

**SURVIVING GRADUATE SCHOOL**  
*And Possibly Even Getting Your Degree*

*By Mattie Nicholas, S.o.G.S. (Survivor of Graduate School), M.D., Ph.D.*  
*with*  
*The Entire MD/PhD Graduating Class of 2009*

## ***Foreword***

First of all, a word as to what I wish to accomplish. If you are reading this, I figure you are 1) considering graduate school; 2) in graduate school; 3) know someone struggling through graduate school; or 4) incredibly bored. Hopefully I will address things which will be helpful, or at least amusing, for all of you. That is my main goal. My secondary goal is to have a hobby which prevents me from having fantasies of slipping into a coma—not a *serious* coma, mind you, but one like in the soap operas, where you wake up feeling refreshed and with no loss of mental or physical function—while I finish up my own graduate degree. I think it gives me a sense of accomplishment, passing on what I have learned; a sense of accomplishment that is simply unattainable by writing or defending my dissertation. This may sound strange, but I think you'll see what I mean. Some of these lessons may be useful in the non-graduate school “real world”. However I have completely lost touch with the real world and therefore I can't say for sure.

When I started Graduate School—what seems like a kazillion years ago—I had no idea what was in store for me. I had done quite a bit of scientific research and felt I was pretty good at it; I had learned the ups and downs and ins and outs in the way that you can only learn by being in a lab for years. This worked for me and against me, as I will detail later if I remember to.

Herein you will find tips, tricks, and warnings which are based upon my experiences and the experiences of other grad students which we pass on with the sincere wish that no one have to suffer the various painful fates we have. Good luck, God speed, and watch out for the numerous spike-lined pits which are strewn randomly throughout graduate school.

## TABLE OF CONTENTS

<i>Introduction</i> .....	4
Grad vs. Med: The Smackdown.....	4
I: Preparing to Survive .....	7
A. Picking your department .....	7
B. Picking the right rotations .....	7
C: Picking the right PI/Lab .....	8
II: Staying Alive.....	10
A. Be the Captain of your own ship.....	10
B. Choose the right projects.....	11
*Potential Chump Situation Alert #1: Becoming involved in a poorly thought out side project which has little or no chance of resulting in meaningful progress for you.....	12
C. Learn to say NO .....	12
*Potential Chump Situation Alert #2: Not saying no to things you should say no to .....	13
D. Committee members: pick helpers, not hammers .....	14
*Potential Chump Situation Alert #3: Letting a committee member be forced on you who has a reputation for making people cry or, much worse, spend forever getting a Ph.D. ....	15
E. “Constant dripping hollows out a stone”: keeping forward momentum .....	15
F. Mind the minutia.....	16
*Potential Chump Situation Alert #4: You think you are about to graduate but suddenly find there is some random strange requirement you did not manage to meet.....	17
G. Know when to ask for help .....	17
H. Switching labs: Know when to walk away, and know when to run .....	18
III: Getting Out Before You Shuffle Off This Mortal Coil .....	20
A. Committee meetings: help them help you.....	20
B. From piles to publications .....	21
C. The horror, the horror (getting scooped).....	23
D. Dissertation dementia.....	23
E. Dodge the ultimate bullet: Get back to 3 <sup>rd</sup> year med school on time .....	24
*Potential Chump Situation Alert #5: You let someone (PI, committee, yourself) talk/bully you into going back to 3 <sup>rd</sup> year late.....	24
IV: Don’t Have an MI; it’s Only 3 <sup>rd</sup> Year Med School .....	26

## *Introduction*

### **Grad vs. Med: The Smackdown**

*And you thought the first two years of medical school were hard!!*

One of the most difficult things about the MD/PhD training program is that every time you start to get really good at something, you have to switch to something totally different. It's not that there is never any overlap, but you are usually a stone's throw away from square one, if not smack in the middle of it. Also, if you were starting to gain any kind of clout, you slide immediately back to whipping boy/girl.

The first is when you start medical school. Almost all medical students are starting something totally new, in a new language. It isn't until you take Step 1 of the Board Examination at the end of second year medical school that you begin to feel like you know *something*—however meager—about medicine. It took two years of hard work, but you know something. At this point most medical students proceed on to third year, which in a lot of ways is a step down again, since it is very clinical and different from the classroom learning of years one and two. Also, although it is building on the foundation laid during the first two years, there is an enormous amount of new material to learn. This is also prime whipping boy/girl time, as you are close to the lowest man on the totem pole in the hospital (although never forget that interns, and most residents, have it worse than you). However, you proceed with your classmates, so you at least have peer support. And that foundation of knowledge is still fresh and strong to learn the new stuff.

At this stage, MD/PhD students go to graduate school instead of clinic. This means that you start *completely* over: new classes, a totally different set of things to know, new (and often strange) people, etc. It isn't until you are finishing up that you feel you are just beginning to learn the field you have chosen for your PhD. You have become attached to a new set of people who you have to leave again, and you have had plenty of time to forget all of that nice foundation you spent two years building up. You start 3<sup>rd</sup> year with a group of people who are largely strangers, most of whom are 4-8 years younger than you (whippersnappers!!). If you are lucky, there might be a few other MD/PhDs returning with you to 3<sup>rd</sup> year, and if you are really lucky, you might like some of them, but it is unlikely you will have any rotations with them. You start completely over—again. (However, there is no need to panic—we will discuss this more later).

Most new mudphuds wonder: which is worse, medical school or graduate school? Even as you progress through your training, graduate school peers will ask how medical school is different, and doctors will ask about the PhD. Really, what everyone wants to know is: Which is "harder"?

I think—and essentially all the mudphuds I have polled on this agree—graduate school is more difficult. However, it's hard to directly compare, as they are so different. I use two metaphors to explain the differences between the two training paths; the first struck me within in the first year of graduate school after finishing two years of medical school, and the other has been very recent, having been developed after the struggle to publish and graduate.

#1—THE GYM METAPHOR: Graduate school is like strenuous cross training; medical school is like doing 2000 right biceps curls. They're both hard, but for different reasons.

I can see now, looking back, that I was still smarting from the butt-kicking that is first and second year medical school. And the point of the metaphor still holds; that is, the first two years of medical school are grueling and involve very little thinking and a whole truckload of memorization, and graduate school is also grueling but because there is a lot of thinking and reading (and doing experiments, sometimes over and over). But over these past few years I have developed a sort of fondness for years 1 and 2 of med school. For one thing, I had WAY more free time. For another, there was a great deal of structure, which brings us to--

#2—THE DRUGGED AND LEFT FOR DEAD METAPHOR: Imagine you are sleeping in your bed, and suddenly wake with the feeling someone is in the room. You open your eyes in time to see masked men chloroform you back into unconsciousness. When you next awaken, you are in a completely unfamiliar and uninhabited jungle, with no apparent trails, paths, or indication of where you might be. Next to you, you find a map and compass with a note: "500 miles to civilization. Good luck, and watch out for the tigers." This is medical school. Graduate school is the same, only when you wake up, you are naked, and they didn't leave you squat.

