

Everything* You Always Wanted to Know About Graduate School?

**more or less*



entirely through Pacific rim metaphors!

making sense of the grad school experience...

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Pacific Rim: Your argument is invalid
because Sword Button 

in metaphors!

making sense of the grad school experience...

Perspectives



Jim Boerkoel



Roy Shea

grad-school jaegers

Overview

- **What is (CS) grad school all about?**
- ***Perceptions* of grad school...**
- Preparation for graduate school
- Choosing where to apply
- The application process and procedures

Words sometimes associated with "grad school" ?

Exciting, fun, stimulating, challenging...

Sometimes these extremes are
surprisingly close to each other...

you already know this!

... daunting, frustrating, #!&\$!*&**

Two tracks

- **Master's**: typically 1-2 years
 - May be exclusively coursework
 - Or, may have a thesis
 - Preparation for industrial R&D, management, some teaching venues
 - Financial support is *not* the norm
 - Some employers will pay for MS programs and/or release time for studies

Two tracks

- **Ph.D.** typically 4 – 6+ years
 - Coursework + exams ("quals") + significant research and thesis
 - Earn a master's along the way
 - Preparation for industrial research and academic careers
 - In CS, generally full tuition waiver + stipend for TA'ing or RA'ing ~ \$24-36k / year

Research Assistant

Teaching Assistant

POINTS OF VIEW



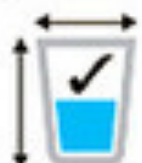
OPTIMIST

"The glass is half-full."



PESSIMIST

"The glass is half-empty."



REALIST

"Yep. That's a glass, alright."



IDEALIST

"One day, cold-fusion from a glass of water will provide unlimited energy and end war."



CAPITALIST

"If I bottled this and gave it a New Agey sounding name, I could make a fortune."



COMMUNIST

"This drink belongs to every single one of us in equal measure."



NIHILIST

"The glass does not exist, and neither do I."



OPPORTUNIST:

"There's a funny t-shirt in here somewhere."



Two tracks

Master's

Ph. D.

Advocate's view

helpful credential that
will set you apart

broaden your background;
improve your salary

test grad-school waters

Cynic's view

\$ for universities

4 years of undergrad
wasn't enough?

try something else first...

That this box is the smallest of the four is
totally accidental – *really!*



Two tracks

Master's

Ph. D.

Advocate's view

helpful credential that
will set you apart

broaden your background;
improve your salary

test grad-school waters

deeply pursue - and expand
on - a compelling field

it's "free"

profess!

Cynic's view

\$ for universities

4 years of undergrad
wasn't enough?

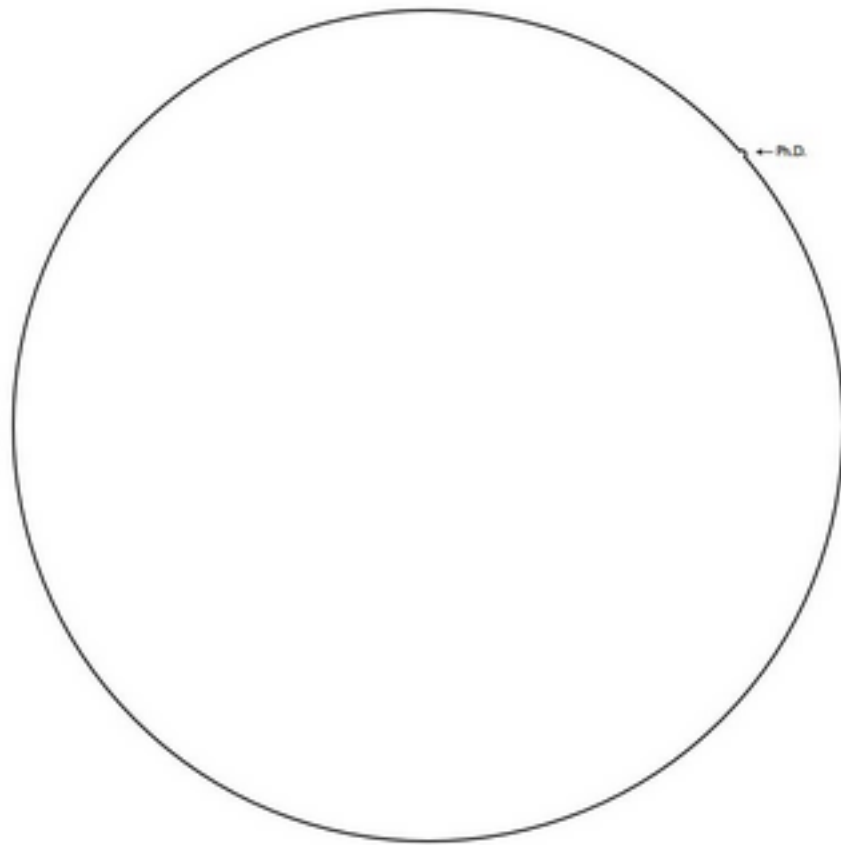
try something else first...

