

Guidelines for Graduate School Applications

- **When selecting PhD institutions:**
 - Start with departments/graduate programs and determine if they offer what you are looking for.
 - Identify the faculty in the department/group of interest and read their web pages – is there a match or interest?
 - Make sure there are multiple acceptable faculty options from which to select a research mentor.
 - In general, avoid applying to small/narrow programs like immunology, neuroscience and stem cell biology. (they often get 500 applicants for 5 openings)
 - Look for larger umbrella programs.
 - These umbrella programs often include the disciplines in the narrow programs and offer much better odds for admission. Faculty from immunology, neuroscience and stem cell programs are often also members of the umbrella programs and can select you for their labs. (Stanford example).

Guidelines for Graduate School Applications

- Do not to apply to programs for which you do not have an appropriate background. Even if you would like to change fields, you need foundations.
- Determine if you are allowed to apply to more than one department/program. If you can, you increase your odds for admission. (U Wash & U Wisc)
- Give your referees sufficient notice and provide them with as much information as possible (SOP, CV, transcripts, GRE Scores, description of other research experience).
- When possible, make an effort to get to know the faculty or supervisors who write your letters.
- OK to contact potential PhD advisors by email to indicate your interest. (Some programs restrict making contact outside the application process).

Guidelines for Graduate School Applications

- Life Sciences (Biochemistry & Biology & Chemical Biology)
 - Most PhD programs will invite you for an interview with one or more date options. Once you know who you will interview with, read a few papers and become familiar with the research environment and institution.
 - Dress appropriately.
 - Once admitted, most programs have a required number of rotations before you select your research lab and if possible during your admission interview try to interview with faculty with whom you might want to rotate.
 - Most programs provide full-tuition and annual stipends of \$35K to \$45K and health insurance.

Guidelines for Graduate School Applications

- **Chemistry & Chemical Engineering (Also Computer Science & Engineering)**
 - **Most programs do not interview on campus and may or may not Skype.**
 - **Most do not rotate but rather admit you directly into a specific lab.**
 - **Most require GRE scores and may require the subject GRE.**
 - **DIGRESS to discussion of General GRE!**

“GRE Data Views” (From ETS)

Why not 1000?

The graduate admissions process is frequently characterized by tight schedules and insufficient staffing. In order to expedite the process, some graduate schools and departments set an **arbitrary cut point** for GRE General Test scores. Applicants whose scores fall below this cut point are given little or no consideration in the admissions process.

“The following graphs illustrate why it is **INADVISABLE to routinely disregard applicants whose combined verbal and quantitative scores fall below 1000.”**

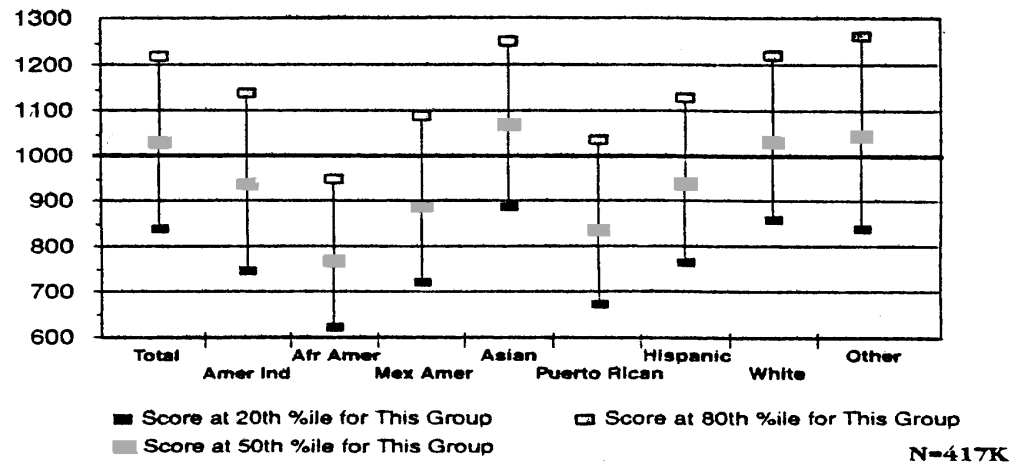
The Role of GRE Scores in the Admissions Process

The data presented here serve to underscore the importance of appropriately using GRE scores in the admission process. GRE scores are a valuable component of the graduate application package. Combined with other information, they can provide admissions officers with important information about the skills and abilities of their applicants.