Clearly, when I came up with this metaphor, I was feeling the angst of the complete lack of structure which is rampant in graduate school. I am the kind of person who likes to make lists and cross things off. (Confession: I have also been known to add something to the list which I have already done so I can immediately cross it off. I know there are more of you out there: don't deny it.) People like me are bound to feel some angst in graduate school where everything tends to be "fuzzy", including expectations and deadlines. This drives me absolutely nuts. It also can, for those not careful and/or not in possession of this tome, lead to months or even years of flailing.

The other hard part of grad school is that it is—well—*hard*, and you never, ever know for sure when in God's great name it will end. Medical school is hard as well, but no matter how bad something is, you know that in about a month at most, it will be over and you can go on with your life. That is why so much of this tome focuses on how to make grad school *end*. It is also important that although, at times, it may seem like a lie, but you *do* have some control over this variable!

Before we move on, a few additional general words of advice. First, by the time most M.D./Ph.D.s get here, you have had enough research experience to qualify as mid level or even advanced graduate students; some of you may have even done enough to justify a Ph.D. if you had been doing it in a graduate program. You may laugh now, but by the end of the experience you will have enough perspective to understand this principle. For now, please try to file it away in the back of your mind. It's important, because one really productive way to look at graduate school is that 80% of it is composed of hoops you must jump through to obtain the degree. The other 20% is in small part becoming someone who, and in large part simply realizing, that you deserve one.

Don't take that as a license to be cocky or have a strong sense of entitlement. First of all, there is *always* more to learn, and always ways for you to improve. Second, you will find that

there already exists a certain degree of prejudice about mudphuds in both the research and medical cliques, which those attitudes will do nothing to discredit. The reason I tell you that you are already almost deserving of a Ph.D. is that I've seen too many students take too long to shed their insecure shells and become confident scientists when nothing about them has really changed except for their age and pain threshold. If you are smart, competent, and hard working, you deserve to earn your Ph.D. in a reasonable amount of time, and you deserve to fight for that right.

Finally, I cannot impress upon you enough the importance of using the resources at your disposal, chief of which is the MD/PhD program. The UNC MD/PhD program is a special place where the students really care about the program and each other. We have fantastic leadership and guidance. Everyone, including senior students, are willing to really bend over backwards to help you. However, it is easy to start feeling really detached from the program as you get sucked further and further into the Vortex of Doom, a.k.a. Graduate School. *Don't let that happen to you!* Do all you can to remain enmeshed in the program and stay close with your fellow mudphuds of all levels. Don't be shy in asking for help or advice, even about things which may not seem huge but are nagging at you. Check in with the leaders and mentors of the program about your progress and projects. Take advantage of these resources, because even places like UNC has cracks through which you may fall, tiny as they are.

Now, without further ado, let's get started, because the sooner we get started, the sooner you can graduate.

## **I: Preparing to Survive**

*Do yourself a big favor, and take the time to lay the proper ground work for success now, before it is too late and no one can hear your screams*

### ***A. Picking your department***

This may seem like a clear cut decision, but it may not be. Contrary to what you might think, you shouldn't make it based purely on the subject matter. Know important things about your potential department, such as:

- The nature of the preliminary (or qualifying) examination
- Class and teaching requirements (in general, the fewer, the better; also make sure they give you appropriate credit for things you took in 1<sup>st</sup> and 2<sup>nd</sup> year med school)
- Graduation requirements
- School wide and national reputation
- Pay
- How it has treated mudphuds in the past
- Does support staff care (or at least notice) if, for example, you don't get paid one month

all of which can vary widely from department to department.

Often, if you like a particular primary investigator (PI, the person who would be your mentor/boss), and the project you are interested in is related to another field with a department which is a better fit for you, the PI will consider getting a joint appointment so you can have your cake and eat it, too. Be sure to ask, explore all of your options, and think carefully.

Remember that what department you get your PhD in has little to no impact on what you will study the rest of your career; it can, however, impact your career in other ways if you fail to obtain some first-rate mentors or take too long graduating (or are forced to drop out from lack of support). You probably don't believe me on this, but ask basically anyone; it's true. Save yourself some extra misery and settle into a department that appreciates you and will support you when you need it.

It is easy for MD/PhDs to obtain all of this useful information; just ask your fellow MD/PhDs who are in, or have finished with, graduate school. Call it a perk of the program.

### ***B. Picking the right rotations***

Keeping in mind the above, you might want to rotate in labs from more than one department. You owe it to yourself to at least look into other departments which may be outside what you think you want to do. Be sure to examine labs of PIs who have joint appointments.

The most important thing to remember here is not to repeat other people's mistakes (actually, this is a key way to succeed in graduate school, and for that matter, life). For example, I was saddened to learn that a fellow MD/PhD student wasted a rotation in a lab which I could have told him, from personal experience, was not a good place to be. The program is one of your greatest assets, and you should use it at every opportunity. There is a master list of every rotation all mudphuds have done here; if someone has rotated or done their research in a lab you are interested in, *talk to him or her* before committing to a rotation there. You can save yourself a lot of time and unhappiness.

If no one in the program has rotated in the lab, then talk to a student in the same department, or to one of the MD/PhD Advisors. Get the low down on things that are going to influence your interest in actually joining the lab, which are detailed below:

### ***C: Picking the right PI/Lab***

You heard Dr. X give the most amazing seminar and you are convinced that he or she is imminently close to curing Horrible Disease Y. You should run right out and join their lab, right? Not necessarily...

The other graduate students in the lab you are considering look like they are about to kill themselves. When asked about the lab, people give you vague, sometimes strange answers (like if you ask if the lab is attractive, they say it "has a nice personality"). Funding is low/running out. The boss makes you punch in and out. There is a grad student in the lab starting his or her 7<sup>th</sup> year. The lab is an absolute death trap, a quicksand of misery, and no number of Nature publications can change that. Which is why:

Picking the right PI and lab is the single most important way you can avoid a torturous, non-productive graduate school experience. It is very, very, *very* important to find a PI whose style and personality is a good fit for you. It is **much more important than finding a project you fall in love with**. It's kind of like finding someone to marry; having a compatible personality is a lot more important than what they do for a living. Try to find a PI that sees eye to eye with you about managerial style (do you want someone breathing down your neck, or forgetting you work there?), expected hours (do you want to work Saturday so you can take Monday off, or have to work Saturday *and* Monday?), and setting (would you prefer to listen to music, or to the wailing of other students while you work?). You need someone who will balance out all of your crazy parts, and whose crazy parts you can in turn balance out. For example, if you are a normal, balanced person, you would not want to work for a Yankees fan, since they all have strong tendencies towards maniacal evil. Don't work for a control freak if you are a control freak. Don't work for a slacker if you are a slacker. Also, it is better if you don't want to stab them with any handy object, blunt or sharp, after speaking with them for short periods of time.

