, the Statistics Association puts on opening and closing socials where students have the opportunity to interact and visit with faculty in a casual setting.

Experience

Once you've started in your coursework and gotten to know the faculty some, you will be better qualified to apply for jobs within the department doing teaching and research. These jobs are not about the financial incentives, but more about the invaluable experience gained and the relationships developed with professors. The following sections detail the value of these opportunities and how to find them.

Teaching Assistant

BENEFITS As mentioned before, those who work as teaching assistants usually aren't doing it for the money. There are two primary benefits that come from being a TA.

1. Those who teach a subject have to know the subject. This may seem fairly obvious, but there's a good chance that you have taken a class or two where you did well enough to get a good grade, but you still haven't mastered the material. Being a TA for any statistics class will help solidify your understanding of that subject. You'll find that when you're the one holding the review sessions and answering all the questions, the material will become that much clearer to you.

2. Working as a TA will help you to develop even better relationships with the faculty, which will be very important when you go asking for letters of recommendation. Aside from these two reasons, there is little other value to being a TA if you want to go to graduate school. If you are forced to choose between being a TA and an RA, choose the RA job. TA experience is not essential for preparing for graduate work.

Research Assistant

BENEFITS While TA experience is not needed in preparing for graduate school, research experience is essential. There are many benefits to being an RA. Some of these benefits are:

- Additional opportunities to better get to know the faculty
- Increased computer programming skills
- Better understanding of statistical theory and its application in research
- Knowledge of gathering and cleaning data
- Increased ability to comprehend statistics literature
- Instruction and experience in the overall research process
- Flexible schedule—you often set your own hours
- Opportunities to publish or co-author a paper with your professor

Because so much of the emphasis in graduate statistics is on research, getting firsthand experience as a research assistant is excellent preparation for the work you will do in graduate school. It also serves as another opportunity to evaluate if graduate school is really what you want to do. If you are serious about pursuing a PhD in statistics, you should consider working as a full-time RA over the summer in place of other summer jobs or internships.

GETTING HIRED What does it take to get a research job? Unlike TA jobs, there is no standard application for RA positions. If you are interested in being a research assistant, you'll need to get out and talk to professors. The best way to find research opportunities is to talk to the professor of a statistics class you are doing well in. If he or she can champion your cause and confidently recommend you to other professors, then you're well on your way to finding that research job. The earlier you can start work as a research assistant, the better. Most professors like students to have taken most of, if not all the core statistics classes before hiring them as research assistants. Professors are also interested in students with a strong programming background. If you are comfortable with programming, whether it be R or Python, that will also be very significant in qualifying for research positions. Knocking doors is a last-ditch approach to finding a research job. Start talking to professors early about your interest in research, and then see what opens up. If nothing is available at first, be a TA for a semester and try again.

III. The Application Process

Once you've completed all that preparation, it is important that you represent yourself well in the application process. Be mindful of the time it will take to complete your applications—you want to get them in on time, and you don't want to be rushed. To help you spread out the timing of your application process, here is a suggested schedule to stay on track.

Action	Timing
Make preliminary decisions on which schools you plan on applying to	Spring/Summer before your final year at BYU
Take the GRE	August before your final year at BYU
Look at applications for all the schools you are applying to and take note of the necessary parts of the application	Start of Fall semester of your final year at BYU
Ask for letters of recommendation	October of your final year at BYU
Write Statement of Purpose	Summer or Fall of your final year at BYU
Complete Applications	November/December of your final year at BYU

There will be many other students from other universities applying to the same schools you are. Many of these students will have very similar credentials to yours. In going through the application process, you should try to show the very best you've done, so that you stand out to the admissions committees. With so many candidates applying every year, many admissions committees are looking for excuses to deny your application, so don't give them any by poorly preparing any portion of the application.

Choosing Schools to Apply to

The spring or summer before your final year of undergraduate studies you should begin looking into different graduate schools you might want to attend. The earlier you start your application process for these schools, the better off you will be.

HOW MANY SCHOOLS SHOULD I APPLY TO? Many students wonder how many schools they should apply to. Generally, it is recommended that students apply to 6-12 programs. In

selecting schools to apply to, you should try to diversify the different types of schools you apply to—long-shots, realistic placements, and safety schools. The more diversified your school selection is, and the more schools you select, the greater the likelihood will be that you get in somewhere you want to go. However, application costs can add up as many schools charge $75-$100 per application. Factor in the cost for each transcript sent out as well as the $35 cost for extra (beyond 4) GRE score reports, and there's quite a bit of money involved. However, those with financial hardship are often eligible for fee waivers. Ultimately, the number of schools you apply to depends on how much risk you're willing to take and how much money you're willing to spend. While the money might feel consequential now, the returns to attending the best possible program for you are likely to be enormous.

