



Habits of Good Graduate Students

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I gave this talk in a session on academia to about 150 undergraduates (and a few grad students) at the 2010 AMS Annual Meeting in Atlanta.

Who is a “good” graduate student?

- Intelligent?
 - Makes all A's?
 - Never ever misses a class?
 - A perfect writer?
 - Always at his/her desk?
 - Always happy and smiling?
- Does a “good” graduate student have to be all of these? Any of these? None of these?



It's more complicated!

- Almost everyone will give you different advice!
- Different traits are needed in different situations.
- Points I like to remember:
 - “Don't let school get in the way of your education.” – Mark Twain
 - Academia is a business. “Graduate student” is a job title.

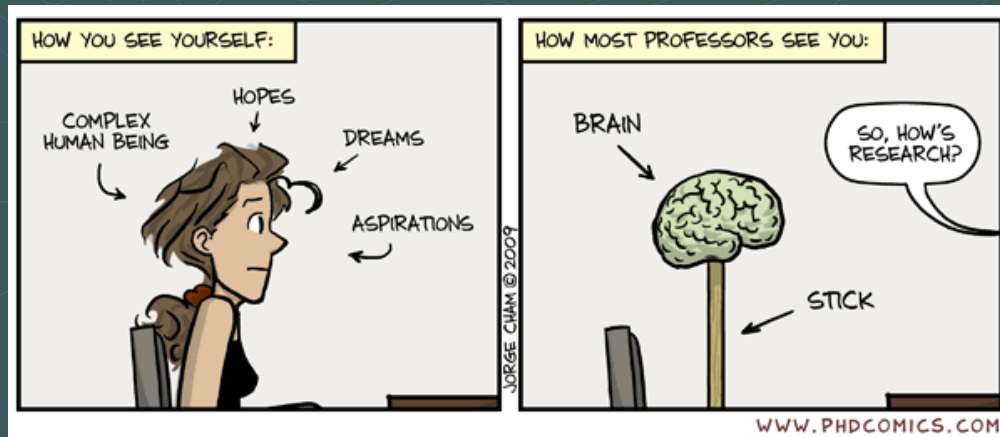
You will deal with different people, responsibilities, and situations every day... and have to adapt your skills accordingly.

The last bullet on this slide is one of the most important points to hit home to aspiring grad students.

Academia is a business with a unique plan of operations. Instead of money in → product out (ball bearings, widgets, whatever),

it goes more like money in → knowledge out. That knowledge takes the form of journal papers, patents, etc.

“Academia is a business...”



(phdcomics.com)

This is a bit extreme, but you WILL feel this way sometimes! Of course, if you feel like this every day, something is probably wrong!

Three habits that I find important

(In no particular order)

Know your surroundings.

Work smartly.

Communicate.

I have skipped “time management” because I find it to be an extremely personal issue. Plus, if you are successful and reach graduate school and beyond, you have probably found a way to manage your time wisely (or have a boss who is willing to [micro-]manage it for you).

Know your surroundings!

- Academia is a business. Where do you fit?

- You are **an employee**; what is your “job description?”
 - Write a thesis (or not)
 - Analyze this data
 - Write this paper, attend that conference
 - TA this course, etc.

- Where to go for help when you’re stuck?

Knowing in advance what is expected of you is critical to success. The more details you have up front, the better your work can be.

Also, know where your resources are: who is your resident dynamicist? Statistician? Programmer? These may be faculty, or

they may be fellow students. Know (a) when you’re in a jam, and (b) who can help you get out of it.

Know your surroundings!

- ▣ What are the “threats” to you being successful?
 - Relationships
 - Long lunches
 - Homework, side projects
 - Office is too hot, cold, crowded, etc.
 - The “politics” of your department

- ▣ University rules, deadlines, a.k.a. the “hoops” to graduation

So many things can derail a grad student at any given time. Just as during your bachelor's degree, there will be a ton of temptations.

Be aware of these and be able to deal with them as they come up. Stay ahead of the game.