The other people in lab are a good measure of this. Ask yourself: Do these people look despondent? Depressed? Are all the windows nailed down to prevent further suicide attempts? Are they angry? Drooling? Does their skin show signs of having seen even a few seconds of sunlight in the past year? These are important things to know. Also, ask about people who have



recently left the lab. Did they do so in a tight, wrap-around coat and a white van, escorted by men with tranquilizer guns? Or did they move on in a normal span of time to a respectable position at a respectable institution (not the kind of institution the white van was going to)?

Also: do you hate them? Having people you look forward to being with every day, rather than dread, can absolutely make or break your graduate school experience. (Do remember, however, that lab personalities can change as people turn over. Consider when the people there now are likely to leave). Having a good post doc in the lab is a big bonus for most people, however, this can depend on how involved the PI is or isn't. Do make sure that the lab runs smoothly, one way or another; i.e., are there protocols, or does everyone in the lab do common things differently? Do you have to do your own dishes? Make all of your own reagents? Get the low-down on how the lab works and think carefully about how you would work in it.

Another good thing to look for is a lab that pursues *projects*, not *methods*. For the purposes of your graduate training it is better to be able to use whichever methods or techniques your project or hypothesis calls for rather than having to scrounge around for projects which fit with a lab's or PI's pet technique.

A very important but overlooked aspect is mentorship. It's sad, but some PIs will support you for the rest of your career, and some will step on your face just to publish in a mid-level journal. If possible, find someone who graduated from the lab and ask them. You will need the support of your former dissertation advisor for quite a while—residency, fellowship, and beyond when you're applying for grants. Find someone who will be there for you. *Remember, your PI is not actually your boss. They are your mentor.* It is an important distinction. It is often helpful to revisit this concept when you are having trouble with him or her; thinking about it from this perspective can help you know how to approach a solution.

Lastly—and I speak from personal experience—think carefully about a lab situation where you would have to interact with a truly difficult individual every day. When you're just a rotation student, you may be able to convince yourself you can tolerate them. However, it's amazing what three to five years can do to your perspective; let's just say that in my case, I'm lucky I didn't end up in jail.

Again, finding a fit with these aspects of a PI and lab is more important than the specific research they do. You want to be interested in what you'll be doing, but you *absolutely do not* have to pick something you want to do for the rest of your career. The vast majority of people don't end up doing what they did in graduate school, and having some experience in another area is often amazingly beneficial when you end up wherever you'll be for your career. After all, the rest of medical school plus residency will take a minimum of 5 years; by that time, most of what you do in graduate school will be obsolete anyway. And with that encouraging thought, let's move on.

## II: Staying Alive

*Congratulations; you've managed to pick good rotations which led to a good department and let you find a good lab. Or maybe you just think you have; we'll address this alarming possibility below. But don't worry about that now. Focus on continuing to build on your informed and intelligent choices and above all:*

### ***A. Be the Captain of your own ship***

This sounds fairly self-explanatory, and it is. However, for various reasons, scores of graduate students everywhere are floating around randomly on bobbing, captain-less ships. Or, they are sailing towards a slave port, because they have allowed their ship to be captained by someone else (it is important to assume, until proven otherwise, that everyone around you is looking to sell you into slavery).

Actually, in many ways, this is my philosophy of life: life is not just stuff that happens to you. It's what you do to stuff, if you get my meaning. I'm not a terribly patient person, so I was lucky enough to learn early in the grad school process that it is important to **take initiative** if you ever want to escape. Because it is *unlikely* that anyone else is going to care as much as you do that you check things off of your list and eventually graduate.

Find out what you need to do and when. Have conversations with your boss about what he or she expects from you. In short, *be proactive*. (As a side note, I also learned this the hard way back a million years ago when I was working in the real world. I was horribly underpaid, and when I found out that I was making less than new people with less experience, I was very, very angry. I even started looking for another job, but as it turned out, all I had to do was to go to my boss and say "I deserve to make X amount of money." He agreed, and my salary was increased by about 40%. Basically, very often people will give you as little and take as much as they can get away with. I don't mean this as cynically as it sounds, but it's usually true to some degree. If you are good at your job and are being mistreated you need to be your own advocate and stand up for yourself. This is definitely true in grad school too.)

Some examples, which will be discussed in more detail below, of things which require you to put on your big boy or girl pants and take care of:

- Making sure you have an appropriate project(s) which stands a good chance of getting you publications and GETTING YOU OUT (section IIB).
- Forming a committee (section IID).
- Having regular committee meetings (aim for about every 6 months), and make them productive (section IIIA).
- Checking off the seemingly endless stream of departmental checkie-boxes which you must check in order to escape with a degree (including prelims).
- Re-evaluating your progress, or lack thereof, at regular intervals (IIE).
- Starting to write your papers (IIIB).
- Achieving actual progress in your knowledge base and skills as a researcher.

So get out there and steer, people! Your ship's a-waitin', and if it helps, I have an eye patch and a parrot you can borrow.

### ***B. Choose the right projects***

-If a project is described as “sure fire”, “sexy” or “cutting edge”, watch out. You may be about to get screwed.

I learned this one the hard way. It might seem all shiny and flashy and awesome to start a new project, but this is the kiss of graduate school death in 95% of cases. Read that sentence again, because you, like dumb ol' me, will almost definitely be lured into this crap. You have to remember: *It almost never works out for you*. Who it works out for is the graduate student who *follows* you. And what are you, Mother Theresa? No, you will *never* graduate with that kind of altruistic attitude. What you need to find is some other poor Mother Theresa sap senior student who was tricked into starting such a project and is leaving and is ready to hand it to you with the four or five years of crappy, monotonous leg work all done. You might have to be co-author on the first paper, but believe me, it is almost always worth it.

The possible exception here is if you have one or two other nice, reliable, sedan-style projects, you might want to consider the flashy new project; just think of it like buying a lottery ticket on the way to work. Yeah, you might win, but it's not a sure enough thing that you would feel alright in not going on and securing some guaranteed cash so you can continue to, for example, eat.

