



*Are you considering  
Graduate School?*

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# **Why graduate school?**

## **Considerations:**

- **Gives you more depth in your focal area.**
- **The intellectual growth associated with graduate school will help your career.**
- **The long-term financial rewards from a Masters degree are far greater than the short-term financial impact of another 1-2 years in school.**

**For many students, graduate school is the right path to meet their professional goals!**

# Master's Degree or Ph.D.?



- **Master's degree (1-2 years)**
  - **Plan A: Thesis (~2 yrs)**
    - **Additional coursework and a thesis research project will hone your engineering skills. Good option for those who wish to pursue R&D in industry.**
  - **Plan B: Project (no thesis, 1-1.5 yrs)**
    - **Additional coursework will give greater depth. Project will cap the experience. Good option for those eager to join the workforce or for those who will go on to a Ph.D.**
- **Financial support is more limited for Master's students than for Ph.D. students.**

# Master's Degree or Ph.D.?



- **Ph.D. (4-6 yrs. after undergraduate)**
  - **Required for full-time college professors.**
    - **College professors report very high levels of job satisfaction.**
  - **Generally a Ph.D. is required to lead R&D projects at large companies and government labs.**
- **Chances of acceptance and full financial support are better if you specify an interest in a Ph.D.**
- **People don't pursue a Ph.D. for financial gain, but you will make a good living and the unemployment rate of Ph.D.s is very low.**

# Where to apply?



- **Aspirant Schools**
  - Schools where you are unlikely to be accepted. Apply to ~2.
- **“Middle” schools**
  - You have a very good chance of being accepted (apply to ~2-3).
- **“Safety” schools**
  - You are almost certain you will be accepted. Apply to 1 or 2.
- **Generally, you should go to the highest ranked program that works with your constraints.**
  - Reputation matters.
  - Generally, better schools offer their students better financial packages.
  - Your student colleagues and professors will bring out your best → leading to greater development.



# Where to apply?

## Other considerations:

- Regional reputation vs. National reputation
- Think carefully about geography.
  - Expanding your horizons vs. Being close to family/friends.
  - It's one of the few times in your life where you can essentially pick where you live.

## The 2017 top 10 in ME (from USNews)



- 1. MIT and Stanford (tie)
- 3. UC, Berkeley
- 4. Michigan and Cal Tech (tie)
- 6. Georgia Tech and Illinois (tie)
- 8. Carnegie Mellon, Cornell, Purdue (tie)
  
- Don't obsess on rankings. All top-40 programs have solid reputations. From 40-60 there are school with good reputations. (e.g. Michigan Tech). Beyond top-60 it is hard to find reputable schools.



## **Where have MSOE students attended engineering graduate school recently?**

- **MIT (2 are currently there)**
- **Stanford**
- **Cal Tech (multiple)**
- **Georgia Tech (2 are currently there)**
- **Michigan**
- **Purdue (at least 2 are currently there)**
- **UW-Madison**
- **Notre Dame**
- **Minnesota**
- **Michigan Tech**
- **Marquette**
- **UC-Davis**



# How you will be evaluated?



- **GPA (factoring in selectivity your college)**
- **GRE scores (verbal, quantitative, analytical)**
- **Letters of Recommendation**
  - **Your statement of purpose and extracurricular activities may also receive consideration.**
  - **If you overcame exceptional obstacles to succeed in college, you should highlight that in your essay and let your recommenders know (e.g. are you a 1<sup>st</sup> generation college student?)**

# How you will be evaluated?



- **GRE**
  - A standardized test administered by ETS.
  - Prep courses are widely available.
  - At the very least you should use the free test prep materials and do some practice tests.
  - Familiarize yourself with the computer interface/calculator.
  - Studying vocabulary to try to improve your verbal score may be helpful. Work from a list of words that show up often on the exam.
  - Your preparation should focus on gaining familiarity, effective timing, and comfort.
  - If possible, take the exam at a time when you don't have a lot of other schoolwork.



## **How you will be evaluated?**

- **Letters of Recommendation**
  - **Ask professors that know you well and that you trust. Ask them at least 2 weeks before the letter is due “I’m applying to graduate school. Do you think you know me well enough to write me a good letter of recommendation?” Give them the chance to say no gracefully. You do not want a “luke-warm” recommendation!!!**
  - **Picking professors with a link to a target school can only help your chances at that school.**
  - **Spend some time (e.g. drop by office hours) with recommenders so they understand your professional goals and your background.**
  - **Be extremely courteous to your recommenders. It takes a lot of time to write these letters. Respect their time.**
  - **Always waive your right to view the letters.**



## **Tips for Success**

### **Contact programs that interest you.**

- **Look at faculty research profiles on department websites. Identify 2-3 professors that you would like to work with at each school.**
- **Call and/or email the director of graduate studies (he/she is a faculty member in the department). It's part of their job to interface with prospective students. Let him/her know what your interests are and that you plan to apply.**
- **Email professors that you would like to work with. Keep it brief. Express your interest in their work and that you plan to apply to their program. Explain why their work interests you. Put a bit about yourself (institution, major with focal area, GPA if it is high). Attach your resume if it is impressive. Ask them if they plan to take on new graduate research assistants next year. Don't be offended if they don't respond. Try someone else.**



## Forms of financial support for engineering graduate students

- Generally, engineering students get paid ~\$20k-\$30k to attend graduate school through:
  - Research assistantships
    - For full tuition support, you would work 20 hrs/wk on research project.
  - Teaching assistantships
    - Typically 10 hrs/wk with other support
  - Fellowships
    - Gives you most flexibility in choosing your path.
    - Can be from federal programs (e.g. NSF or DoD) or college programs.



## **Specific advice from your student colleagues**

- **Take the GRE before senior year starts**
- **Reach out to potential advisors.**
- **Apply to appropriate number of schools (~6). It is a lot of work to prepare the applications and can get expensive.**
- **In statement of purpose, “Show, don’t tell.”**
- **Take the free computer-based GRE available from ETS.**
- **Practice writing one or two essay questions in the allocated time after reviewing the sample responses from ETS.**
- **Make a decision on graduate school during your junior year (allows time to take GRE and write statement of purpose).**



## **Specific advice from your student colleagues**

- **Develop relationships with professors at MSOE**
  - **Visit them during office hours**
- **Have several people critique your statement of purpose.**
- **Always keep your recommenders updated on the status of your applications.**
  - **They want to know and you owe it to them!**
  - **You often have to ask for additional letters for fellowships/etc.**

# Let's talk to the panel of experts!



- This presentation is posted under the “courses” tab at

<https://faculty-web.msoe.edu/damm>

- Other resources:

- [www.thegradcafe.com](http://www.thegradcafe.com)
- <https://talk.collegeconfidential.com/>
- <https://owl.english.purdue.edu/owl/section/1/48/>