



# Surviving Grad School

– Things they don't teach in class –

Presented by: Livio Soares

Thanks to:

Ioana Burcea, Lesley Shannon, Denis Kouroussis,  
U of T

Ted Wong et. al., CMU



# Coming to Grad School

- You have the ability to graduate
- YOU are responsible for graduating
- You get out of your degree only what you put into it



# Outline

- **Learn to survive and thrive**
  - **You and your advisor**
  - **The first year**
  - **Tips for research**
  
- **Some micro valuable advice**



# You and Your Advisor

- **Advisor is your : mentor, manager and advocate**
  
- **Building your advisor relationship**
  - **Meet regularly with them**
  - **Communicate openly with them**
  - **Accommodate their needs**
  - **Make your needs clear**
  
- **Changing advisors**
  - **When: early (!) or between MASc and PhD**



# The First Year of Master's Grad

- **First year is mostly about the courses**
  - **Good grades are important**
  - **Research is also important (especially 2<sup>nd</sup> semester)**
- **Things to do:**
  - **Attend the Distinguished Lecture Series**
  - **Attend your Ethics and Research Seminar**

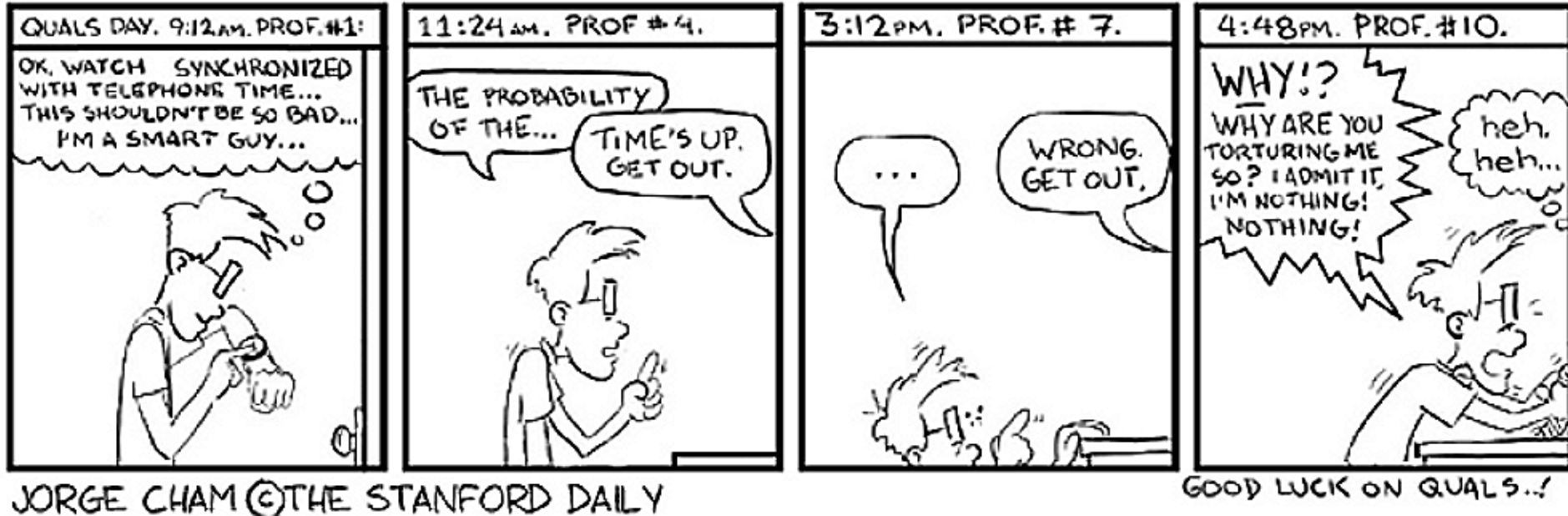


# The First Year of PhD Grad

- **First year is NOT all about the courses**
  - **Good grades are important**
  - **Qualifying exams are important (2<sup>nd</sup> semester)**
  - **Research is also important (especially 2<sup>nd</sup> semester)**
- **Things to do:**
  - **Attend the Distinguished Lecture Series**
  - **Attend your Ethics and Research Seminar**



# PhD Qualifying Exams



- It's not *that* bad.
- Two single hour interviews each with two professors
- Questions about MASc research and ???



