



# **How to be a Successful Graduate Student**

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## **Some materials of the presentation come from:**

- 1. THE UNIVERSITY OF BRITISH COLUMBIA “On Being a Successful Graduate Student”**
- 2. North Carolina State University “Graduate Student Survival/Success Guide”**
- 3. Virginia Tech “How to be a Successful Graduate Student”**



## *Why Do Research?*

- Learn a set of work skills that you can't get from classes
  - Significant writing task
  - Independent unstructured work task
  - Do something real
- Become a true expert in something

It's the only way to get a PhD

- Master a specific subject completely
  - Extend the body of knowledge about that subject
- A key concern with doing a research degree:

When will it end?



# *Graduate School:* **Not just more years of college!**

## The Undergraduate

- Student
- Breadth over depth
- Recipient of knowledge
- Externally directed

## The Graduate

- From apprentice to expert
- Depth over breadth
- Analyzer and creator of knowledge
- Self-directed



## *What is the Purpose of Graduate Study?*

**The primary purposes of research-oriented, thesis-based Master's programs (*e.g.*, MA & MSc) are:**

- To understand thoroughly and think critically about what is known in a particular academic field
- To learn how to conduct research in that field (and perhaps prepare for PhD study)
- To begin affiliating with the academic community of the field



## *What is the Purpose of Graduate Study?*

**The primary purposes of professional Masters programs (e.g., MEd, MArch, MEng, MPT, MLIS) are:**

- To understand thoroughly and think critically about what is known in a particular professional field
- To master skills (including research / experimentation) that are necessary for advanced practice in a particular professional field
- To enhance affiliation with the professional community of the field



## *What is the Purpose of Graduate Study?*

**The primary purposes of Doctoral study (e.g., PhD) are:**

- To master the knowledge of a specific academic field – and become prepared to teach that knowledge at the university level
- To make an original contribution, through research, to the knowledge within a specific field (i.e. “create new knowledge”)
- To establish oneself as an expert and leader within the academic community of the field



## Graduate Research

- Steps to a degree:
  - Take a bunch of classes
  - Find an advisor
  - Pick a topic
  - Do the work
  - Write it up

What do you think?





## *Graduate Research: How to be Successful*

- Initially:
  - Don't just take classes { interact with faculty and their students)
  - Attend talks, read papers
- Get PhD qualifier (or equivalent) out of the way early.
- Identify an advisor early, and get involved in research
- Set deadlines or milestones... And keep them!
- Mix writing with working
  - Documenting literature review is an ongoing process
  - Constantly write progress reports
  - Publish if possible
  
- Learn how to write!



## Picking An Advisor

- How not to be successful:
  - Pick an advisor on one criteria, such as support, research area, or personality
- How to be successful: Pick the best compromise (for YOU!) of the following indicators.
  - Research area
  - Support opportunity
  - Physical environment for getting work done
  - Intellectual environment for getting work done
  - Peer support system (research group)
  - Personality: Interaction at a personal level
  - Personality: Management style (hands on vs. hands off)
  - Level of attention
  - Track record on timely graduation
  - Professional advancement



## *Your Research Topic and your Future Career*

- The role of research topic in deciding your future career
  - Master Thesis: Minimal
  - PhD: As much or as little you want
- Choosing a research topic
  - Of interest to you, your advisor and the research community
  - A “real problem” and not a “toy problem”
  - Right problem size?



## *What Advisor to Look For*

- Someone with similar/compatible interests as yours
- Renowned researchers
  - “They will document their work in articles, published in respected journals[/conferences]”
  - “Grant support from major research foundations”
  - Con: “limited in the amount of attention they can devote to you”
- Beginning researchers
  - “In the absence of substantial grant funding or a lengthy publication list, look for someone who has an active and growing research program.”



## ***What Advisor to Look For (cont.)***

- Someone you can respect
  - “Choosing or keeping an advisor primarily because he or she is nice is a mistake. Sometimes nice people withhold frank evaluations of your knowledge, skills, and progress to avoid hurting your feelings. If you have an excellent advisor, your feelings toward your advisor might best be labeled as respect”



## *Pitfalls(?)*

- I have TA supports for 1/2/3 years now, why bother finding an advisor now?
- For now, since I have 1/2/3 year TA support, I want to work with a professor who is nice to me and doesn't push me to get research results or doesn't care much whether I get research results

# Act NOW

## *Pitfall(?): Too Busy With Courses; No Time for Research Now*

### **Grades Don't Matter, Sources Say**

Palo Alto, CA (AP) - Documents obtained by the Associated Press indicate that grades achieved in post-graduate classes have no effect on future prospects for students enrolled in academic institutions.

According to interviews with several current and past graduate students, "grades don't count," said former grad student and now billionaire Jerry Yang, co-founder of Yahoo! Inc. "I got mostly B's in grad school, which at Stanford was really really bad."

A poll conducted by the Los Angeles Times showed that over 85% of first year grads believe getting high marks "is worth the effort" and "a valuable way to spend my time". Fewer than 10% of fifth year students felt the same way.

In reality, neither employers nor your parents appear to care if you get an A or a B in your advanced Nonlinear Optimization class. "I'm just glad I don't have to pay for tuition any more," said a mother who wished to remain anonymous.

Reaction among graduate TA's was mixed, with some expressing shock that their late hours grading amount to nothing, while others showed visible relief that losing a student's final exam will not really ruin their life.

Sources close to academic faculty reveal that this fact is well known among professors. "Of course grades don't matter," said Prof. Smith, "we only care about the lab work." Grades only serve to "feed the ego of the smart students, and break the spirit of the mediocre ones."