In fact, it's usually a very good idea to have at least two projects at any given time, at least one of which meets all of the following reliability criteria:

- The PI should be able to outline for you what sort of stuff will be included in your first paper in a moderate amount of detail
- Along those lines, the PI should be able to describe multiple branching points for the project, as in what you would do if Outcome A was observed, vs. if Outcome B was observed, for all aims of the project
- It should make sense to you and stand up to some hearty questions
- It should not depend entirely on new, untested methods, technologies or protocols
- Ideally there should be someone else *currently in the lab* who can train you to do 90% of the techniques you will need to complete the project
- It should not be a radical departure from projects the lab has already had some success (read: publications) with
- You should run your project by at least one competent scientist who is not your PI and who has at least a passing interest in making sure you do not spend the next 10 years in graduate school (ahem, MD/PhD advisors). For example, you might not really know what is involved in making and characterizing a knock-out mouse, so you might not know that the chances of you being successful in that and obtaining a degree in 4 years are roughly the same as the chances that Brittany Spears will win a Nobel Prize

Along the way, be sure to be wary of potential chump situations which veritably litter the graduate school landscape. In fact, we are about to encounter our first one:

**\*Potential Chump Situation Alert #1: Becoming involved in a poorly thought out side project which has little or no chance of resulting in meaningful progress for you**

**Warning Sign:** Whoever is trying to get you involved in this mess is very enthusiastic, vaguely pushy, stands a lot to gain, but probably won't have to put forth much more effort than you will; says things like "This could get us a quick/easy publication."

**Upon further inspection:** This project will take up oodles of your time, but will not be part of your dissertation. There are two exceptions: first, if you are *guaranteed* authorship *for a set amount of work, regardless of the outcome*, and feel you can finish the said work in one month or less, it may be worth it. Second, if doing it would put the other person in your debt, and you think you can later use this to your advantage, consider it.

**How not to be a chump:** First, define all the details—*specifics* about the experiment and *specifics* about the authorship. If the deal is no good for you, just say no. *This is a very important theme you will see throughout these pages: sometimes you have to say no.* If you are no good at saying no, learning how to do so now will save you time and sanity. In fact, this is a good time to...

### ***C. Learn to say NO***

-Don't you have to do whatever your PI, collaborator, and/or committee says? Sometimes. But don't take it as a given.

Unless you are planning on having nervous breakdowns at regular intervals for the rest of your life, you are going to have to learn to say no to things. This is particularly important if you are female or a minority, as every committee, group, council, and hobby society in a 20 mile radius will be banging down your door to get you to participate, since often their funding and credibility depends on them not being entirely composed of white middle aged males. So why not start getting some practice now?

Am I telling you to be difficult? Divisive? Antagonistic? Not a team player? Absolutely not. These things would definitely not be in your best interest. What I am telling you is that sometimes people (PI, lab mate, collaborator, committee member) will ask/tell you to do something that doesn't make much sense for you, that will just take up lots of your time without any benefit to you or your project, that will mainly lead to you awakening in the dead of night in a cold sweat and wishing you were going to work at Wendy's in the morning instead of going back to the lab. And in these cases, I recommend: 1) confirming with a reliable outside source that this is not the kind of quagmire which is worth your time, followed closely by 2) politely declining.

You may be asking: what types of situations merit saying no? Well, here is a suggested list of things you should consider saying no to, and how to decline without being a huge jerk:

## Potentially Bad Situation

Bad projects, as discussed above.

Silly, redundant experiments requested by a lone committee member (you need to have reasonable members to help you fend off these kinds of requests: see Section D below).

Spending time training new lab member after new lab member. (You will probably have to, and should, do some training. But you can't let it drain all of your time; these duties should be spread around to other lab members, too.)

Picking up the slack of a less-than-hardworking colleague.

Doing grunt work for other people's projects without much hope of payoff (authorship, returned favor).

\*not their real names

\*\*yes, you should have thorough, typed protocols for any method you use more than a few times

## Example Decline

"I'm sorry, I have too much on my plate right now with my other projects. Maybe in the future, if I have more time, I might be able to be involved."

"I understand what you're trying to address with that experiment, however, because [support with data and knowledge], I don't think that experiment is really required here."

"I'd love to help, but I just finished training Michael McSlowlearner\*, and I really need to focus on making some forward progress with my dissertation project for a while. Maybe Sally Slackerpants\* can train the new student this time."

"I understand it's frustrating that Danny Deadweight\* is not making a lot of progress, but I already have my hands full with my own projects. Maybe copies of some of my thorough, typed protocols\*\* might help."

"I wish I could help—I just can't spare the time right now."

How can you tell that you need to work on saying no? Be on the lookout for:

**\*Potential Chump Situation Alert #2: Not saying no to things you should say no to**

**Warning Sign:** Your boss (and basically everyone else) not only comes to you for *everything*, but sends others to you, too.

**Upon further inspection:** You have become a doormat. Sometimes people don't even ask you to do stuff anymore, they just tell you to.

**How not to be a chump:** In this area, all grad students have to be somewhat of a chump. You will have to do things that aren't your job, and if you are any good, you will have to do more of this than other, stupider people around you. So in a way, it's kind of a complement. The trick here is to find where to draw that line in the sand. Being fairly Machiavellian myself, I tend to ask myself the following question before doing just about anything for anyone: "Will this, somehow and at some point, be helpful to *me*?" Be sure to ask this inside your head. For some reason, people tend to think you are a jerk if you ask it out loud.

Remember, as we decided above, you are the Captain of your own ship. No one cares what happens to you as much as you care what happens to you. And above all: it is okay to stand up for yourself.

#### ***D. Committee members: pick helpers, not hammers***

Your committee can be your saviors or your jailors. If chosen well, they can balance out an unreasonable PI and each other, move you along, make your project better and you a more competent scientist. If chosen poorly, they will damn you to the Hell of a Thousand Petty Experiments from whence there is no escape.

The key here is very similar to the advice above: ask around for opinions and reputations. Ask senior students in your department—the more, the better—about their experiences and what they have heard about potential committee members. It is helpful to have a scientific link between the committee member and your project, but just as important is to have someone interested in being a good committee member, which amounts to being an adjunct mentor for you. Things you should look for:

- Good scientific reputation within, and beyond, the department
- Their own students don't hate them
- Their own students graduate in a reasonable amount of time
- You aren't scared of/intimidated by them
- When you first e-mail them to ask if they would like to be on your committee, they don't take more than a week to respond (this suggests they are probably either too busy or not interested, and either way, that's no good for you)
- Get at least one physician-scientist; more mentoring opportunity, more clinical insight, and more possible letters of recommendation for you
- Most importantly, they have a good reputation as committee members

Don't be afraid to go and talk to them about possibly being on your committee. If you have heard mixed things about them, then you might consider taking a part of your project—a section which has some relevance to their area of expertise—and asking their opinion about it. Have a conversation where you can try to eke out their views and personality and see if it would fit with you and with the rest of the group.