“GRE scores **should never be used as the sole criterion by which applicants to graduate programs are denied admission.”
(Do exercise to determine if doing so.)**

ETS – DataView: Why Not 1000?

Figure 1
Combined GRE Verbal & Quant Scores
for Selected Groups



•Percent Below 1000

- 86% of African Americans
- 69% of Mexican Americans
- 48% US Citizens
- 76% of Puerto Ricans
- 61% of American Indian and Hispanic
- 39% Non-US Citizens

Ethnic/Racial Differences versus Gender

- **Percent Below 1000**

- **86% of African Americans** **76% of Puerto Ricans**
- **69% of Mexican Americans** **61% of American Indian and Hispanic**
- **48% US Citizens** **39% Non-US Citizens**

- **Male versus Female**

- **% Male Below 1000?** **Your guess?**
- **% Female Below 1000?** **Your guess?**

- **And the answers is:**

Ethnic/Racial Differences versus Gender

- **Percent Below 1000**

- **86% of African Americans** **76% of Puerto Ricans**
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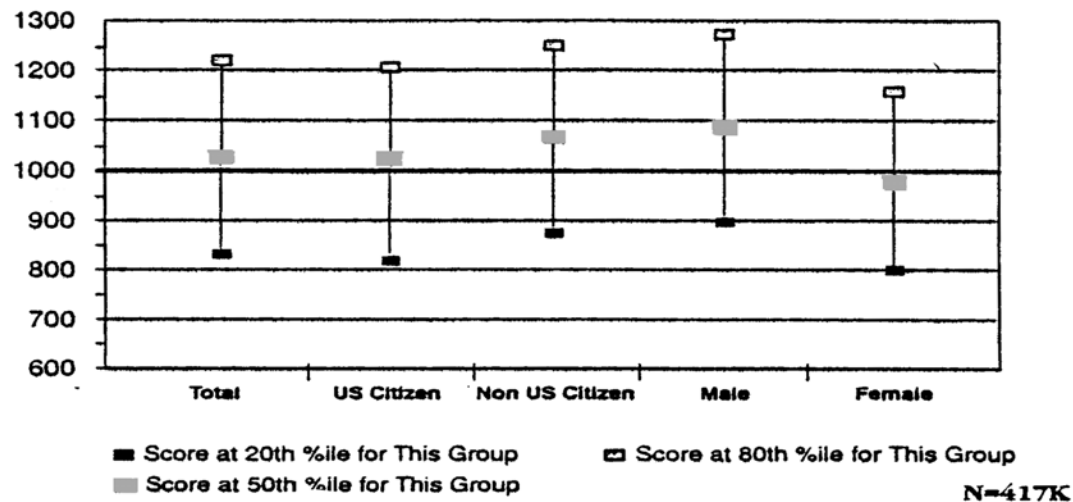
- **Male versus Female**

- **% Male Below 1000? 35%**
- **% Female Below 1000? 55%**

- **And the answers is:**

ETS DataView - Why Not 1000?

Figure 2
Combined GRE Verbal & Quant Scores
for Selected Groups



• Total, Citizenship and Gender Groups

- 46% of total GRE examinees fell below 1000.
- 39% of non-US citizens and 48% of US citizens fell below 1000.
- 55% of females and 35% males had a combined score of less than 1000.

How to use GRE scores #2

Recognize that scores and percentile ranks are imprecise. Consider score differences *relative to the standard error*. Score differences that may look important may actually be statistically insignificant (*meaningless*).