**NOW you tell me??** A grad student expresses frustration over the revelation

*Continued on page A23*

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*'Grades don't matter'*

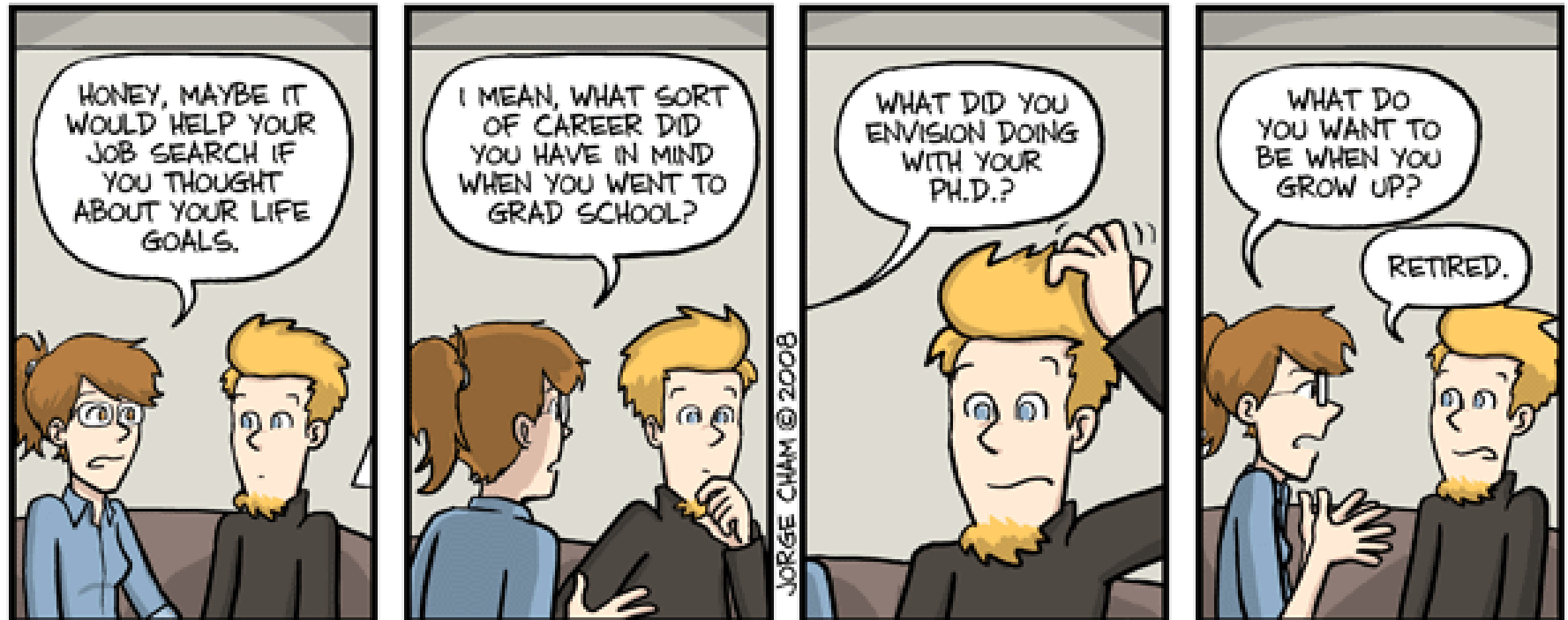
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## What Advisor Looks For

- Right/good motivation

w.r.t. agree to advise or RA support

– Not just “I need to graduate within 3 years from now”



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*'What do you want to be?'*

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## *What Advisor Looks For*

w.r.t. agree to advise or RA support

- Right/good motivation
  - Not just “I need to graduate within 3 years from now”
- Good specific important skills (for the research)
  - Problem-solving/research-development skills
  - Programming skills (for tool-building/system research)
  - Mathematical/theoretical skills (for theory research)
  - ...

## What Advisor Looks For (cont.)

- Willing to work hard



*'Why are we doing this?'*

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## What Advisor Looks For (cont.)

- Follow research guidance (not in a blindly sense)

### THE EVOLUTION OF THE "YES"



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*'The evolution of Yes'*

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## *Working with An Advisor*

- The most important thing is frequent interaction
  - Meet often and document your progress (in writing)
  - Have short and long-term milestones
- What an advisor can do for you?!
  - Mentor, including advice and direction on your work
  - Source of technical assistance
  - Get the best out of you
  - Helps you find resources
  - Gives you credit for the work you do/defends your work
  - Acts as a shield between you and the department!
  - Career advice



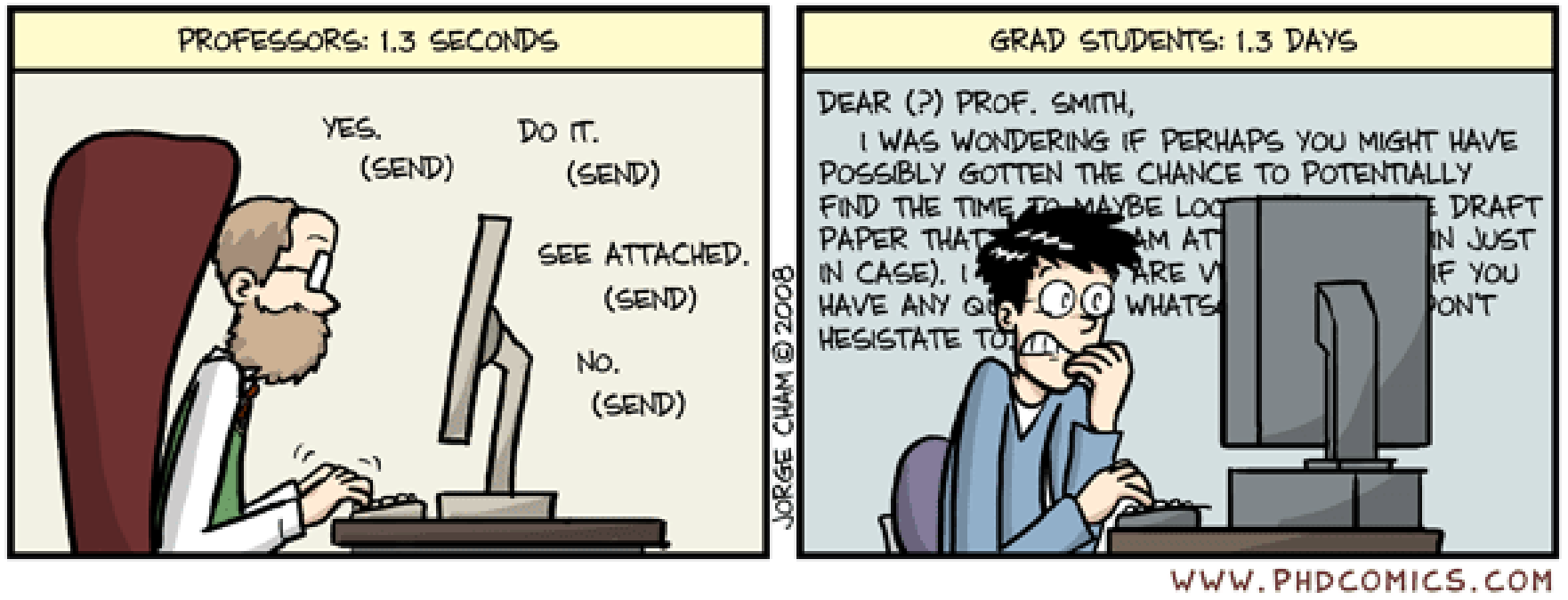
## *But How?*

An important factor is know how to **work**  
with your advisor

And first you need to know your advisor

# Advisor has MUCH more Tasks to do (and is Efficient in Tasks)

## AVERAGE TIME SPENT COMPOSING ONE E-MAIL



*'Average time spent writing one e-mail'*

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***Appreciate the time that advisor allocates for you***