# Why Research Could Be Difficult

- **First major research experience**
- **No simple recipe**





# Becoming Self-Directed

- **Before:**
  - External deadlines
  - Self-contained problems
  
- **Now:**
  - Internal deadlines
  - Open-ended problems



# Stages of Research

- **Becoming a researcher in the area**
  - Do your background reading
  - Get into the research community
  - Talk to your colleagues
    - ◆ Connections 2011
    - ◆ Systems research presentation
    - ◆ Reading groups (CARG, SSRG, ... )
  
- **Thesis Proposal**
  
- **Producing Results**
  - Yes, this does include publications



# Stages of Research (cont'd)

## ■ Writing

- Sell your research
- Get it previewed, don't save it to the end

## ■ Presenting

- Practice, practice, practice



# Goals of Research

- **Be clear about your goals**
  
- **Possible Goals:**
  - **Finish MASC, get a development job**
  - **Do a PhD, then go to a**
    - ◆ **Development job**
    - ◆ **R&D Lab**
    - ◆ **Teaching Staff**
    - ◆ **Faculty Member**
  
- **Each goal requires a different approach to your degree**



## Goals of Research (cont'd)

- **Talk about these plans with your supervisor**
- **You CAN change your mind, but be prepared to change your tactics and do more work**
- **Remember you get out only what you put in**
- **No matter what you want to do: NETWORK!**



# FUD: Fear, Uncertainty and Doubt

- **“I don’t belong here.” : Imposter Syndrome**
- **“I’m the only person having a hard time.”**
- **“I’m struggling in / failing a class.”**



# Beating FUD

- **Talk to students**
  
- **Talk to your advisor**
  
- **Talk, talk, talk**
  - **Grad coordinator (David Lie)**
  - **Grad Office (Darlene Gorzo, Willy Wong)**
  - **University Student Services**



# Distractions (the GOOD and the BAD)

## ■ The Bad: Moderation required

- Supremely beautiful code (aka “Hacking is not research”)
- Surfing the web
- Video games
- Side projects

## ■ The Good:

- Help out fellow students
- Be involved in group social events
- Stay active... play ball
- Interact with NON-Technical People
- Piled Higher and Deeper ([www.phdcomics.com](http://www.phdcomics.com))





# Micro Advice

- **A) Never surprise or be surprised by your advisor**  
**B) Never surprise the Grad Office**
- **Once an advisor, always an advisor**
- **Talk with other students and faculty to get an outside perspective on your research**



## Micro Advice

- **If you want to work, then WORK,  
If you want to play, then PLAY**
- **Make the first hour of your day a working hour**
- **Keep outside interests and activities**



# Micro Advice

**Your thesis has less to do with  
your career than you think**

**What you can say about your thesis  
has more to do with your career than you think**



# Micro Advice

**Be honest to yourself about  
your abilities and limits**

**Be willing to ask for help from  
fellow students and faculty**



# Tons of online resources

- **Blogs of experienced faculty:**
  - **Matt Might (Utah) – [matt.might.net/articles](http://matt.might.net/articles)**
  - **Matt Welsh (Harvard) – [matt-welsh.blogspot.com](http://matt-welsh.blogspot.com)**
  - **Dave Andersen (CMU) – [dga.livejournal.com](http://dga.livejournal.com)**
  
- **“How-to” advice (millions of hits on Google)**
  - **Write papers**
  - **Give talks**
  - **Find research topics**
  - **Attend conferences**



LASTLY

**HAVE FUN!**



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# The Research

## ■ Usually...

- **M.A.Sc. : Project that your advisor KNOWS will work**
  - ◆ Proposal (end of 1<sup>st</sup> year )
  - ◆ Defense (end of 2<sup>nd</sup> year)
- **Ph.D. : Project that your advisor THINKS will work (aka “New Work”).**
  - ◆ Qualification exam (in your 1<sup>st</sup> year around Feb.)
  - ◆ Proposal (in your 2<sup>nd</sup> year around Oct.)
  - ◆ Reviews ( end of 3<sup>rd</sup> and possibly 4<sup>th</sup> year)
  - ◆ Defense (internal & external)





# Changing Thesis Topics (the dark side)

- **When to do it:**
  - **Early, Early, Early!**
    - ◆ **MASc: By end of courses/first summer**
    - ◆ **PhD: By end of first year/fall of second year**
  
- **Why do it:**
  - **Found the “Holy Grail” and can complete it quickly**
  - **Cannot be completed in a reasonable time frame**
  - **No interesting new work (PhD = New Work)**
  - **Loathe and Despise the topic\*\***
  
- **TALK TO YOUR SUPERVISOR FIRST!**



# PhD Qualifying Exams



JORGE CHAM ©THE STANFORD DAILY

- The professors do *not* do this.
- You will not be able to answer all their questions.
- The key is your methodology for trying.
- You only need 3 out of 4 to pass you.