Between 1 August 2011 and 30 June 2014 there were 1.6 million GRE test takers.
Verbal & quantitative reasoning score ranges: **130 to 170 (Why not Zero to 40?)**
Analytical Writing score range: 0 .0 to 6.0

	Mean	Std. dev.	Illustration: range of scores that are statistically the same
Verbal reasoning	150	8	142 (17%ile) to 158 (80%ile)
Quantitative reasoning	152	9	143 (14%ile) to 161 (88%ile)
Analytical writing	3.6	0.9	2.7 (10%ile) to 4.5 (82%ile)
Verbal reasoning + Quantitative reasoning	INVALID!		

Take away:

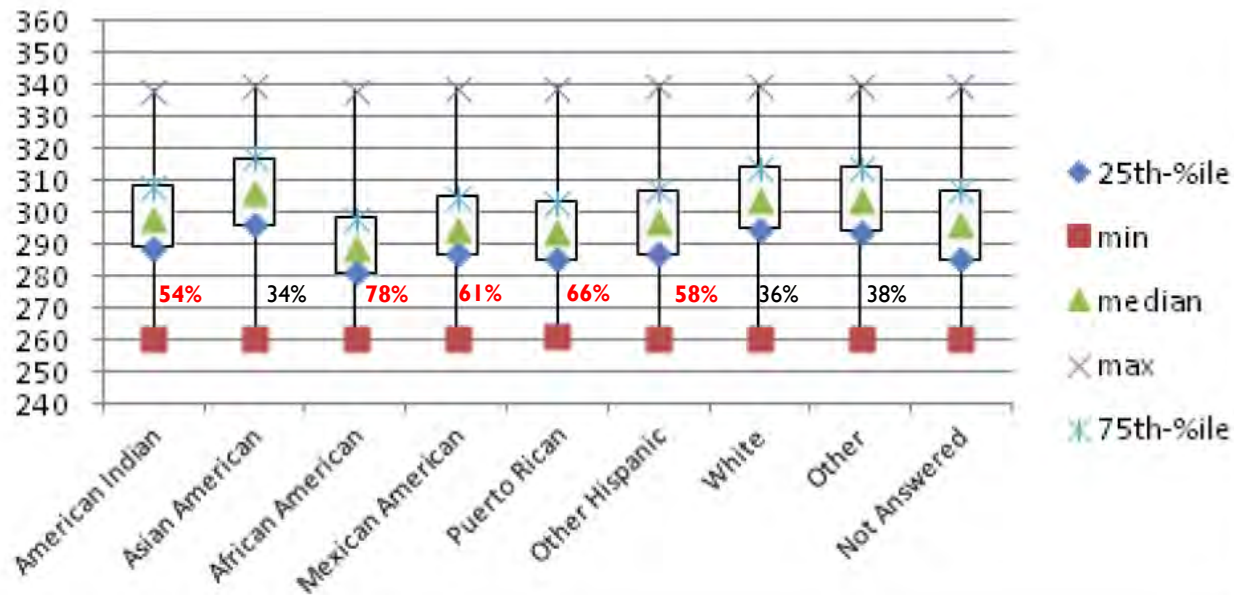
Avoid drawing conclusions from differences in numbers that may appear large *but that have no real significance*.

Why not combine scores and use a cut-off, e.g., 300?