Be prepared before meeting advisor

But be proactive in requesting advisor's time  
allocated for you

## *AND be Responsive to Advisor's Email*



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*'Did you get it?'*

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## Advisor Can be Hands-Off



*'An impending sense of doom'*

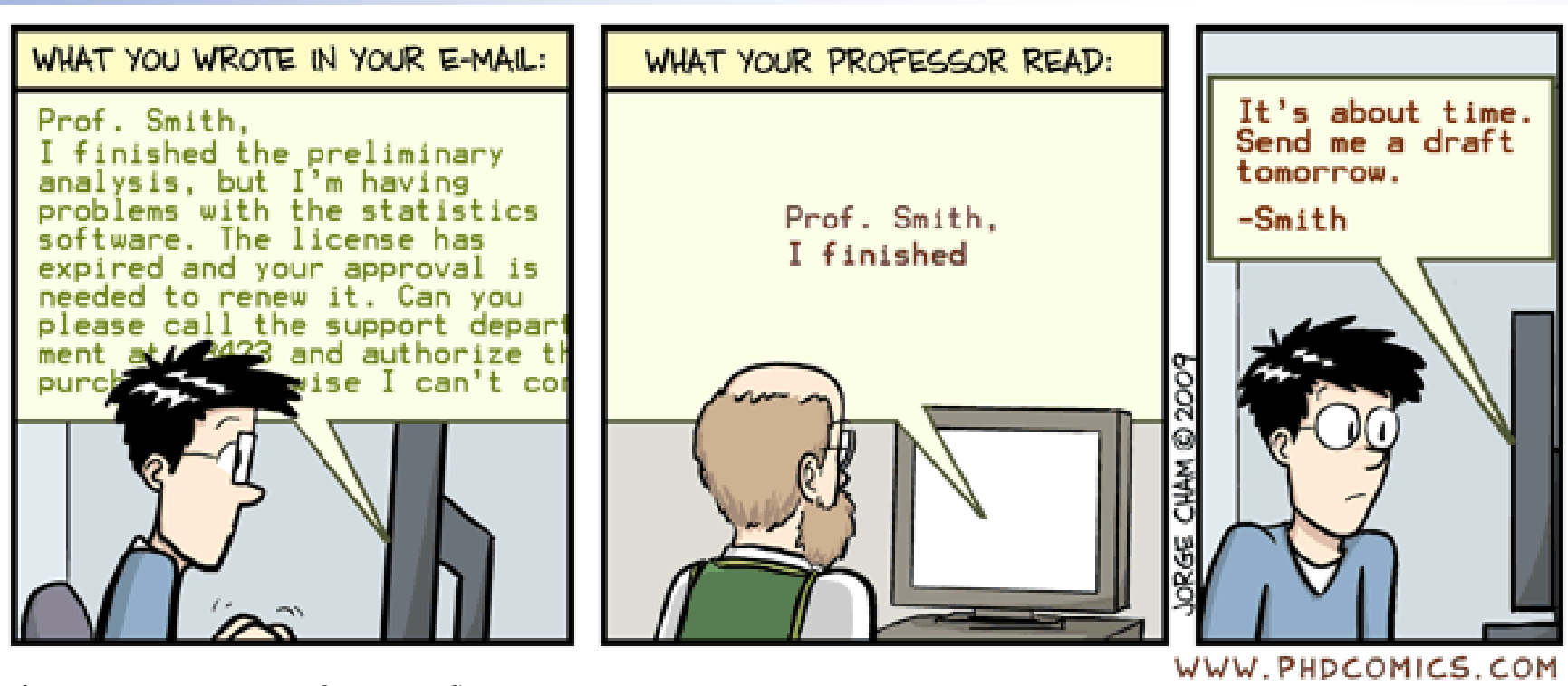
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***Find the RIGHT level of abstractions to convey your work details to advisor***

- If advisor doesn't know what is going on, YOU suffer in the end
- Not necessarily the lower level of details, the better
  - Remember advisor is busy; likely no time to understand the messy details
- Solution 1: acceptance tests in contrast to walking advisor through your tool code base

## *Solution 2: Send Formal Writing (in Paper Draft) to Your Advisor*



*'What your Prof. read'*

Don't rely (only) on informal writing or oral conversion! Often the time, students are not good oral communicators

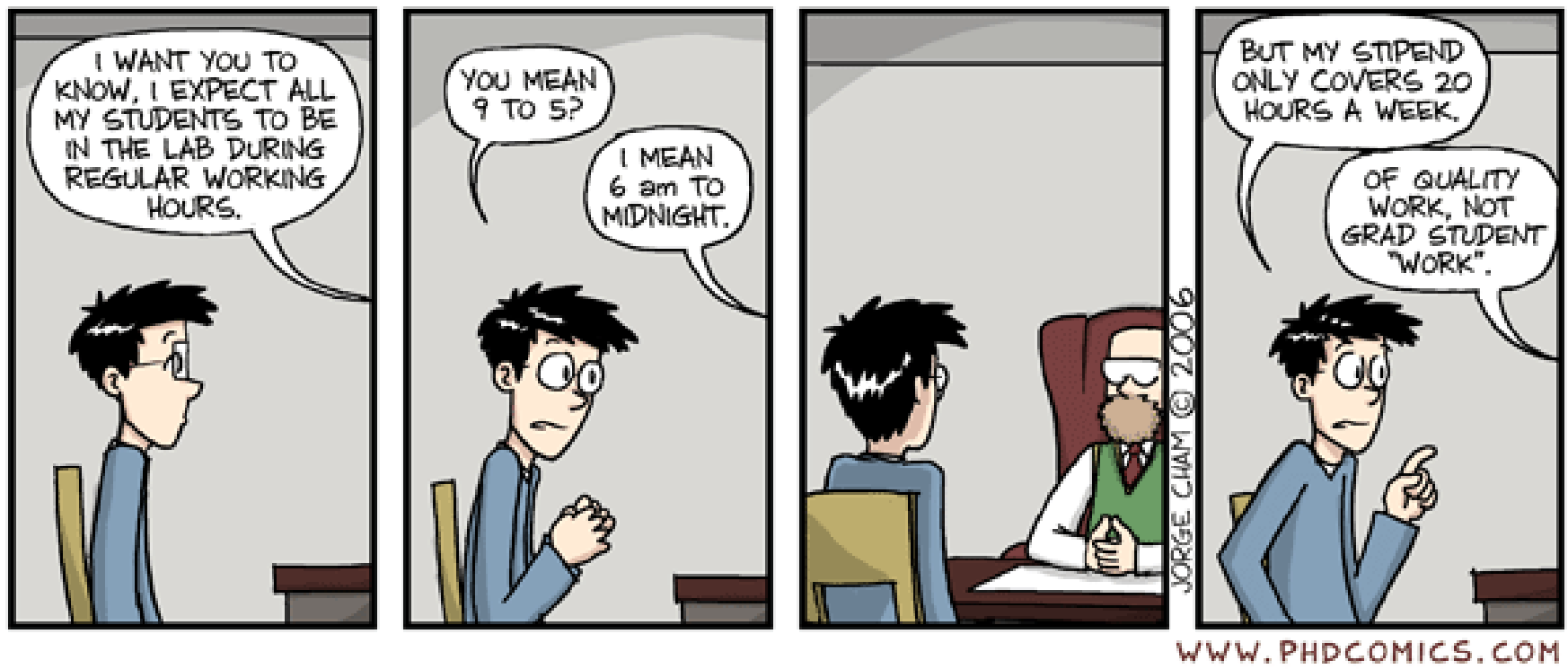
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Keep in mind that **Miscommunication**  
between advisor and student may be the  
most common factor for causing damage  
to research development