**\*Potential Chump Situation Alert #3: Letting a committee member be forced on you who has a reputation for making people cry or, much worse, spend forever getting a Ph.D.**

**Warning Sign:** This person's nickname is "The Ol' Ball and Chain". The youngest grad student in his lab has been there 12 years. He doesn't believe in new techniques unless the results have been verified by two old techniques.

**Upon further inspection:** He thinks MD/PhDs get "special treatment" to "get out fast" and is on a one-man mission to rectify the situation. He always wants "a few more experiments". He is out to ruin you.

**How not to be a chump:** Steel yourself, re-read section IIC, and JUST SAY NO. If you, for whatever reason, do end up with this person on your committee, remember: *committee members can be replaced at any time*. I am not kidding. Save yourself and find someone reasonable who has your best interests at heart. If you can't, then you need to try to get someone with a strong enough voice/personality on your committee to overrule this person when they try to mire you down.

### ***E. "Constant dripping hollows out a stone": keeping forward momentum***

-Relentless attempts at forward progress are the name of the game, especially when times get tough.

One of the most difficult parts of graduate school is finding the determination to trudge on when your project is in the crapper. Don't underestimate how hard it is to show up and do experiments over and over when nothing is working. I think this is one of the ways in which graduate school is an edge in difficulty over medical school. There is constant pressure and obvious consequences in medical school for not making progress and forging ahead; the things you need to learn are laid out in front of you, and if you don't learn them, you will fail your class. In graduate school, there are rarely actual consequences to having spans of months where no progress at all is made on your project. Which can be good, because sometimes it is out of your hands; sometimes, no matter how hard you work or how many hours you put in, there will be nothing to show for it. However, the lack of consequences can *really* undermine your work ethic. It's a constant struggle to find ways to motivate yourself.

There are two steps to getting things done, if you think about it. Sadly, they aren't always as easy as they sound.

#### **Step 1: Show up**

Sometimes you will wake up in the morning, lay in bed, and think about how you are so sick of trying things that don't work, how you're sick of lab and graduate school and you just need a break. You'll probably find that your brain can be very persuasive those mornings—it will have very convincing and reasonable sounding arguments as to why it would be okay for you to just take the day off. This is one of the many reasons to try and find a lab which has people you enjoy being with. Finding one or more people to work next to that you like can make the difference between just barely scraping by and actually thriving. There were many days when the

only thing that got me out of bed and into lab was the knowledge that at least I would see my friends, and they could give me a pep talk.

There are other tools also. Self bribery can be very helpful. Depending on the lab you join, there may be plenty of motivation—in the form of having your boss berate you for hours—to at least show up. Side note: some bosses don't even notice if you don't show up for a few days. You should decide if this would be good for you or bad for you. I know it sounds nice now, but it can be helpful to know that you will be missed if you don't show, because sometimes things are so rough that even awesome labmates won't help.

Of course, showing up isn't enough. Once you get in to lab, it's time for:

## **Step 2: Do actual work**

First, briefly congratulate yourself for shaking off those two weeks of long hours and hard work that went into the garbage yesterday. Now it's time to get down to business. This may not be as easy as it sounds.

You see, there is this kind of quicksand that can form in labs. Chances are that at any one time there are at least two people for whom things aren't going well. And in the days of computers, and heading out to lunch, there are about ten million ways in which you can be technically *in* lab but *not actually doing anything*. You may be able to escape this temptation normally, but having someone else around that is as frustrated, as tired, as disillusioned and as unmotivated as you forms slacker quicksand that is well nigh impossible to escape. Watch for this quicksand, and avoid it if you can.

There are two sayings that really helped me pull out of this quicksand. The first is the title of this entry: constant dripping hollows out a stone. I liked to say this to myself as I got up to start repeat number one billion of an experiment I didn't want to do in the first place. The other is: you can't till a field by turning it over in your mind. Another trap is thinking, and planning, and thinking, and planning, but never just *doing* your experiments. At some point you have to just get up and do it.

Another strategy that proved helpful to me was to sit down and really take the time to analyze all of your data. Often I would complete an experiment, glance at the half-processed results, and decide it was crap. Then one day, after weeks of having crappy results, while fighting the urge to throw myself from the building, I would look at this enormous pile of data on my desk and decide I should really analyze it and put it all together and—miracle of miracles—it would turn out that there were interesting results in that pile after all.

Because the truth is--and you have probably noticed this as a theme so far--that only you can get yourself through grad school to your degree, and you do that by trudging on.

## ***F. Mind the minutia***

First things first: you should have a CV already (if you don't, My God, put this thing down and put one together right now!). This makes it easy to follow my advice, which is to *keep a continually updated CV*. You will thank me later. And don't look at it as a chore; sometimes it's nice to have something (other than your mom) which is glad to hear all about your newest accomplishment. Personally, I keep two versions: one which has little blurbs about my research experiences and projects, leadership duties, volunteer activities, etc., and one which is more streamlined. If you keep the blurb CV updated it takes seconds to generate the streamlined



version. You will need both later, and you will be so happy to have them quietly waiting while those around you scramble to remember what they did with Project Smiley Sunshine seven years ago in the Great Frenzy of ERAS (sadly, you will learn about this later).

Next, it's time to scope out your hoops. After you get your projects up and running (or while this is happening, if possible), you should start making a list of graduation requirements: classes, teaching requirements, prelims, orals, all of that. It is generally best to get these things out of the way as soon as possible. Don't put off prelims or orals thinking that you will be better prepared later; generally you aren't allowed to take them until your second or third year anyway, and waiting is unlikely to help you. These are things that need to be checked off your list and not hanging over your head when your project really picks up and starts to sprint towards the finish line (don't laugh, it could happen).

**\*Potential Chump Situation Alert #4: You think you are about to graduate but suddenly find there is some random strange requirement you did not manage to meet.**

**Warning Sign:** Graduation requirements? What graduation requirements?

**Upon further inspection:** You thought you were done. Welcome to 6 more months in purgatory.

**How not to be a chump:** Don't assume you will get an e-mail or notice from *anyone* if there is something that will block you from getting your degree. Check with everyone, from your department to the Graduate School to the Registrar to make sure you are a GO for Grad School Escape Launch.