It will disproportionately exclude URM candidates

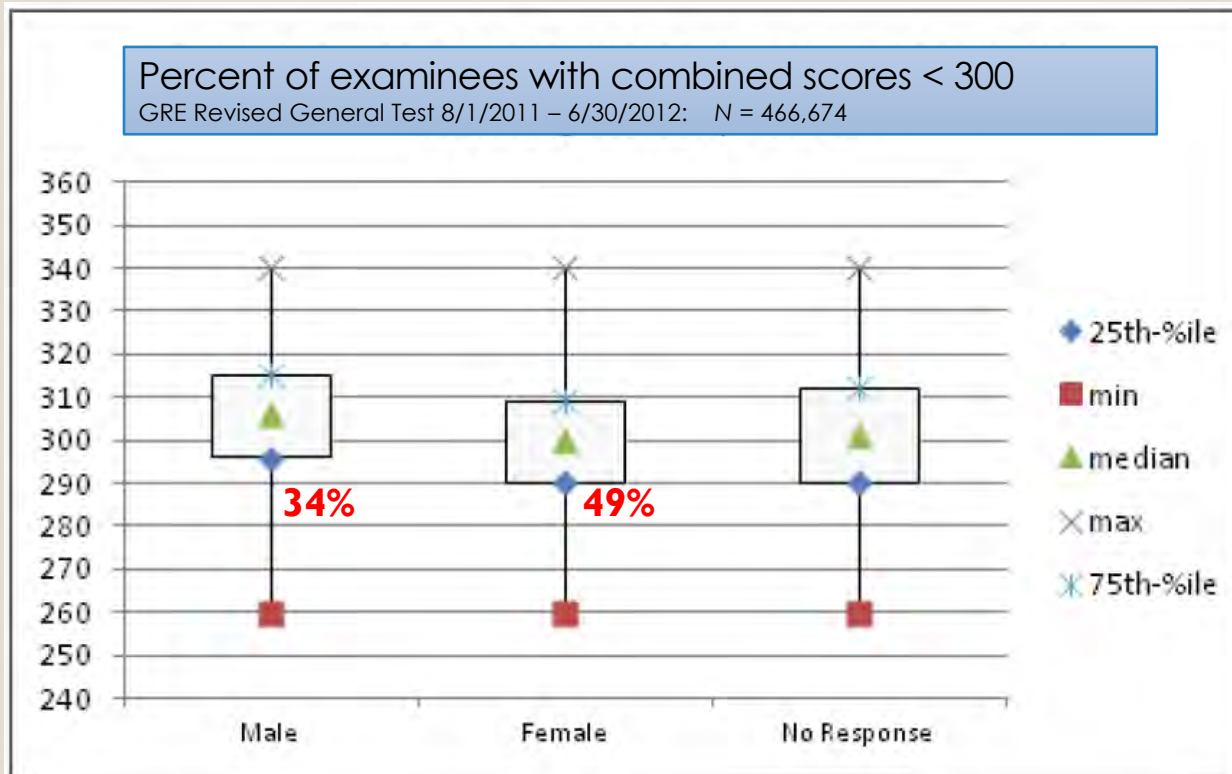
Percent of examinees with combined scores < 300

GRE Revised General Test 8/1/2011 – 6/30/2012: N = 466,674



Why not combine scores and use a cut-off, e.g., 300?

It will disproportionately exclude female candidates.



Guidelines for Graduate School Applications

- **What can we do about the Bias in the GRE General Exam?**
 - **Avoid programs & Institutions that Require the GREs!**
 - (<http://seo.sfsu.edu/content/phd-applications>)
 - **Most reviewers of Graduate Applications have the impression the General GRE measures your ability to read, write and calculate. When scores are low, provide an explanation!**
 - **When GREs are Required, Dispel the Misunderstanding with Facts.**
 - **In your SOP point out your grades in English, Speech, Scientific Writing & Thesis**
 - **Point out the range of college math courses and the corresponding grades**
 - **Eg. 28thile Quant GRE after completing 3 semesters of Calculus, Linear Algebra and Differential Equations with B or higher grades (Many similar examples)**
 - **Verification is available on your transcripts**
 - **An alternative in the absence of evidence is to complete a MS degree with Thesis.**
 - **There are MS degree programs that provide pre-doctoral Stipends & Tuition**

Guidelines for Graduate School Applications

- **Critical Components of Graduate Application:**
 - **Statement of Purpose (SOP)**
 - **1-2 pages that are well thought out and informative.**
 - **Research experience(s) description is critical.**
 - **Explanation of issues that need to be addressed like overall grades, a bad semester or grade, performance on the GRE should be explained.**
 - **What is it about the institution you are applying to that interests you and why are you applying (unique program and faculty members X, Y & Z, etc).**
 - **Do not just identify one faculty member of interest but instead ID several (selection process)**
 - **Ask several faculty or other experienced people to read and critique your SOP.**