*Of course you need to know  
what your advisor may likely do to you ... 😊*

## *Advisor can be Pushy on Working Time*

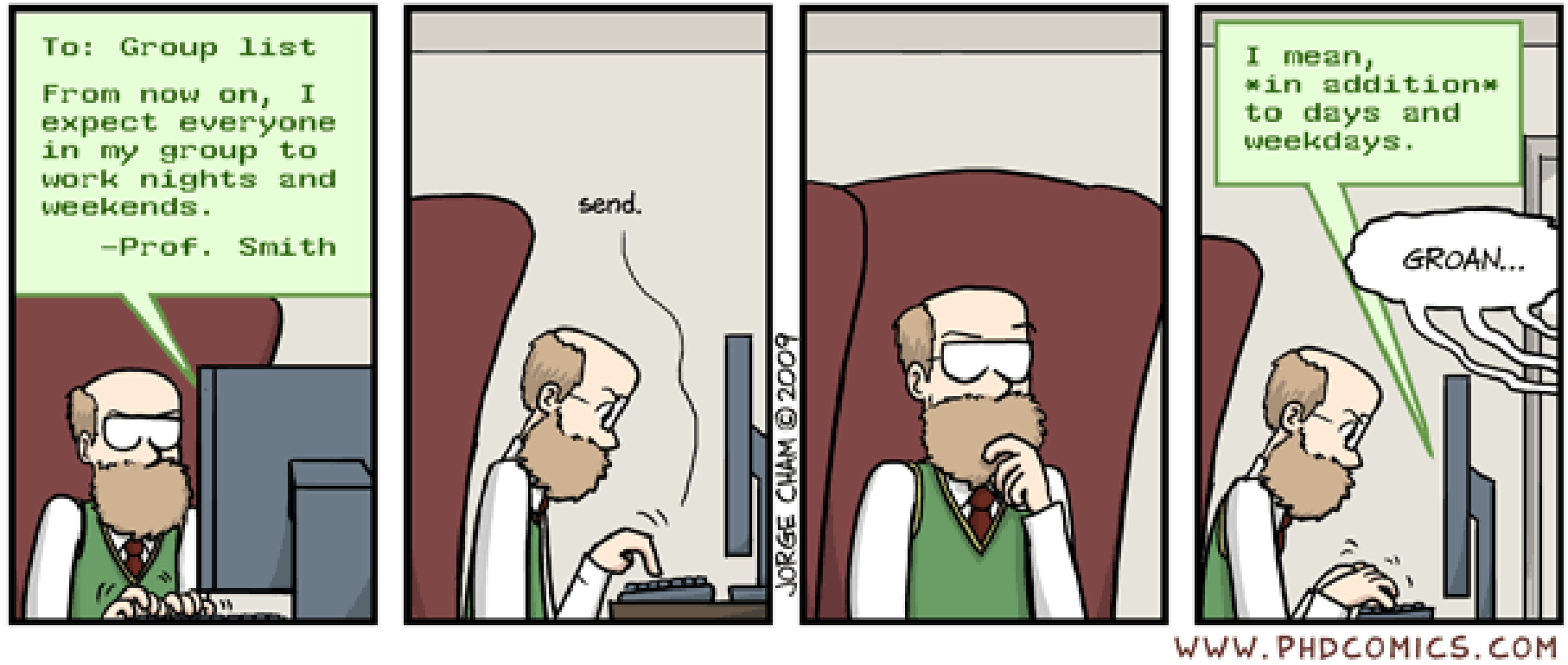


### *'Regular Working Hours'*

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## Advisor can be Pushy on Working Time –cont.