Finally, try your best to start out and continue with a comprehensible form of organization for your lab work. Keep great, detailed notes. Always write down more info than you think you need. Take it from my personal experience: sometimes knowing the lot number of a reagent you used can save you weeks of work. Keep dates on all of your notes and experiments. *Back up your work* (you will weep many tears if you lose months of data analysis, or worse, yet, data, when a hard drive dies on you). Keep a good protocol notebook filled with protocols of such startling accuracy and clarity that your dog could reliably reproduce your work. I am not telling you this because I am an organization nut (although I am that). I am telling you this because 1) it will increase your productivity and your chances to make good forward progress, and 2) it will enable people to come around and finish up a few things for your publication, which just came back with requests for revisions, while you are in Surgery Rotation Land, a not-so-magical place where you are nonetheless completely disjoined from reality. If you leave the lab without establishing an idiot-proof paper trail, you may never get your work published, and your CV will be very sad indeed.

### ***G. Know when to ask for help***

-Ideally, this would be before you kill anyone, including yourself.

Have I mentioned that the MD/PhD program is an invaluable resource for you? Because it is vitally important that you not forget this. Most graduate school fubars could have been sidestepped if only the student had sought help as soon as obvious signs of impending fubar became apparent.

Have frequent chats with your fellow mudphuds and graduate students, preferably with malt beverages available. Not only is it therapeutic, but it can help you pick out these signs earlier. I've seen it happen; students are all sitting around commiserating, finding they are facing similar struggles, when someone will try to casually slip in, say, that their boss has been whipping them with a flail when their positive controls don't work. So often they are so deep in the thick of things that they don't seem to realize how outside the norm this is; they look confused when the other students stare at them with a mixture of horror and pity. It's only then it begins to dawn on them that corporal punishment may not be appropriate in the graduate school setting. Okay, at least not with a *flail*.

Or sometimes, the students will later admit that they knew things were getting bad, but they just hoped that they would resolve on their own with time. Sometimes they do. And sometimes the lack of a body won't stop a jury from handing down a murder conviction, so let's not let it get to that, okay?

Repeat after me: It doesn't hurt to talk to someone about it! If in doubt, set up a meeting with someone you trust—a department chair, committee member, PI, labmate, MD/PhD advisor, etc. **Do it sooner rather than later.** Most of the time, these problems are fixable, and you will never know the disaster that might have befallen you.

Sadly, some of you will know Disaster. You will know Disaster very well. So well that Disaster feels it can stop by your place, anytime, without calling, and drink all of the beer in your fridge. And sometimes the only way to escape Disaster is by... gulp... switching labs.

## ***H. Switching labs: Know when to walk away, and know when to run***

The most important thing I can say about this subject is that, without fail, those mudphuds who, for whatever reason, had to switch labs, all say the same thing: *I wish I had done it sooner.*

Again, having outside opinions here is very important in determining if this kind of drastic action is required. Most of the time, with help, things can be solved in such a way that you can obtain your degree without prison time or excessive mental breakdown. However, there are a few situations which merit immediately reporting to someone you can trust, who ideally has an impressive title or significant clout (ideally both). Such situations are:

- Your PI is grossly mistreating you (emotional abuse, sexual harassment)
- Someone else in your lab is grossly mistreating you, you have confronted him or her to no avail, and your PI refuses (or does not have the *cojones*) to stop it
- Your PI is guilty of scientific misconduct

- You and your PI have developed a destructive relationship (won't help you publish, aren't speaking, etc) from which it seems impossible to escape
- You are so miserable that you are considering just dropping out of graduate school and going back to medical school without a degree

Some people worry that they will be burning bridges. But in the words of my wise husband, Dr. Dr. Peter Nicholas (MD/PhD grad 2008): *it isn't a bridge if you couldn't cross it in the first place*. That is to say, if things are so bad that your PI (or department chair, or whatever) would never be of any help to you anyway, then leaving is unlikely to make things worse.

Seek help early, and don't fear that having to switch labs is the end of the world. It never is. And the longer you wait, the more difficult it will be. So if you find yourself in one of the above unfortunate situations, or something similar you don't think you can live with, get help, and move on.

### III: Getting Out Before You Shuffle Off This Mortal Coil

*As unlikely as it may seem, it is possible*

#### A. Committee meetings: help them help you

If you have followed the advice outlined in Section IID, managing this part will be a whole lot easier for you, because your committee *wants* you to graduate, and at the very least, does not have an active interest in watching you suffer while you get there (let's hope they might even want to help you avoid that).

My advice here is (shocker!) multi-fold. First, it is important to have REGULAR MEETINGS. I would advise having them approximately every 6 months or so. Seems like a lot? Well, it may help if I explain the actual purpose of a committee and what they are looking for.

Many people think that your committee is there mainly to guide your project and then sign off on it when they feel you have a nice, complete “story” and X number of publications. Though I cannot deny that this is one part of it, experienced graduate students and graduate school survivors can tell you that this is, at most, a small part of it. (*Note: This fact is highly dependent on you having picked good committee members and not hammers*). A good committee is looking for the following:

- You have OWNERSHIP of your project. I.e., you can defend experiments, results, and hypothesis better than anyone, including your PI.
- They see you often enough to know that you are working hard, producing data, and making progress.
  - Important note: Progress needs not be defined as “positive” data!!! Always present *all* of your data, so they know you have been working hard! Also, see below for tips on making “negative” into “positive” data.
- You speak with them as though you are colleagues, and not as though they are your bosses. Ask for advice, not permission.
- You have a reasonable plan for where your project will end and you will graduate.

So, think about what you need to do to meet the above criteria. Know the literature which has bearing on your project. Be organized. Let them see you often, and be explicit in the progress you have made. Always have a slide which outlines what you have done and what you have left to do before you feel your dissertation is finished. Don't make any of those things dependent on the actual results you obtain! Turning “negative” data into positive data is a very important art which you should learn as soon as possible. For example—don't say that your binding experiment “didn't work”. Say that you have shown that ligand X does not bind receptor Y. Don't cling so devoutly to your hypothesis that it blinds you to data pointing you in another direction.

Short term goals are great in committee meetings. Tell them what you plan to do before the next meeting, making these goals as attainable and relatively un-ambitious as possible, and get them to agree that this is a reasonable goal. Present further, more long-reaching plans as “options” or “possibilities”. Then, at your next meeting, put up the same slide from the last meeting, and BOOYAH, the results you got. That way, they get to feel like you're doing what

you said you would, and more important, what they said you had to do. This can be in addition to your overall dissertation checklist described above. Break it down for them, so they don't have to think too hard. Bad things can happen when you make your committee think too hard.