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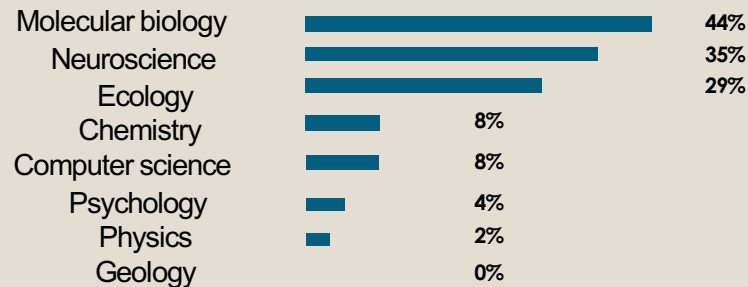
- **Critical Components of Graduate Application**
 - **Letters of Recommendation**
 - Prefer letters that address your research experience and performance.
 - The time and capacity of the relationship relative to STEM coursework,
 - Research or other significant interaction like a formal training program is important.
 - A detailed description and evaluation of your reliability, persistence, lab citizenship, work ethic, interaction with others, intellectual curiosity, lab skills and performance as well as character should be addressed.
 - Neatness of the application, timely response, and completeness are important. Write complete sentences, spell correctly (use spellcheck). Make an impression!
 - Apply to 5-10 schools over at least 2 tiers and be sure to select at least half that do not require the General GRE. (<http://seo.sfsu.edu/content/phd-applications>)

Ph.D. programs drop standardized exam

Amid concerns about diversity and the test's utility, many are moving away from the GRE

GRExit snapshot

Percent of Ph.D. programs at 50 top-ranked U.S. research universities that didn't require Graduate Record Examination general scores in 2018. (Programs in some disciplines weren't offered at all universities.)



<http://seo.sfsu.edu/content/phd-applications>

PhD Applications & Adios GREs! Fee Waiver Information

[UCSF fee waiver information](#)

[UC Berkeley fee waiver information](#)

[Stanford University fee waiver information](#)

Other Graduate School Resources

[Institute for Broadening Participation](#)

Adios GREs!

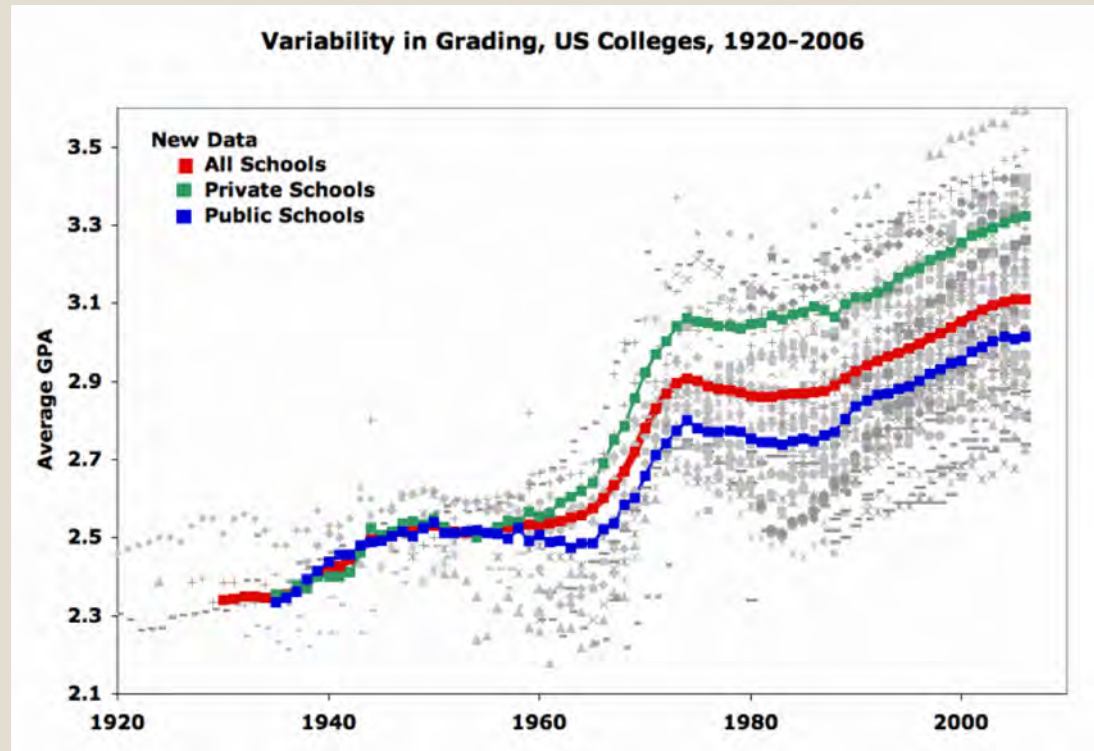
Based on the current literature it is clear the general Graduate Record Exam (GRE) is biased against women and minorities and also lacks any predictive value. We support dropping the use of the GRE in applications and review of applicants to STEM graduate programs. To this end, we participate in the efforts to remove GRE requirements at all graduate programs in STEM.