labor for universities

know a lot ...
... *about a little*

2013 ~ CS research's golden age

Matt Might's illustrated guide to a Ph.D

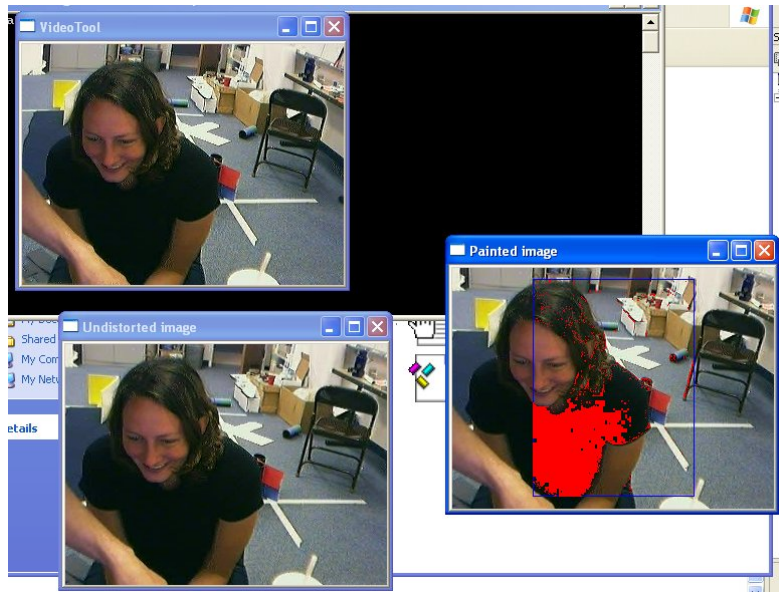


matt.might.net/articles/phd-school-in-pictures/

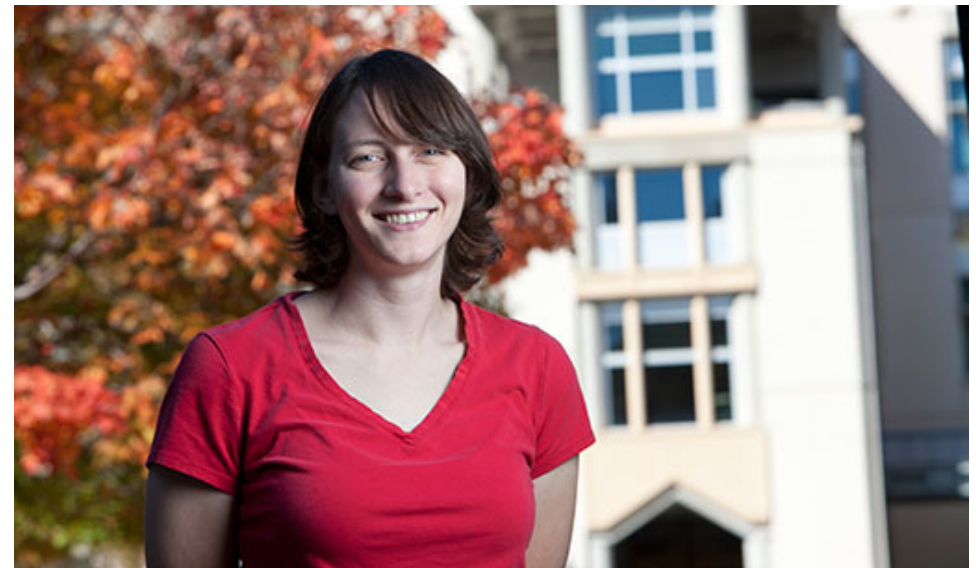
What is Grad School like?