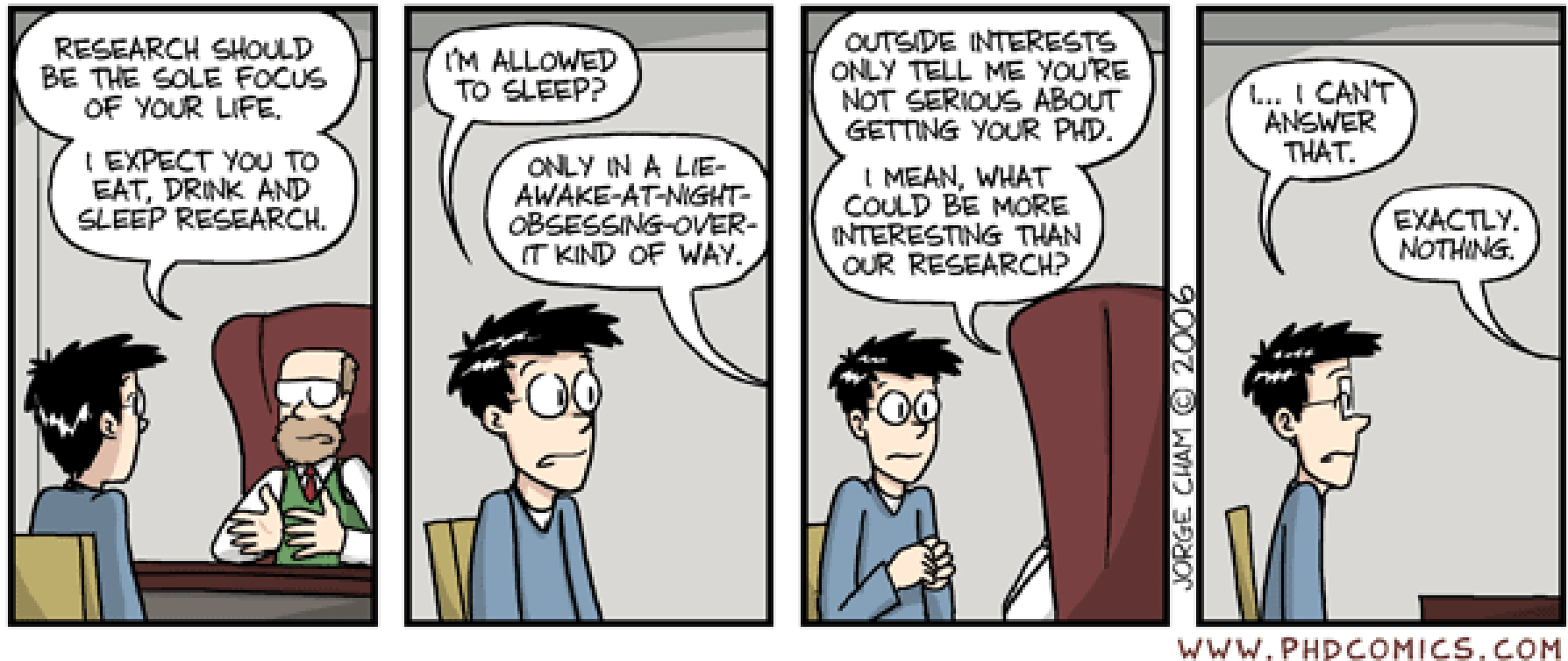


*'Nights and weekends'*

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## Advisor can be Pushy on Your Passion to Research



*'Outside interests'*

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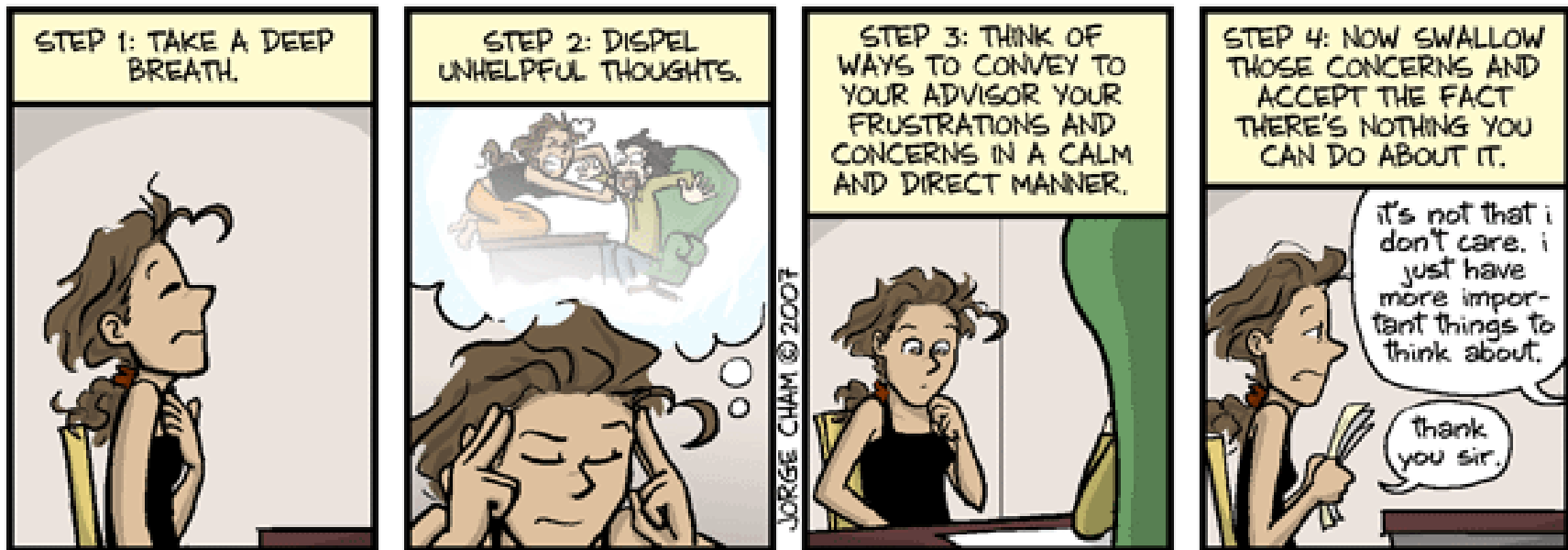
***But More Often Advisor Looks For Concrete Deliverables (Results/Artifacts)***

- papers
- tools
- experimental results
- new ideas
- ...



# Bottom Line is not Cause Advisor "Don't Care"

## HOW TO DEAL WITH FRUSTRATING FACULTY EXASPERATED BY A PERCEIVED LACK OF INTEREST AND SUPPORT? A STEP-BY-STEP GUIDE:



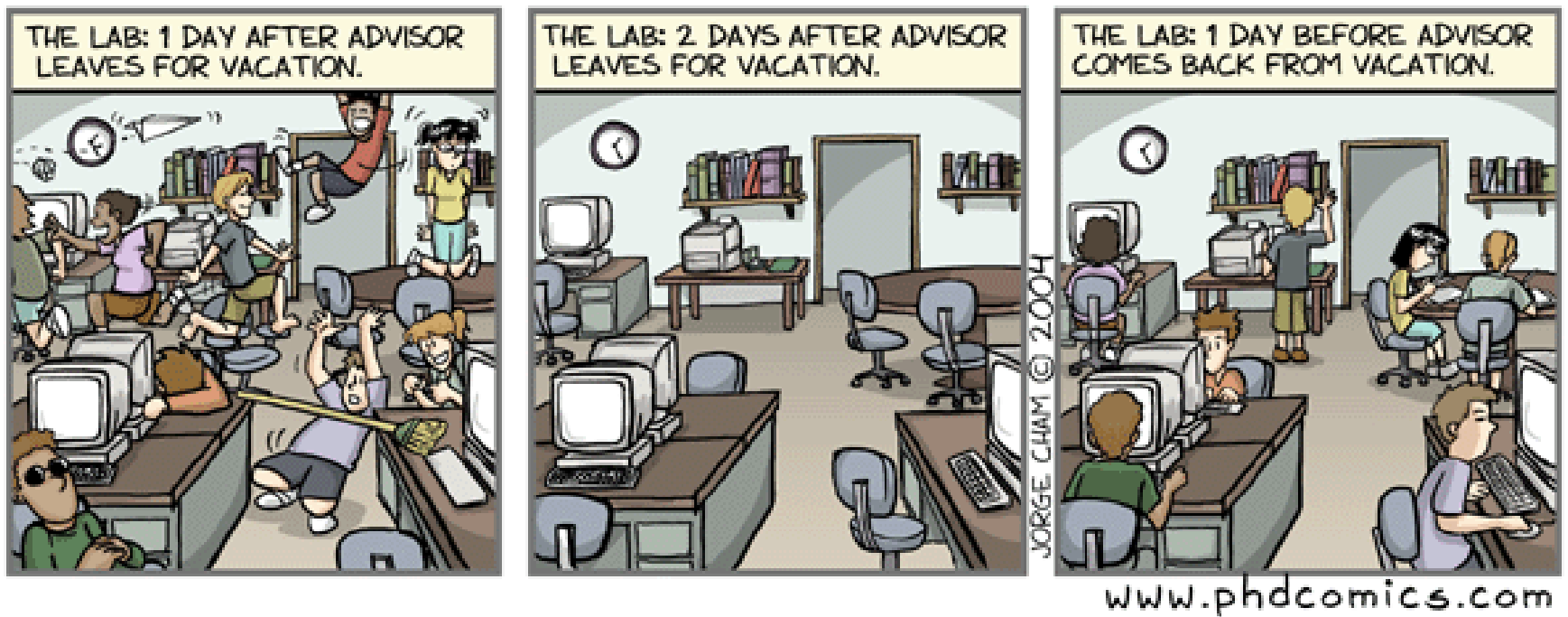
'Some helpful advice'