If you can sense you may have hit a glitch which you feel may be a sticking point for a certain committee member (after a few meetings you should be able to see these coming), then go and meet with that member about it before your committee meeting. Develop a plan together and then they will be on your team during the meeting. Make sure that your PI knows everything you are going to say in your meeting. The last thing you want to do is to seem like the two of you are on different pages.

As Dr. Dr. Josh Knowles (UNC MD/PhD graduate 2003) always said, you have to *finesse* your committee a little bit. It's all about making them feel good about signing your dissertation. If you do the above, they will.

A final note. It is helpful if you start dropping hints early about when you plan to graduate. You can start subtly and then get more pointed as time goes on, but repetition with specifics is important. Here is an example timeline:

First meeting: "I hope you'll agree this project places me in a good position to finish in four years."

Second meeting: "Given the timeline for experiments I have just presented you, which makes sense and is well thought out, I am hoping to return to medical school in the spring of (whatever year)."

Third meeting: "My progress is right on schedule for my projected defense in the spring of (whatever year). I really want to get back to med school on time."

Fourth meeting: "And given these new results, I feel good about my position to defend in April of (whatever year). I need to be finished by May at the latest so I can be positioned to return to 3<sup>rd</sup> year of medical school on time."

Fifth meeting: "If you don't sign off on my dissertation in five months I will tie you all to chairs and make you watch movies by Jason Friedberg and Aaron Seltzer."

Okay, that last one was a little out there, but the point remains. You should be brining this up early and often, and sometimes this results in them actually thinking that it was their idea all along. Plus you want them to help you achieve that goal, and to avoid all of you being unpleasantly surprised one day when you announce you feel you are 6 months away and they think you are 24 months away.

## ***B. From piles to publications***

The last thing you want to do is to think you are ready to write a paper and find that there are a bunch more experiments you should probably do. How to avoid this? **THINK ABOUT THE PAPER FROM THE START.**

Not to detract from the sciency process, but thinking about the paper from the start can help not just minimize heartache but also help make your project stronger. It can also prevent a

lot of “project wandering”, which means taking off on splinter projects which don’t fit into any of your publications. In other words, it keeps you focused. Find a method that works for you; that being said, the way that worked for me was to start with the figures.

Here is the method. As soon as you start getting data, start putting together figures. Think about the best way to present your data. Continue to add to your figures as you go. As soon as you have 2 or 3 figures, print them out and stare at them for a while. Think about what they mean, and the best way to present the evolving story. It won’t always be in the order that you did the experiments! Arrange them in different orders and think about how you would write up the text and how one figure would flow logically into the next.

If you get in the habit of doing this with your data, then you will find that necessary controls, new experiments, and evolving hypotheses occur to you. The earlier this happens the better off you will be.

Another section you might consider working on before the paper is ready to write is the methods section. It is SUCH a pain to write this section, particularly when one of your figures was from two years ago and you can’t remember where you bought the reagent from. Just take the time to jot this stuff down and you will be glad later.

The last and very key part is the bibliography. I strongly recommend picking a program (for example, EndNote, although I think that there are some other free programs around; often your lab will buy this for everyone to use) and starting to use it EARLY. As you download papers to read up on your project and come up with new ideas, download them into the program. By the time you start writing your first paper, you will have most of the references you need already in your program, ready to spring right into your draft. Then, add to it with subsequent publications, and by the time you are ready to write your dissertation, you will be way ahead of the curve.

When it comes to submitting, the main thing is to SUBMIT. Sound weird? Well, it’s not always so easy. Dos and don’ts:

DO:

- Write like it’s your job
- Stay organized
- Be informed
- Keep on top of your PI for revisions if they are slackers
- Consider aiming a notch higher for the journal than you think you’ll get

DON’T:

- Dilly-dally with writing
- Let a manuscript sit on your or your PI’s desk for weeks
- Be delusional about where you can get this published

Remember, the sooner you push through and get it submitted, the sooner it can get boomeranged back to you with ridiculous comments which show that the reviewer didn’t even read the stupid manuscript otherwise they would know that their 5<sup>th</sup> comment was clearly

addressed in figure 3 and line 82 and their 8<sup>th</sup> comment doesn't even make sense and 10 is literally impossible given the restraints of gravity and ahhhhhhhhrrrrrrghhhhhh. Don't worry, you'll get through it.

### ***C. The horror, the horror (getting scooped)***

-Don't panic; you can still graduate

First of all: take a deep breath. Remember that, no matter how it may seem when you read that paper and your heart sinks and then sputters, it is a very rare that *all* of someone's project gets scooped. This means that the chances are excellent that you will be able to salvage something! Often, the worst case scenario here is that you have to publish in a journal a few notches down from where you had been aiming. And while that Cell/Science/Nature paper sure is nice, it is not necessary for graduation in any way, shape or form.

Next, take a day or two to stop freaking out before you sit down with your PI to talk about it. Don't forget that he or she may be freaking out also. Chances are they will feel like they have let you down. It really helps to have some emotional distance from the situation so that you can have a productive meeting about how you are going to regroup and press on.

This is the other down-side of the super-sexy project that your PI may have pitched you at the beginning of your time in the lab. If it is hot and it works, chances are someone else has also discovered that fact. If you find yourself the point person on a project like this, you may want to have a discussion with your PI about what the minimum publishable unit might be. If you can get out the super-sexy part in a communication or letter, you can save the whole beautiful story for a different paper (and be able to take your time while you are working on it). But if you find yourself scooped, remember you have your not-quite-as-super-sexy project to fall back on as well.

### ***D. Dissertation dementia***

-The three most monumental tasks: formatting, formatting, formatting

**STEP ONE:** Go to the following pages:

<http://gradschool.unc.edu/etdguide/>

[http://its.unc.edu/TeachingAndLearning/AOE/LearnIT/AOE\\_LRNIT\\_ONLINE\\_TUTORIALS#word/](http://its.unc.edu/TeachingAndLearning/AOE/LearnIT/AOE_LRNIT_ONLINE_TUTORIALS#word/)

**STEP TWO:** Read the entire formatting guidelines file. Then, check out the tutorials. If you can learn how to use Microsoft Word or the word processor of your choice to do the formatting required to submit your dissertation, you have won the most decisive battle in the war. An alternative is to get your hands on someone else's dissertation file and use it as a template—but the requirements can change year to year, so make sure not to skip reading the current guidelines. **NOTE: IF YOU JUST START WRITING YOUR DISSERTATION, YOU WILL JUST START CRYING LATER WHEN YOU HAVE TO GO BACK AND TRY TO FORMAT THE ENTIRE**

THING TO FIT THE CRAZY SPECS. I **strongly** recommend, at the very least, figuring out how to make a table of contents which automatically updates itself (this can be done in Microsoft Word and probably most others). It is kind of a pain to learn how to do this, but will save you SO much time.

