Piled Higher and Deeper by Jorge Cham

DO YOU OFTEN FEEL
DEPRESSED, AND
UNABLE TO GET
MOTIVATED ABOUT
ANYTHING EXCEPT
CHECKING YOUR
EMAIL?

DO YOU SUFFER
FROM FREQUENT
ANXIETY ATTACKS
OVER THE LACK OF
MEANING IN YOUR
LIFE?

DO YOU EXPERIENCE
FREQUENT HEAD-
ACHES TRYING TO
COUNT HOW MANY
YEARS YOU'VE BEEN
IN SCHOOL?

THEN YOU ARE AMONG
THE MILLIONS OF YOUNG
ADULTS THAT SUFFER
FROM "POST-
BACHELORS DISORDER", OTHER-
WISE KNOWN AS "GRAD
SCHOOL".

The following is a paid advertising. The views expressed here do not
necessarily reflect the views of this comic strip. www.phdcomics.com

NOW THERE IS A CURE.

title: "Post-Bachelors Disorder" - originally published 9/30/2002
How to Be A Successful Graduate Student

It was the best of times, it was the worst of times

One ex-student's insight on how to get through graduate school and find a job

^ (and get the most out of)

Edwin Gerber
Oct. 18, 2006
The Take Home

Ask, and it shall be given you;

seek, and ye shall find;

knock, and it shall be opened unto you.

i.e. Take charge of Your education and research
Take Advantage of Columbia!

• Much of your graduate work will be done alone. Grad school is about establishing your independence, but . . .

• you are in a top-flight institution with so many resources

✦ faculty
✦ your fellow students
✦ research scientists, staff, postdocs, . . .
The Grad School
Stress Curve (Outline)

- getting used to a new place
- choosing advisor
- exams
- proposal
- thesis
- world cup
- first paper
- defense
- getting the next job
Other Curves

![Graph showing stress, productivity, and quality of life over time. The graph has a y-axis labeled 'index' and an x-axis labeled 'time (years).']

- **Stress** (Blue line)
- **Productivity** (Green dotted line)
- **Quality of life** (Pink line)
HMMMM, THESE ARE INTERESTING RESULTS. WE SHOULD TAKE THIS DATA AND TURN IT INTO A PAPER.

YES, AND WE SHOULD DO IT SOON, TOO.

REALLY? WE SHOULD?

GREAT! LET'S DO IT!

BY "WE" YOU ACTUALLY MEAN ME, DON'T YOU?

YES, AND BY "SOON" I ACTUALLY MEAN NOW. SO GET GOING.
Choosing an Advisor

- What do you want to do?
- Communication. (Famous and busy? Younger, but more accessible?)
- Know your needs and limitations
  If you advisor says nothing, does that mean you’re doing well, or doing poorly?
- Tenured?
- Speak to current graduate students!!!!!!!
**Expectations**

- What does your advisor expect of you?
  (Ask him/her!!!!!!)
  - background
  - teaching/research

- What do you expect from your advisor?
  - mentoring
  - hands on/hands off
  - feedback?
The Stress Curve

- Getting used to a new place
- Choosing advisor
- Exams
- Proposal
- Thesis
- Defense
- Getting the next job
- First paper
...H...HELLO..? PROF. SMITH..? I...I'M HERE FOR MY QUALS EXA...

CLICK!

IN TEN MINUTES, DERIVE THE UNIFICATION THEORY. \[
\frac{\pi}{2}! \text{ THE ANSWER IS } \frac{\pi}{2}!!
\]

WRONG. GET OUT. CLICK!

SIT DOWN.

B...BUT...

E E QUALS WEEK BEGINS.

Jorge Cham @The Stanford Daily

title: "Quals" - originally published 1/11/1998
Getting through The Exams

- Know the requirements
- Get advice (from professors and students)
- Plan courses appropriately
- Practice, practice, practice
Take Charge of your Exams (They’re Not All Bad)

• Can you shift the topic of your exams to meet the things you are interested in?
• Exam topics can be a spring board for your thesis research
• Do certain professors inspire you? Get them on your committee!
The Project/Proposal!

Title: "Thesis topic - Epiphany" - originally published 10/9/1998
Selecting a Project

- Does this topic excite you?
- Pick the low fruit!
- Avoid delusions of grandeur
- It’s a thesis, not your life
- Get advice!
- Does this topic really excite you?
The Proposal

- Know the literature
  - What has been done? Is this new?
  - Is this interesting? Is it publishable?
  - Where does it fit in big picture?
- What do you reasonably expect to happen?
- Can this be completed in c. 3 years?
- Does the technology exist? Funding?
Returning to the Stress Curve

- getting used to a new place
- choosing advisor
- exams
- proposal
- thesis
- DANGER - THE DOLDRUMS
- defense
- getting the next job
- first paper
title: "Post-quals Slump (PQS)" - originally published 11/1/1999
Doldrums

- Take charge - don’t expect your advisor to pull you out
- Get involved - reading groups, conferences, seminars
- Set short term goals
- Set a regular schedule
- Seek advice: students/postdocs/faculty
Publishing your first Paper

Are you sure this paper we're writing is going to get accepted?