Bad sign: advisor doesn't push you or care even when you don't deliver → likely soon advisor won't work with you

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# Driving Force should Come from You, Not (Just) Advisor

## SUMMER DAYS...



'Summer days...'

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## Make Sure You Make Progress



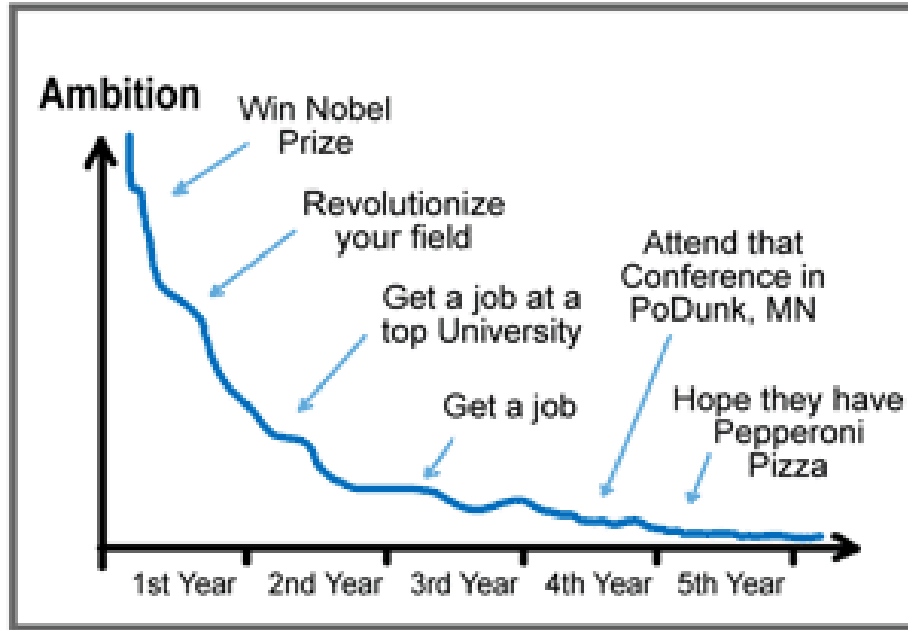
JORGE CHAM ©THE STANFORD DAILY

*'Grad student etiquette'*

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# *(Don't) Feel Going Down Over Years*

## YOUR LIFE AMBITION - What Happened??



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### *'Your Life Ambition'*

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# Not Spend Your Day Like



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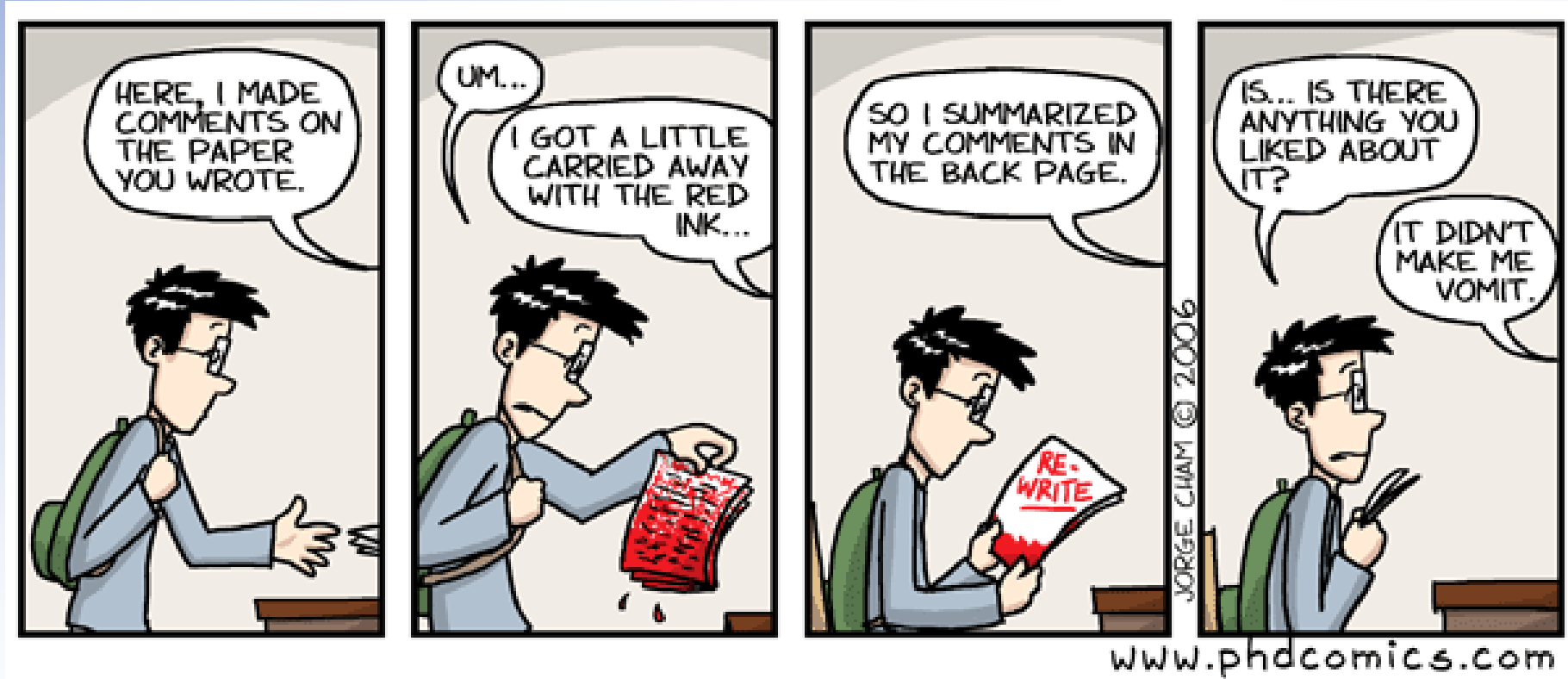
'Why? Why??'