The NSF has dropped the use of the GREs from consideration of the NSF GRFP application and NIH has dropped the GRE from both T-32 and F-31 fellowship applications.

A running list (GRExit) of all the graduate (MS & PhD) programs who have dropped the GRE requirement is available below. (The GRExit table works best with Chrome or Safari.)

[GRExit: click HERE](#)

Grade Inflation 1930 to Present



Grading in American Colleges and Universities
Stuart Rojstaczor & Christopher Hoaly – March 04, 2010

Selected GPA for sample CSU and UC Campuses

	SJSU	CSU Full	CSU SB	SFSU All	SFSU CoSE	CSU EB	CSU Sac	CSU Fresn	UCB	UCI	UCLA	UCSD	UCSB	UCR
1980	2.65	2.58	2.74			2.99					2.87			
1981	2.7	2.59	2.78			2.97					2.87			
1982	2.69	2.61	2.8			3				2.9	2.84			
1983	2.67	2.6	2.77			2.98				2.9	2.83			
1984	2.68	n.d.	2.78			2.98				2.88	2.85			
1985	2.67	n.d.	2.79			2.96				2.87	2.86			
1986	2.69	2.61	2.78			2.95			2.95	2.86	2.88			
1987	2.69	2.61	2.8			2.96				2.85	2.87			
1988	2.69	2.62	2.8			2.93				2.86	2.91			
1989	2.7	2.64	2.87	2.93	2.88	2.94				2.88	2.96			
1990	2.7	2.65	2.86	2.94	2.85	2.94				2.9	3			
1991	2.76	2.57	2.86	2.94	2.88	2.95				2.93	3.01			
1992	2.71	2.57	2.88	2.96	2.88	2.96				2.94	3.04			3
1993	2.72	2.56	2.87	2.96	2.89	2.94	2.8			2.94	3.03			2.99
1994	2.73	2.58	2.89	2.96	2.86	2.96	2.78			2.94	3.01		2.84	2.94
1995	2.71	2.58	2.88	2.96	2.87	2.95	2.78			2.92	3.03		2.86	2.94
1996	2.69	2.6	2.89	2.97	2.93	2.98	2.77		3.1	2.92	3.05		2.86	2.89
1997	2.72	2.6	2.93	2.97	2.88	2.98	2.8		3.12	2.93	3.04		2.86	2.82
1998	2.72	2.66	2.93	2.97	2.89	2.97	2.82			2.93	3.06		2.91	2.76
1999	2.76	2.68	2.96	2.98	2.89	2.99	2.83			2.95	3.1		2.93	2.73
2000	2.73	2.69	2.98	2.97	2.89		2.84			2.95	3.13	3	2.97	2.74
2001	2.72	2.69	3	2.98	2.97		2.85			2.95	3.16	3.01	2.98	
2002	2.72	2.65	2.97	2.99	2.93		2.86			2.96	3.19	3.01	2.99	
2003	2.82	2.66	2.99	2.99	2.91		2.83			2.99	3.18	3.01	2.98	
2004	2.79	2.69	2.98	2.99	2.88		2.85	2.88		2.98	3.19	3.02	3	
2005	2.79	2.68	2.95	3.03	2.93		2.88	2.85	3.24	2.98	3.19	3.01	3.01	
2006	2.79		2.93	3.03	2.92		2.86	2.84	3.27		3.19	3.01	3.02	
2007	2.81		2.92	3.06	2.97			2.85			3.21	3.01		
2008	2.85			3.04	2.97						3.22	3.02		