Grad school rhymes with school. Other than that, there's really no similarity.

- Susanna Ricco



- HMC '06



- Ph.D., Duke '13

What is Grad School like?

As a first + second year student...

- Take two or three courses ~ perhaps two lectures and a seminar
- Attending colloquia
- Joining a research group
- Possibly being a TA
- Donuts...

not so different than HMC



What is Grad School like?

As an Nth year student...

- Attend colloquia
- Attend a seminar in your field
- Read articles in your field
- Work on your research project/problem
- Meet with your advisor "often" ...
... can be a *dance* of sorts

disconcertingly
unstructured?!

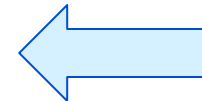
Lilian's thoughts...



these are 100% biased-Lilian-opinions, especially since I didn't reference anything when spouting out my thoughts and experiences.

The gist of grad school: If you're wondering what grad school is like, it's probably not too different from your summer research at Mudd (at least, that was true for me). The main difference is that these lectures, seminars, course assignments, and emails keep getting in the way of research, so research goes even slower! But I want to do these other things too, so it works out for me.

Abstracter deadlines: I mentioned that research projects are much longer hauls than problem sets. That means I can't get that same "oh snap this is due on Thursday" motivation that I would for homework sets – or at least not as directly. My research project might not even have a real deadline at all; it's this *thing* I work on, which will result in some papers along the way, but the papers are more like milestones than destinations, so this "destination" is a pretty amorphous and distant target. It's a simultaneously big and subtle shift in mindsets from undergrad.



Is grad school *difficult*?