## *Writing, Writing, Writing*

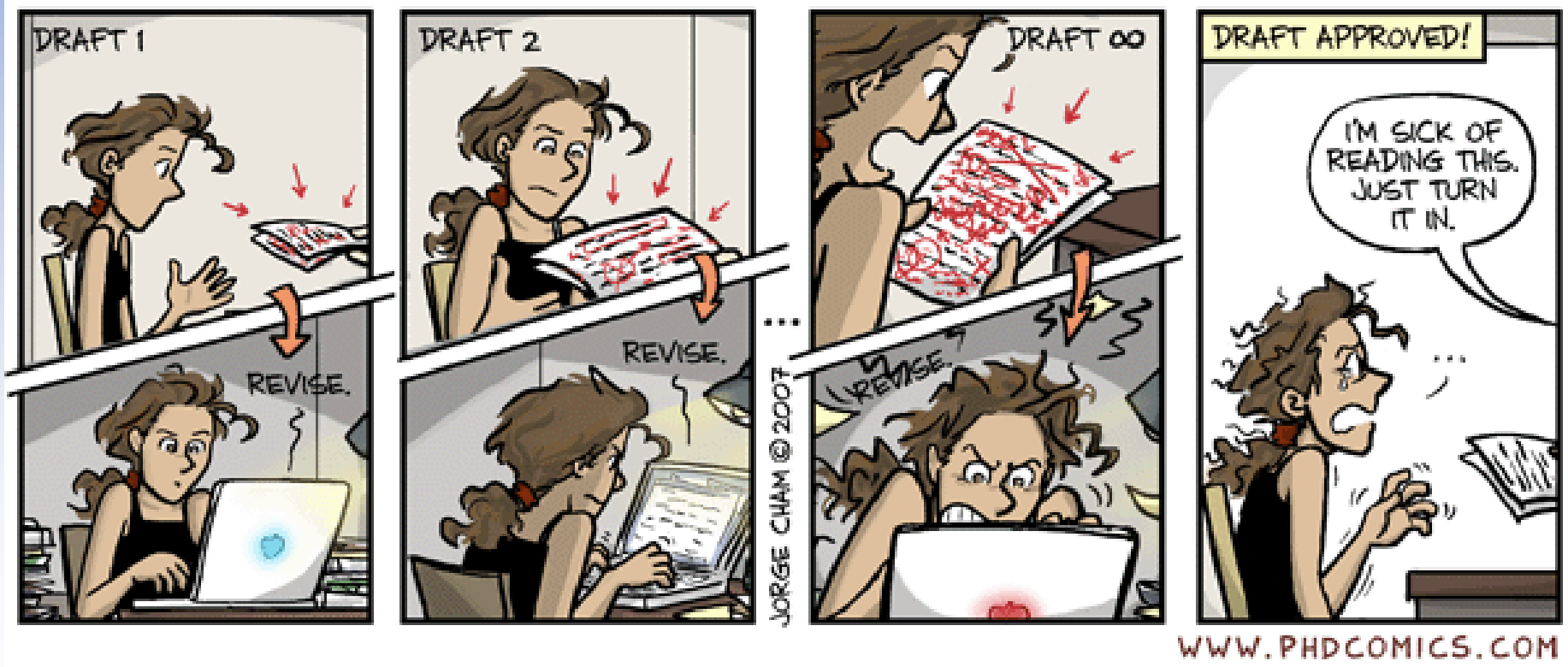
- Many students (esp. international students) have poor writing skills
  - Pitfall: rely on advisor to write or rewrite, not learning how to write better

# Writing Skills are Important to Your Career Goals



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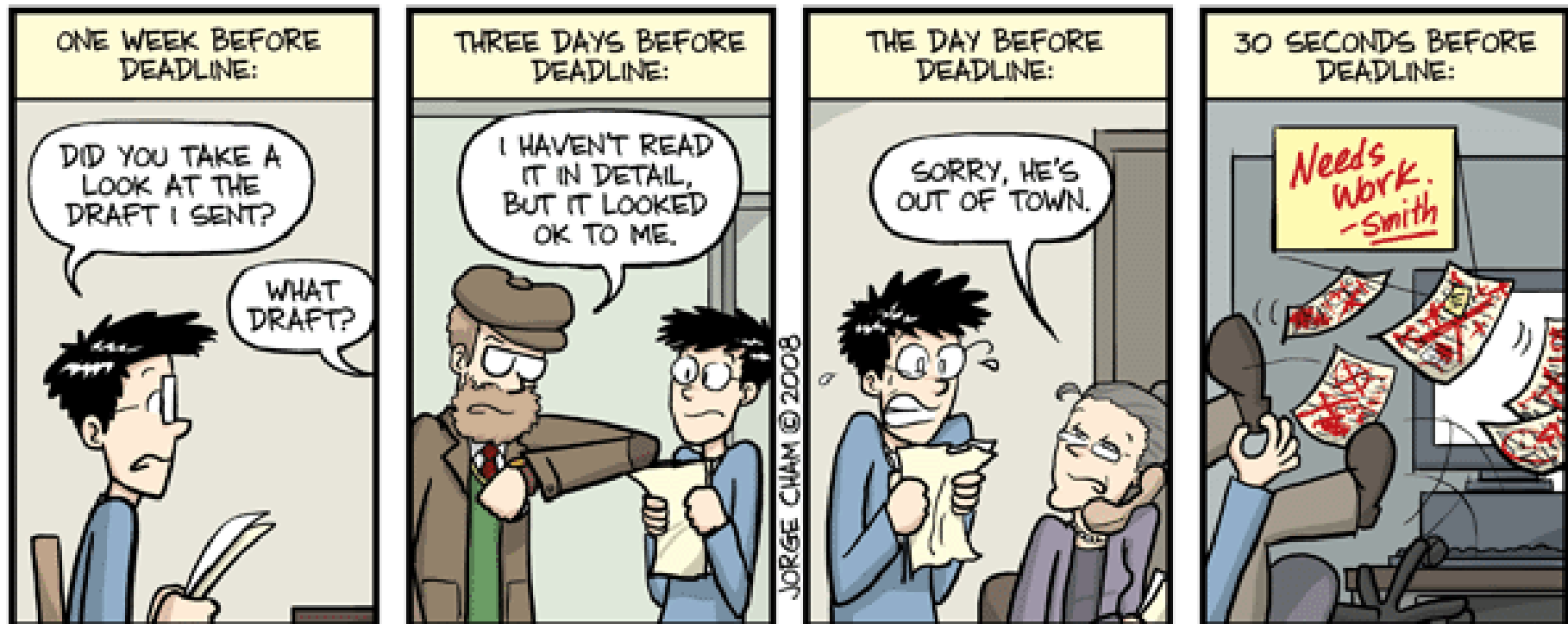
# If You are Lucky, when Preparing Your Submission (write early!) ...



