PHYSICS CAREER HURDLES

The GRE and the Qualifying Exam
Your graduate application package contains a number of elements; the better each is the better graduate school you will attend.

- GPA
- Letters of Recommendation (know some professors)
- Research (Papers are best).
- Major awards (Goldwater etc.)
- Diversity (are you an eskimo).
- General GRE Score
- Subject GRE Score
The GRE comes in two pieces, and most graduate schools require both. Many fields require the general GRE and there are quite a number of study materials for the test. You should select one and prepare. I will not discuss the general exam. The general GRE is changed format last August, so old test preparation materials may not be effective. The subject test is a different matter. There are almost no useful preparation materials for the Physics Subject GRE. Both tests are administered by ETS, the Educational Testing Service.
WHAT DO YOU NEED?

- Scores range from 440 to 990
- Less than 500 and you’re probably out.
- 700 will probably get you in.
- 800 and some of your sins are forgiven.
University of Maryland - Average GRE score 740, GPA 3.79.
University of Illinois - Typical 700-800.
We have placed students with a score of 510. These students had an otherwise outstanding resume.
We have had a student (almost) rejected for a score of 500.
WHAT DOES THIS MEAN?

- GRE has 100 questions.
- You lose \( \frac{1}{4} \) point for every incorrect answer.
- Score = \#Correct - \( \frac{1}{4} \)*Wrong
- For Test 1: After the above penalty is applied, 500 = 16 correct(13%), 700 = 44 correct(59%), 800 = 58 correct(78%).
- The percentile is in () above.
Student 1 - 4.0 gpa, 820 GRE, multiple awards, publishable honors research. Student was accepted everywhere, finally chose Illinois.

Student 2 - 4.0 gpa, 700 GRE, summa honors research. Accepted early admission University of Rochester. Number one optics school.

Student 3 - 3.5 gpa, 980 GRE, no honors research. Accepted Maryland, rejected Cal-Tech.

Student 4 - 4.0 gpa, 680 GRE, no honors research. Hardship. UT-Austin.
SPECIFIC EXAMPLES

- Student 5 - gpa 3.5, GRE 560, honors research, accepted after a phone call to OU.
- Student 6 - gpa 3.2, GRE 560, honors research, Alabama - Birmingham.
YOU HAVE TO BE GOOD AND FAST

- Suppose you get 30 correct and none incorrect. Scaled score = 690. You are going to a good graduate school.
- Suppose you get 30 correct and 30 incorrect. Scaled score = 620. You are going to an OK graduate school.
- Suppose you get 20 correct and none incorrect. Scaled score = 600. You are going to an OK graduate school.
- Suppose you get 20 correct and 20 incorrect. Scaled score = 560. We are going to have to work to find a graduate school.
- Suppose you get 67 correct and none wrong. Scaled score 990. You can get in anywhere.
You have to work problems to be prepared for this test.
What Does It Cover?

- Mostly it covers the introductory sequence, UPI-UPIV(Modern) but you have to know it well, including things your class did not get to.

- Some of the most important topics from Quantum, EM, and Mechanics.
There are only five published physics GRE exams, make sure you use them well.
I have placed everything I could find about the GRE at the wiki at
http://www.uark.edu/depts/physinfo/wiki/
But, you’re not done. After you enter graduate school, you will have to pass a qualifying or candidacy exam. This usually taken after the first year to year and a half.

Normally, you have two chances to pass.

It covers E+M, mechanics, and quantum and sometimes statistical mechanics at the advanced undergraduate and graduate level.

Many schools allow a free try at the exam as you enter graduate school, called a “free shot”.

I recommending using the free shot as motivation to do some preparation in the summer before graduate school.