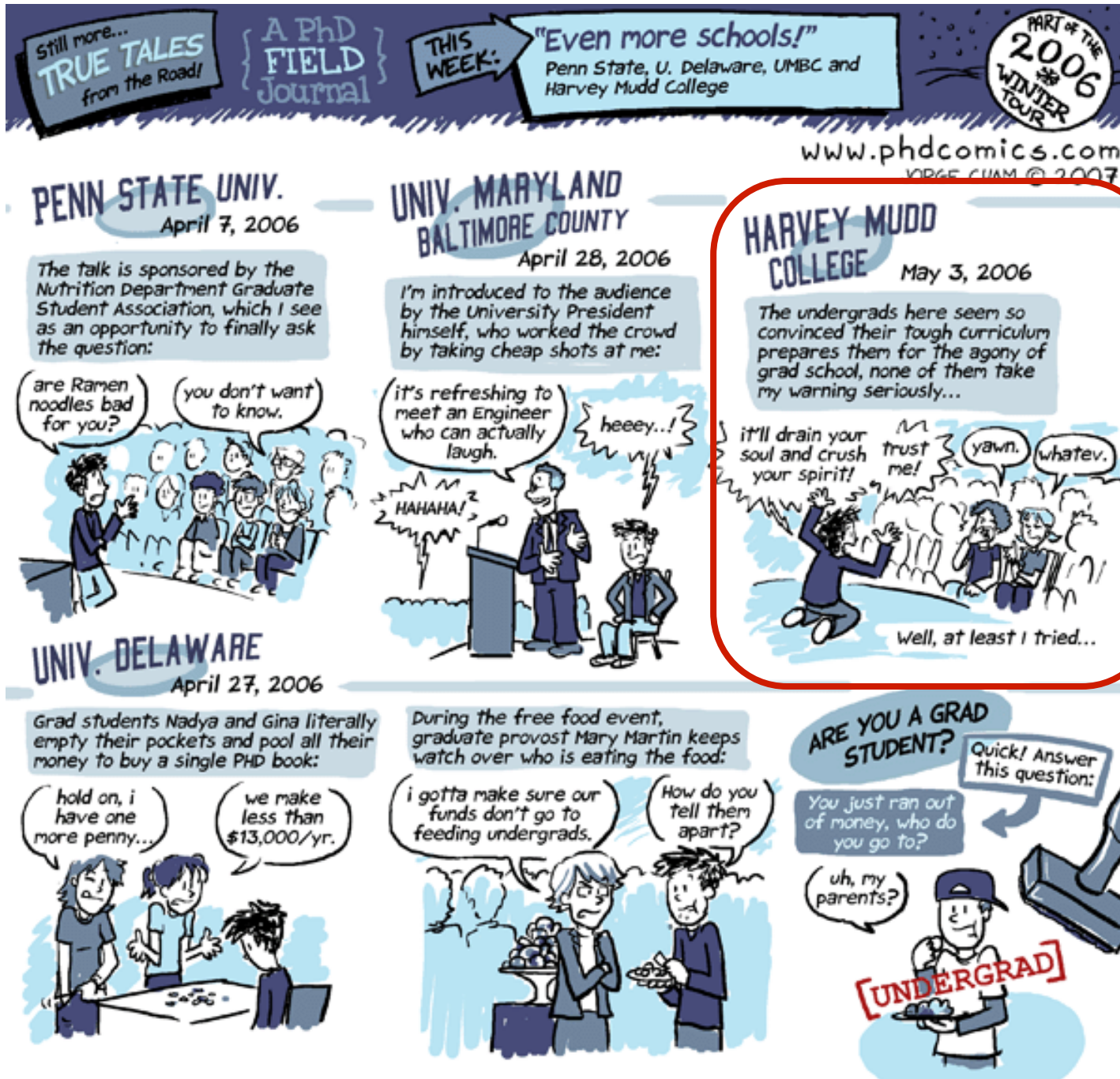


Not if you scoff at the mere idea of difficulty!



Not if you carry around this terrifying pike!

What is Grad School like?



Is grad school difficult?

Not really.

It requires...

- Organization
- Persistence
- Creativity

Where to go?

- Talk to advisor & other CS professors
- Look at departmental web and research pages
- E-mail graduate students... (+ then professors)
- Look at rankings ~ cautiously
- *For specific research areas, look widely!*

USN Rankings:

1. Stanford, MIT, Berkeley, CMU
5. Cornell, Illinois (Urbana-Champaign)
7. U. Washington
8. Princeton, UT Austin
10. Georgia Tech
11. Caltech, Wisconsin
13. Michigan
14. UCLA, UCSD, Maryland

... but the *right* school may be ranked 17+



Best taken
with lots of
Na -- or even
Nah!



Grad school makes Prolog look deterministic!

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... but the ***right*** school may be ranked 17+

***UCSB (35)
comp vis.***



Steve D.

***UCSC (53)
games***



Peter M.

Elaine S.

***CSU Fresno
MFT***

Hannah Hoersting, Tim Yee

Lilian's thoughts...



Where to go: I did my research on deciding where to go for grad school, and chose a place based on how well it fits me and my interests/needs, rather than just its reputation. Even though people would question why I'd turn down a higher-rank school for some place they might not have heard of, I'm very happy with my decision and know I'll be fine after graduation regardless. But you go to Mudd, so you know all about getting a great education and experience at a place "you never heard of." I'm probably preaching to the choir here.

+ 4 more pages...