**STEP THREE:** Pull out your manuscripts. The typical structure of a dissertation is essentially:

- Chapter 1: Intro and background. You can really go too crazy on this; don't start with the beginning of time. Basically, this can come from, or be a combo of, your grant proposal/manuscripts. Here is where the EndNote or whatever reference library you built up by following earlier advice starts to come in really handy.
- Chapter 2: Your first manuscript, with no or minor modifications.
- Chapter 3: Your second manuscript, with no or minor modifications.
- Chapter 4: If you have another manuscript, you need to get a life, but also put it in here.
- Chapter 5: Summary/future directions. This is all of the experiments you would have the misfortune of having to do if they weren't letting you graduate. You can be really crazy here and propose things that would cost roughly the same as a space shuttle launch. These can be derived from your grants/papers/wildest dreams. This is the most fun section to write, and probably the only one your committee members might bother to peruse (see below).

So, as you can see, writing the dissertation really isn't a big deal if you have READ THE FORMATTING GUIDELINES, learned to make your word processing program follow them for you from the beginning, and formed a nice comprehensive bibliography throughout your graduate writing career.

My only other advice here is to get this puppy done. Don't leave it hanging over your head. The very last thing you want is to go back to 3<sup>rd</sup> year with dissertation revisions or—gasp—actually finishing your dissertation hanging over your head. Trust me. Your 3<sup>rd</sup> year performance is much, much more important than if you are pleased with that certain turn of phrase on page 145 of your dissertation because (and don't think about this until you have lots of distance from the experience) *no one except you will ever read all, or even most, of your dissertation, and the parts they do read, they won't read carefully*. Now forget I said that because otherwise it will be even harder to write. Just think about how nice it will be to see it all printed and bound, with your name on it, sitting on your parents' bookcase, gathering dust for all time.

### ***E. Dodge the ultimate bullet: Get back to 3<sup>rd</sup> year med school on time***

**\*Potential Chump Situation Alert #5: You let someone (PI, committee, yourself) talk/bully you into going back to 3<sup>rd</sup> year late.**

**Warning Sign:** But if I stayed another 2 or 3 months, I could get this paper out, and...

**Upon further inspection:** Typically, someone has convinced you that it would be in your best interest to hang around another few months. Ask yourself this: how often do the best laid graduate school plans work out?



**How not to be a chump:** The truth is, 2 or 3 months can sometimes, but rarely, make a significant positive impact on your overall graduate school experience, especially if you've been planning ahead and taking heed to the advice outlined above. If you've left a careful paper trail, another student can earn a second author position by finishing up one or two experiments for you. If you've been planning for the paper from the start, things should be on track to get it submitted. If you've selected your committee carefully and done a good job with your meetings, they should be willing to let you go on time.

They say it is fine to go back late, and that is probably true to a certain degree. However, having been through it, those of us who went back (and went back on time) agree that it was absolutely the right thing to do. A lot happens to a medical student in those first 2 or 3 months of 3<sup>rd</sup> year, and if you miss that process, you may be at a disadvantage for the rest of the year. It can also really mess with 4<sup>th</sup> year scheduling, which can be very complicated already.

So, the advice here is to *think very, very carefully* before you let someone talk you into going back late. Especially think about who this will really help. Most PIs are straight PhDs who have heard vague talk about going back late, and that it's fine. They don't have any real understanding of the implications it will have for you; they only know how much better it would be for them and the lab if you hung around and did this, that and the other.

Before you even think about telling your PI or committee that you might consider going back late, talk to an MD/PhD advisor, and see if they agree it would be worth it. Most of the time, it won't be. If it really is, then things will be fine; just make sure before you let graduate school take that one last swing at your bruised and bloodied form.

## **IV: Don't Have an MI; it's Only 3<sup>rd</sup> Year Med School**

*We told you you'd be fine, but you didn't believe us; well, we were right*

First of all, whatever you do, don't start thinking about this really at all until you have finished all of the hoops, trials and tribulations above. Focus on getting out of graduate school and wrapping up every loose end possible so that you can focus on 3<sup>rd</sup> year when you go back.

You think you have forgotten everything. This is kind of true. The good news is that it doesn't really matter. There are really only three things that matter in 3<sup>rd</sup> year.

First, *be cool*. Use your common sense here. Be a team player. Be cheerful, don't complain. Help out the more important and therefore busier people around you, even if it doesn't seem like a particularly learning-filled activity. Don't be a jerk and show people up or try to make others look bad. Care about your patients. All pretty obvious stuff.

Second, *study early and study hard*. This is what will propel you from a high pass (HP) to honors (H) range. Pick a study book, divide the number of pages by the number of days in the rotation, and read daily. This accomplishes two things. You look spiffy on rounds and in didactics because you've been reading, whereas most of your classmates don't really start studying until half way through the rotation. It also positions you to absolutely rule hiny on the shelf exam, which they try to pretend is only a small portion of your grade but in reality often makes the difference between a HP and H.

Third, lastly, and really most important for piece of mind, is to *get the tried-and-true tips from your fellow mudphuds*. This annual passing down of wisdom has resulted in the vast majority of us absolutely owning 3<sup>rd</sup> year medical school. You won't be any different!

Remember: You have survived graduate school. You are not just battle-hardened; you have looked into the Abyss and lived to tell the tale. Everything your med school classmates complain about from here on out will probably just seem kind of comical to you.

It's like I told my team on my first rotation of 3<sup>rd</sup> year. "I can do whatever scut work you need. Don't worry about my pride. I just finished grad school; I have no pride."

## ***Conclusion***

Well, there it is: over 25 collective years of wisdom, boiled down and served extra cheeky just for you. We hope that you find it useful, comforting, or at least entertaining. The nice thing to know is that it won't last forever. And, if you have read the above, it probably won't even last as long as it *could* have.

As I've said before, the UNC MD/PhD program is a very special place. We have a long and glorious tradition of looking out for each other. When we find a pit, we like to strew orange cones all around it with big signs saying "DANGER: PIT". Watch out for these cones and signs; ask others who are further along the trail from you if there are any coming up.

Importantly, remember that in the very near future you will be the one coming upon pits. I hope that you see fit to drag out orange cones and signs of your own to guide those hapless souls who follow you. In short, keep UNC a special place to be.