UNDERSTANDING DIFFERENT PROGRAMS In considering which schools you would be interested in, you should first gather some general information about the school by visiting its website, particularly the faculty pages and recent PhD student placements. As you look at different schools, you should start to ask yourself, "Would I really go there if I was accepted?" and "Would I be happy with the types of jobs students are getting out of this program?" Of course, if you are married, your opinion is not the only one that counts, so bear that in mind. Once you have some general information, go and talk to faculty members who know you and ask them what schools would be a good fit. Faculty can also help you to have more updated information about the details and academic cultures of specific programs.

DECIDING ON SCHOOLS In deciding on which schools you want to apply to, try to assess your fit in each program. Look for schools where there are a good number of faculty whose interests align with your own. It is understandable to want to go to a top university, but try not to let rank cloud your judgement too much during your research. Do not force fit with a program solely because it is highly-ranked/prestigious. Remember that it is best to apply to a broad range of programs. The world will not end if you do not get into a top 20 program. You can get great training in statistics in programs that fall well outside the top 20. The success you have during your PhD will have a lot more to do with what you do while you are there and who your advisor is. The nature of a PhD outside the top 20 is that academic research placements of graduates can be a bit more difficult. However, demand for PhD statisticians in government, private industry, and teaching-oriented institutions is strong and offers varied and interesting careers in which to use your PhD training. Furthermore, if your research is strong, academic research possibilities often open up, even if your degree is from a lower-ranked institution.

Funding

Attending graduate school can be very expensive. For most PhD students, the university pays for their schooling. University funding typically includes tuition, health insurance, and a living stipend. Living stipends can vary significantly, starting around $20,000 per year up to $50,000. In some cases, however, students are offered admission to a PhD program without funding. Some have argued that even if you don't get funding your first year, you can get it in later years, but this is the rare exception—usually you get what you're offered upfront.

ADDITIONAL SOURCES OF FUNDING The primary reason to apply for external funding (i.e. funding that comes from outside your university) prior to applying to graduate school is to improve your probability of getting into a top program. A NSF fellowship is a prestigious grant that can increase your probability of acceptance. While the NSF Fellowship is awarded to only a very few students nationwide, applying for it can work to your benefit, because many applications you fill out will ask what outside funding you have applied for. If they see you have applied for this prestigious scholarship, it communicates that you believe you are potentially qualified to receive such funding. Also, there are several fellowships—the NSF included—that you can apply for as a graduate student, so getting the experience of applying can be helpful moving forward.

GRE

Most of the graduate schools you apply to will require you to take the general GRE test. This consists of three portions: a verbal section, an analytical writing section, and a quantitative reasoning section. For statistics, the quantitative reasoning section is the most important of the three. Many applicants will get a perfect score of 170 on the quantitative section, and anything below a 164 on that section may merit retaking the exam. The other two sections hold little weight with admissions committees; however, extremely poor performance could harm you, so don't completely ignore those sections.

PREPARATION With the preparation you have done in math and statistics, scoring well on the quantitative section should not be too difficult, but be sure to prepare yourself by taking several practice exams until you feel comfortable with the format of the test. If you want to be extra well prepared, you may consider exploring some other test preparation resources. A list of these is also included in Appendix B.

RETAKING THE TEST If you do poorly, you can retake the GRE, but again, remember that taking the GRE is not cheap. The current (2024) fee is $220 for the general test; sending score reports to the first four institutions or schools you choose are free, but each additional score

report costs $35. You would be best served by preparing well and then getting the GRE out of the way early, so you aren't stressing over it as test deadlines approach.

*The number of Statistics PhD programs who require the general GRE test has declined since COVID. This will likely continue to change as time goes on (i.e. schools may require it again or remove it), so keep an eye out for changes to the GRE requirements at each of the schools you are interested in. Whether or not you will need to take it will be dependent on you and your list of programs.

Letters of Recommendation

A key component of your application will be the letters of recommendation that faculty members write for you. You will typically need three letters of recommendation for your application, so it is important to connect with multiple faculty. In requesting faculty to write letters of recommendation on your behalf, you should give them adequate time to write the letter. The more time they have, the better their letter will be.