Rancho Cucamonga - 0531

Prometric Testing Center
7365 Carnelian Street
Suite 107
United States of America
91730
9099449763

Applying

- GRE general test; *there is no GRE CS subject test*
- Letters of recommendation
- Personal statement

Grad school vs. Job... Why choose one?

do both!



Calvin



Will

Letters of recommendation

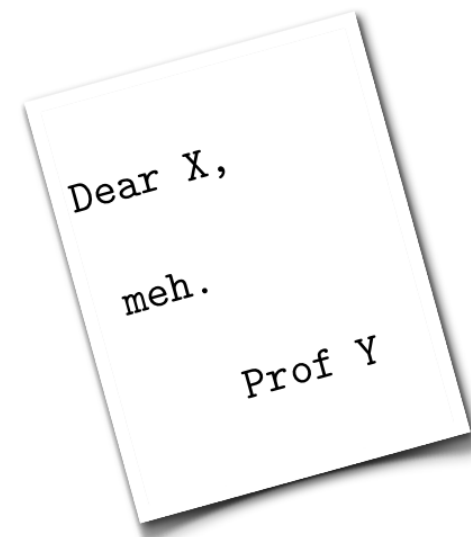
- Typically need 3
- **Most** valuable from research supervisors
- Or, folks who can say more than **DWIC**
 - *do provide your accomplishments!*
 - *we'll choose the superlatives...*



The audacity of
Hope College

Read Matt Might's post:

**How to get a great letter of
recommendation**



Matt Might: *advice*

HOWTO: Get into grad school for science, engineering, math and computer science

[\[article index\]](#) [\[email me\]](#) [\[@mattmight\]](#) [\[+mattmight\]](#) [\[rss\]](#)

Juniors and seniors often ask me how to get into a Ph.D. program. Having looked at applications for three years now, I feel like I can offer some good advice. [This advice applies for masters students too.]

The one-word version of that advice is: **PUBLISH.**

Read below for my full set of recommendations.

Update: I updated this with more on low GPAs, lacking publications, good examples and [what to do if you get rejected from grad school](#).

Feel free to [email me](#) if you're considering applying to the University of Wisconsin-Madison for graduate work, but please read my post on [how to send an email](#).

See Matt's many excellent posts:

- 10 ways to fail a Ph.D.
- the illustrated guide to a Ph.D.

The personal statement

- ***Not***, in fact, a personal statement!
- *"A letter to a possible Ph.D. advisor"*
- Highlight your summer/project/indep. work...
- Goal: ***show your potential to contribute to research***

Read, review, repeat!

- Steve Matsumoto



Fellowships

- School-specific fellowships and internships are often available.
- Consider applying for an **NSF Graduate Fellowship**:



2012 marks the 60th anniversary of the NSF GRFP!

Please visit the [NSF website](#) and special [60th anniversary web page](#) for information about the history of the program, profiles of past awardees, the winners of the 60th Anniversary Video Contest, the history of the program, and many other aspects of the GRFP.

GRFP Fellows Receive the Following:

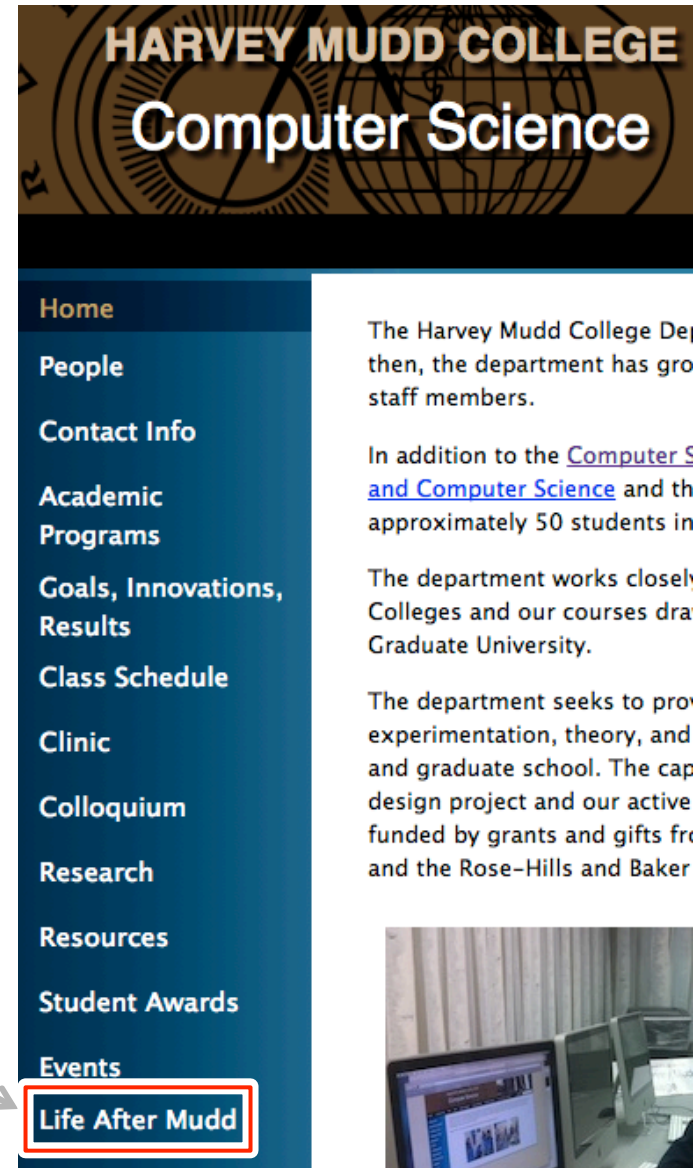
- Three years of support
- \$32,000 annual stipend
- \$12,000 cost-of-education allowance to the institution
- [International research](#) and professional development opportunities
- [XSEDE](#) Supercomputer access

funding rate: ~10-20%

To do list

(1) *Explore*: Google around

(2) Click on "*Life After Mudd*"



To do

(1) *Explore*: Google around

(2) Click on "*Life After Mudd*"

Deadlines!

HMC CS Graduate School

If you're a Mudd (or a student from another college planning to transfer to HMC) and plan to apply for graduate school in CS, please read this page for the application process and some forms that you'll need to complete.

1. Summer between junior and senior year

- Get in touch with your academic adviser and/or graduate school plans and developing an initial plan.

2. First week of fall semester

- **Deadline!** Register for the GRE subject test by the first week of classes at the latest so as not to miss the GRE CS subject test, so don't worry about that going to the GRE.
- Meet with your adviser to discuss your graduate school plans and discuss a possible set of people to write your letters of recommendation.

3. October 1

- Request letters of recommendation. You don't need to ask people to write your letters and know who to ask. See the [recommendation page](#) for details on how to request letters.
- Begin working on your statement of purpose. Draft your statement and ask professors for feedback on drafts. Visit the HMC [statement in this blog post](#). You might also take a look at the [purpose](#).

4. Wednesday immediately after Fall Break

- **Deadline!** Complete the [HMC Graduate School](#) application form and submit your letters of recommendation for you. The faculty will provide much useful and positive information to convert your draft into a final statement.
- Show your draft statement of purpose essay to your professors for feedback.
- If you are applying for a NSF Graduate Research Assistantship, provide your letter-writer with the [NSF form](#).

5. November 1

- **Deadline!** Provide your letter-writers with the [letter-writer form](#).

6. Winter!

- **Deadline!** Submit your applications!

(My) final thoughts...

Reasons **NOT** to consider grad school

You're not sure what
else to do.

To better position yourself
for another career

The free coffee + donuts!

Reasons to consider grad school

You thrive on
academic freedom.

You enjoy research
and/or teaching.

You enjoy the field
for its own sake.

The circled ones were *my* reasons...

Other thoughts



Questions or ideas...