<http://www.gradeinflation.com/>

Selected GPA for sample Private Universities

	Princeton	Northwestern	Duke	Pomona	Harvard	Cornell	Penn	Stanford	Columbia	Yale	
1980	3.13	3.02	3.02	3.06				3.27			
1981	3.13	3.04	3.03	3.07							
1982	3.14	3.03	3.03	3.08				3.24	3.2		
1983	3.16	3.04	3.04	3.03							
1984	3.15	3.05	3.03	3.07							
1985	3.17	3.05	3.06	3.12	3.17						
1986	3.16	3.05	3.07	3.17	3.21			3.3			
1987	3.2	3.09	3.12	3.18	3.23					3.27	
1988	3.19	n.d.	3.15	3.18	3.24			3.34			
1989	3.21	3.12	3.19	3.22	3.28						
1990	3.22	3.17	3.21	3.26	3.3	3.13		3.37			
1991	3.24	3.2	3.25	3.26	3.3	3.13					
1992	3.25	3.21	3.27	3.27	3.31	3.18	3.16	3.4			
1993	3.27	3.23	3.29	3.28	3.31	3.17	3.17				
1994	3.3	3.23	3.32	3.3	3.33	3.17	3.17				
1995	3.31	3.25	3.32	3.33	3.36	3.18	3.19				
1996	3.31	3.27	3.32	3.36	3.38	3.18	3.23				
1997	3.34	n.d.	3.32	3.36	3.38	3.2	3.24				
1998	3.32	3.32	3.32	3.37	3.4	3.21	3.28				
1999	3.34	3.35	3.33	3.39	3.42	3.22	3.31				
2000	3.36	3.35	3.36	3.41	3.41	3.25	3.32			3.36	
2001	3.38	3.38	3.37	3.42	3.39	3.27	3.32				
2002	3.37	3.35	3.4	3.43	3.41	3.29					
2003	3.37	3.35	3.4	3.44	3.42	3.31					
2004	3.35	3.36	3.42	3.47	3.43	3.32	3.44				
2005	3.3	3.39	3.42	3.48	3.45			3.55	3.42		
2006	3.27	3.37	3.44	3.49		3.36		3.42		3.48	
2007	3.28	3.4		3.51							
2008	3.28	3.41								3.51	

<http://www.gradeinflation.com/>

Strategies for Graduate Admissions

- Strong undergraduate performance in an appropriate STEM Degree Program.
- Significant undergraduate/MS independent research experience(s).
- Clear, informed and well-stated Statement of Purpose (as opposed to Personal Statement)
- Three strong letters of Recommendation based on:
 - 1) In-depth (>1 year) research in field of planned graduate study
 - 2) Summer research at Research Intensive Institution
 - 3) Significant course (especially lab or field) involvement – Instructor knows you well.
 - 4) Senior thesis faculty sponsor.
 - 5) Program Director of structured pre-doctoral program.
 - 6) Start early and get to know your referees.
- Rigorous selection of courses in major & strong math and quantitative background.
- Anticipate use of General GRE exam. Do well or avoid institutions that use them.