Let me explain it to you. Our work is like this donut. Sure, it's all fluff, has no nutritional value...

...and there's a big gaping hole in the middle... BUT, if you sugar coat it, and add colorful little sprinkles to it...

...people will eat it up.

What if it makes them sick?

Title: "Our work is like this donut" - originally published 4/5/2004
Publishing your first Paper

- Know the expectations from the journal
- Work with your advisor
- Many will read only the abstract, intro, and conclusions
- Brevity is the soul of wit
- Document your work - reproducibility
- What is the main message in your paper
### Deciphering Academese

<table>
<thead>
<tr>
<th>English Phrase</th>
<th>Simplified</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;To the best of the author’s knowledge...&quot;</td>
<td>&quot;We were too lazy to do a real literature search.&quot;</td>
</tr>
<tr>
<td>&quot;Results were found through direct experimentation.&quot;</td>
<td>&quot;We played around with it until it worked.&quot;</td>
</tr>
<tr>
<td>&quot;The data agreed quite well with the predicted model.&quot;</td>
<td>&quot;If you turn the page upside down and squint, it doesn’t look too different.&quot;</td>
</tr>
<tr>
<td>&quot;It should be noted that...&quot;</td>
<td>&quot;OK, so my experiments weren’t perfect. Are you happy now??&quot;</td>
</tr>
<tr>
<td>&quot;These results suggest that...&quot;</td>
<td>&quot;If we take a huge leap in reasoning, we can get more mileage out of our data...&quot;</td>
</tr>
<tr>
<td>&quot;Future work will focus on...&quot;</td>
<td>&quot;Yes, we know there is a big flaw, but we promise we’ll get to it someday.&quot;</td>
</tr>
<tr>
<td>&quot;...remains an open question.&quot;</td>
<td>&quot;We have no clue either.&quot;</td>
</tr>
</tbody>
</table>

![Source](www.phdcomics.com)
Nuts and Bolts

• LaTeX
  • Steep learning curve - ask someone for help when starting up!
  • Very powerful, great for equations
• Word
  • Easier to pick up
  • not as flexible/stable
• In either case, find a template!
Finishing the Thesis

title: "I am a writing god!" - originally published 1/29/2003
Finishing the Thesis

• Publish your research early:
  one paper = one chapter

• Remember: No one will read your thesis . . . but make sure it won’t embarrass you in case they do!

• For unpublished work:
  one chapter = one paper
Finishing the Thesis

- In the end, you need to get it done
- Writing groups
- Get away from distractions
- Keep perspective
Tough Times

OK, I got one for you. Grad school is like this cup of coffee. It's dark, bitter, keeps you awake at night...

...and in the end, all you're left with is an empty, rolled up piece of paper.

Too much of a stretch?

Analogies are like undergrads. They can't all be clever.

"Our work is like this donut" - originally published 4/7/2004
Stress Management

• Balance your work load
• Law of diminishing returns
• Balance your life
  • volunteering:  http://www.columbia.edu/cu/ci/
  • arts passport:  http://www.cuarts.com/nyc_arts/passport_to_new_york.html
  • jazz: Bill’s Place, Small’s
  • escape: Hernshead (Central Park)
Know when to Get Help

- Graduate school can be isolating
- Self-doubt - you’ve studied this stuff so long, it all seems obvious. But that’s because you’ve looked at it so much.
- you have more options than you think
- Depression will cloud your perspective, prevent you from working effectively

http://www.health.columbia.edu/docs/about_us/cps.html
Almost Done!!

glassing used to a new place
choosing advisor
exams
proposal
thesis
defense
first paper
getting the next job
You are applying for faculty jobs? I, uh... um... I mean, of course I'll write a recommendation...

I just... I'm torn between feeling I should warn you the professor life is very hard, extremely frustrating, and with little reward...

And feeling proud that one of my students has decided to pursue this noble endeavour...

Please, Prof. Smith...

But mostly I'm feeling confused. You do know they expect you to graduate before hiring you, don't you?

Right. I've been meaning to talk to you about that for a while now...

Title: "Faculty Job Search" - originally published 4/3/2002
Getting a Job

• Industry
• Academic
• National Labs
• Postdocs
• Fellowships- general (NSF/DOE) and specific to your field
Postdocs

- mathematics
- support from teaching funds
- fixed schedule, deadlines, decisions
- applied programs
- research funding
- more informal, contact people directly
- Fellowships
In Conclusion

• Take charge of your research!
• Talk with profs/students/postdocs!
• Try your best to keep balanced.
• Graduate!!!!!

• Thanks to my advisors and mentors, Geoff Vallis and Lorenzo Polvani
title: "Signs you`re close to graduating" - originally published 3/8/2002