In deciding which faculty members to ask to write letters for you, consider the following:

- Try to have your letters of recommendation come from statistics professors. It is particularly helpful to choose letter writers who have an active research agenda in your area of interest or with connections to institutions you are most interested in attending. If anyone on the admissions committee recognizes the professor writing the letter, it can provide an advantage in admissions decisions. Also, admissions committees are better able to evaluate the careers of statistics professors, helping them to decide if these letters have much merit. They find it more difficult to evaluate letters from other sources and are likely to undervalue the opinions in those letters.
- Don't pressure anyone into writing a letter for you. Before asking a professor to write a letter for you, ask, "Would you feel comfortable writing a positive letter of recommendation for me for graduate school?" Bad letters can hurt your application, so make sure that the faculty members you ask will write you a good letter.
- You need letters that make it sound like you can walk on water. Try to get these letters from faculty whom you have worked for before, or in whose classes you have noticeably excelled.
- To have a strong application means you need to have strong letters of recommendation, which means you need to be a strong candidate. Professors can't change your grades or the work you've done so far. Having good letters has a lot to do with preparation you've already done.
- Any help you can give the professors in writing letters on your behalf will be appreciated. Be sure to give them a CV/resume, a letter or form indicating which schools

you will be applying to, and any other information regarding specific facts or accomplishments they are aware of but may have forgotten.

*At the end of the day, choose professors who know you best. Ideally, you want the people who can confidently vouch for you because they know you on a personal level. This will serve you better than receiving a letter from a professor with status and/or connections who hardly knows you.

Statement of Purpose

While the statement of purpose may not be the determining factor in getting you admitted to graduate school, it can certainly keep you out if it is poorly written. Here are some tips on writing that statement:

- Write a well thought out statement that is tailored to each specific program. This does not mean you need to draft an entirely new statement for each school, but you ought to change certain aspects of your document to cater to each one.
- Most schools will ask you regarding your research interests, why you wish to do graduate work, your professional goals, and how that school will help you accomplish these goals. Be realistic in writing these—the admissions committees will not be swayed by moving descriptions of one's passion for statistics.
- Try to be specific in describing your research experience as well as your proficiency in upper-level mathematics. Greater specifics indicate greater competency.
- Describe your research interests as best as you can, but don't talk too much about research interests if you don't have any or if you don't know what you really want to do. The admissions committees do not expect you to have your dissertation topic picked out, so don't feel the need to force anything.
- References to specific faculty members or papers written by faculty members can be beneficial if done properly. When you do this, it should be clear that you have done your due diligence on them. You don't want it to seem like you are name-dropping.
- Get feedback from professors and mentors, and revise your statement many times
- Be clear and concise, and avoid flowery oratory or storytelling

Completing the Application

Once you've completed the above steps, likely all that will be left is just filling out paperwork online and sending in transcripts to your different schools. But don't delay! Some schools will waive part of the application fee if you meet an early deadline, so it is in your favor to get your application in early. Also, if you are receiving PELL grants, some of the application fees may be waived entirely.

Once your application is in, try not to get overly anxious about hearing back from schools by any given deadline. You can get some idea of what offers may have gone out using online forums such as Grad Cafe or Reddit. However, every school does it differently, and schools are notorious for not meeting the deadlines they set forth in their application information. If you have been accepted to a program and have a decision deadline, but haven't heard back from a preferred program, it is appropriate to let your preferred program know about your deadline and your preferences.

IV. Conclusion

Summary

Preparing for graduate school in statistics requires a lot of work and admission to successful programs can be very competitive. If you think it is for you, start as early as possible so you can get the maximum amount of preparation in before it is time to submit applications. The best way to summarize the preparation necessary for graduate school is to immerse yourself in statistics and math. Attend all the events you can, take all the math classes you can fit in, seize every chance to visit with professors, and get involved in research if possible. You should genuinely enjoy statistics to the point where all of this starts to come naturally as you go on in your studies.

At the end of the day, the admissions process is highly subjective. This document is by no means a definitive guide or formula, but I hope you find it useful as you navigate your own journey.

Best of luck!

V. Appendix

U.S. World News and Report Rankings Top Graduate Programs in Statistics, 2022

1	Stanford University
2	UC Berkeley
3	Harvard University
3	University of Chicago
5	Carnegie Mellon University
5	Columbia University
7	Duke University
7	University of Michigan
7	University of Pennsylvania
7	University of Washington
11	North Carolina State University
11	University of North Carolina - Chapel Hill
13	Cornell University
13	Texas A&M University
13	UC Davis
13	University of Minnesota
13	University of Wisconsin
13	Yale University
19	Iowa State University
19	Penn State University

19	UCLA
22	Purdue
22	University of Illinois
24	Ohio State University
24	Rutgers University
26	University of Florida
27	UC Irvine
27	University of Texas at Austin
29	Rice University
30	Colorado State University
30	Florida State University
30	Michigan State University
30	University of Connecticut
30	University of Iowa

Additional Resources

GRE Prep

GRE Official Site (www.gre.org)
This is the official site for the GRE, and it contains many details about the test, test locations, and fees. There are also some practice materials available here.

GregMat (www.gregmat.com)
This is the absolute best resource when it comes to studying for the GRE. Greg only has you use official resources that are most like the test. He has countless lessons, practice problems, and strategies for getting a great score on the test. A subscription only costs $8/month.