*'Draft approved!'*



*If not Lucky, (Don't Expect Your Advisor's Only Task is Just Working with You) ...*



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*'Needs work'*

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# After ALL, Most Importantly Keep Good Physical and Mental Health



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'Sleep'

<http://www.phdcomics.com/comics/archive/phd100308s.gif>



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**Student Health Services**  
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**Counseling Center**  
Counseling for personal, academic, and vocational concerns.



## *Getting the Most of What you Read*

### *Graduate School Survival Guide*

- Organization (digital bibliography with pointers to papers)
- Efficiency (Read what you need to)
- Take notes on every paper
  - Problem, approach and related approaches
- Summarize what you have read on each topic
- Read PhD Theses



## *Research Experience and Your Goals*

- As a part of the degree process
  - Make sure your writing improves
  - Make sure you learn how to schedule and pace
  - Make sure you get experience at independent/unstructured problem solving
  - Publish, become known.
  - Become an expert in something you own



# Keys to Success in Graduate School

## What kinds of challenges might graduate students encounter?

- 對研究生的期望不同
- 缺乏研究方向（例如，無法完成論文）
- 感覺孤立或不受支持
- 與指導教授或其他同儕的互動困難
- 關於能否成功通過的焦慮
- 生活經濟或財務困難
- 未預期的個人問題或與學術倫理的衝突



# 7 Keys to Success in Graduate School

## 1. Be proactive – take responsibility for your own grad school experience

- 思考你從研究所真正想要得到的，並確定實現這些目標的機會
- 努力調整心態，必須從被告知做什麼，轉變成思考決定做什麼
- 不要等到指導教授來找到你 – 主動建立關係



# 7 Keys to Success in Graduate School

## 2. Establish positive relationships with your supervisor and members of your committee

- 每年至少一次與整個指導委員會安排定期會議
- 每次會議要有明確的目標，提前向您的指導教授/委員會報告討論的議程
- 會議上討論的議題要有後續做法 - 隨時向你的指導教授報告你的進展和挑戰
- 扮演好一個“年輕同事”的角色，努力發問，推進想法，對於共同目標表現出高度興趣與支持



# 7 Keys to Success in Graduate School

## 3. Embrace your academic community

- 尋求和教職員工以及你的同儕之間的合作互動- 不要孤立自己
- 參加所內或所外可選的研討會和講座
- 出席研討會並在會議上報告
- 開始思考自己成為研究專業和學術領域的學會成員





# 7 Keys to Success in Graduate School

## 4. Know your program requirements and timelines: Masters students

- 你的學程可能需要以下任何或全部：
  - 課程規定
  - 研究規劃或資格考試
  - 研究論文或主修專題
  - 論文或專題的公開演示和/或答辯
- 研究所碩士修業規定：
  - 碩士生必須在有註冊的4年之內，完成所有學位要求



# 7 Keys to Success in Graduate School

## 4. Know your program requirements and timelines: Doctoral students

- 你的學程需要你完成的修課規定
- 博士課程會需要你完成：
  - 提出論文研究計畫書並獲得批准
  - 通過綜合資格考試
  - 完成的研究論文
  - 博士學位論文口試與答辯
- 研究所碩士修業規定：
  - 可在2年，最多3年以內必須取得博士候選人資格
  - 可在2年，最多7年以內完成所有博士修業規定

“博士候選人  
資格”



# 7 Keys to Success in Graduate School

## 5. Create and follow an annual plan

- 具體檢查你的學程要求（例如，課程，綜合的研究，論文等）
- 安排與你的指導教授/委員會的會議
- 文章發表和專利申請，版權，藝術作品，表演，設計等
- 參加會議並在會議上報告
- 申請獎學金，助學金和研究補助金
- 取得專業發展課程



# 7 Keys to Success in Graduate School

## 6. Bring a professional approach to your studies and interactions

- 關鍵方法：組織，準備，合議，預算編制
- 經由研究所內的研究規劃委員會與教學輔導委員會會議討論通過
- 了解科研道德 (research ethics) 和學術誠信 (scholarly integrity)





# 7 Keys to Success in Graduate School

>>> Research ethics and scholarly integrity

**All researchers are required to:**

- 對於那些在你的研究論文有貢獻的人給予適當的認定，不要將他人的學術研究當成自己的成果（這是抄襲）
- 與人類，動物，生物危險品，放射性同位素和環境有關的工作須要符合要求（需要環安委員會研究批准）
- 獲取、記錄和分析數據，以及在報告結果時，必須要有學術和科學的嚴謹性，



# 7 Keys to Success in Graduate School

## 7. Seek balance and support in your life








- 請記住，你還有研究所以外的朋友和家人
- 尋求在學校的眾多資源，可以幫助你度過艱難時期
- 請記住，這將是最令人振奮和滿意的時候，在你的生活中
- 而且，因為你的家人不是在這裡，要自己“獲得足夠的睡眠，鍛煉體育的時間，吃足夠的蔬菜！”

*在你之前的研究人員，已經認知「重要的分析，創新和有效率的努力」，是與「充足的睡眠，運動和健康飲食」息息相關*



# Summary:

## *Your 7 Keys to Success in Graduate School*

1.  Be proactive – take responsibility for your own grad school experience
2.  Establish a positive relationship with your advisor/supervisor and the members of your supervisory committee
3.  Embrace your academic community
4.  Know your program requirements and timelines
5.  Create and follow an annual plan
6.  Bring a professional approach to your work and interactions
7.  Seek balance and support in your life



IF we had no winter, the spring would not be so pleasant; if we did not sometimes taste of adversity, prosperity would not be so welcome.

Anne Bradstreet

*Thank you for attention*