Don't miss a deadline that might cost you thousands of dollars in tuition! There's no reason—not even “I was working too hard!”

Work smartly.

- You don't have to be a genius to get a Ph.D. (But it helps.)
- At UAH, I don't have to be at my desk M-F from 8-5.
 - Progress is not measured in hours or days.
 - Instead, ask: "What did I accomplish *this week*? What are my tasks for *this month*?"
 - Are you a morning person? Night owl? Take advantage of your strengths!

Any given day may be an absolute success or an abysmal failure. There may be a side project that needs your attention, or a visitor in town, or a snowstorm on the way, or a landfalling hurricane. You get the idea.

Having productive weeks and months and semesters—meeting your long term, big goals—is huge in academia. To me, this is what counts!

Sometimes I go to work at 8 a.m., sometimes I am at work until 2 a.m. (on different days!). Find and do what feels natural to you and what works best with your team.

Work smartly.

▣ Examples:

- So many of us “reinvent the wheel” when it comes to writing computer code. DON'T!
- “What was I doing when I left work yesterday?” Keep notes, make lists, do something to help yourself organize.

▣ Be flexible!

- If your research goes exactly the way you want it to, you probably did something wrong.

Organizing is a lot like time management—intensely personal. Find a way to make sense of the mess on your desk, however you need to do it.

Almost no research in the world goes right on the first try. But sometimes, being wrong can lead to new discoveries!

Probably not working smartly:



(phdcomics.com)

Mike is not working smartly. (Is his desk organized? Maybe to him!)

Communicate.

- Many different things I could put here!

- Do you ask questions?
 - Of your advisor? At dept. seminars? At conferences?
 - Shows interest; willingness to discover & learn.

- Be a part of your department.
 - Kindergarten report card: “Plays well with others: _____”

Every aspect of communication is important. The way you communicate is how you are known to your peers and faculty. Companies have entire staffs dedicated to “communications,” and you should think about the ways you communicate with people.

Communicate.

- You are becoming part of the greater science community.
 - Suggestion: work in a place where visibility is encouraged.
 - Presentations, papers. ← **Hard currency in academia!!!**
- Talking to people is very difficult for a lot scientists.
 - There is no silver bullet here.
 - The successful ones figure out a way to do it.

Grad school is a great time to practice and hone your communications skills. Academia is built around strong presentations and papers, so if you can develop those skills now, you will be ahead of your competition.

I have no good advice on how to cold start a conversation with someone. I'm not good at it, and when I do it, I'm nervous as heck. But you have to do it. Sometimes email is a good way to start, since it is more impersonal and you can get the words exactly right before you hit 'send.'

Communicate.

"I didn't **SAY** you were stupid."
"I didn't say **YOU** were stupid."
"I didn't say you were **STUPID**."

Be very careful how you communicate!!! Smiley faces are unprofessional and humor and sarcasm are almost impossible to read in emails and letters. Watch out!!!

Take-home message

- Know your surroundings.
 - Work smartly.
 - Communicate.
- You are in control of your career. Don't ever let anyone tell you otherwise.
- A degree is the beginning, not end, of your career. Don't ever let yourself think otherwise.

My seven years in graduate school have been some of the most rewarding years of my life. I didn't really grow up--as a scientist or as a person--until after my BS degree. That doesn't mean I don't have as much fun as I used to, or that I go out any less—I do—but I have learned when to relax and when to get my stuff together.

After finishing course requirements, a friend said to his advisor “I don't have to take any more classes, ever again.” Advisor: “And you haven't learned *anything* yet.”

Thank You!

Average Maximum Annual
Unemployment Benefit

\$21,060

Average Graduate
Student Stipend

\$18,779

Sources: U.S. Department of Labor (via SF Chronicle), The Chronicle of Higher Education 2008-2009 survey of pay and benefits for teaching and research assistants. Unemployment benefits computed from average maximum state weekly benefits (typically 50% of base wages, capped by state) multiplied by 52 (in some cases, benefits can be extended up to 79 weeks). Academic year stipends extrapolated to 12 months.

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