

## DON'T PANIC!

### HOW NOT TO WRITE YOUR THESIS IN ONE WEEK



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I think there comes a point during every PhD student's graduate career when they feel overwhelming panic about writing their thesis. Whether that moment comes during the first week of classes or in the last year of research, it can be paralyzing and debilitating, and result in abnormal behavior, even for a graduate student.

My first experience of this kind occurred during a geochemical thermodynamics course taught by Prof. Don Rimstidt at Virginia Tech. As usual, my mind had drifted away while Don waxed ecstatic about Eh–pH diagrams. Like a typical delusional PhD student, I was daydreaming about the glory of papers, conferences, and talks, without even having written so much as my name on my thesis yet. I eventually started thinking to myself: writing this up might require a smidgen of actual effort. In fact, writing might actually be just as hard as—if not *harder* than—the lab work itself! Panic hit me like it does a freshman geology student with a rock hammer at his first outcrop: how on Earth was I going to write my thesis? My eyes widened and I nervously fidgeted in my seat, rocking my head from side to side. Unfortunately for me and the rest of the class, Don interpreted my awkward behavior as me being exasperated with the material. So upon my “request,” he decided to spend the next 20 minutes discussing the merits of a logarithmic scale when plotting activity coefficients. Needless to say, that wasn't what I was looking for at that moment.

For most students, the realization that writing may not be as easy or as straightforward as originally planned is a difficult pill to swallow. Oftentimes, writing takes much, much longer than originally anticipated. The reason is simple: writing at a high level is extremely difficult. On top of that, most graduate curriculums do not emphasize technical writing at all, so we have to learn how to write as we go. Unfortunately, many students don't realize this fact until it's too late.

But do not fear geochemists and mineralogists of tomorrow! There is hope! You can avoid becoming one of the many horror stories everyone has heard about. After all, nobody *wants* to become engrained in lab folklore for staying up for 72 hours straight, surviving only on coffee and jelly beans, to finish the last chapter of their thesis. Of course that isn't to say there won't be a few late nights on your computer with deadlines looming fast, but the thesis-writing process can be easier, less stressful, and more educational if you start preparing early.

So how does one actually prepare for such a task early? Well, for me, the best piece of advice I received was from a thesis committee member. He told me to start writing as early as possible, as often as possible. It's almost a guarantee that your best writing won't happen under the pressure of finding a job, wrapping up experiments, and preparing your defense presentation. To avoid writing everything at the end, it makes sense to do little tasks along the way. For example, write the methods section(s) of your thesis as soon as the work is done. One student told me that one of her methods sections was completely written by her second year. It doesn't seem like much at the time, but even a little step like that goes a long way towards easing the pressure at the end.

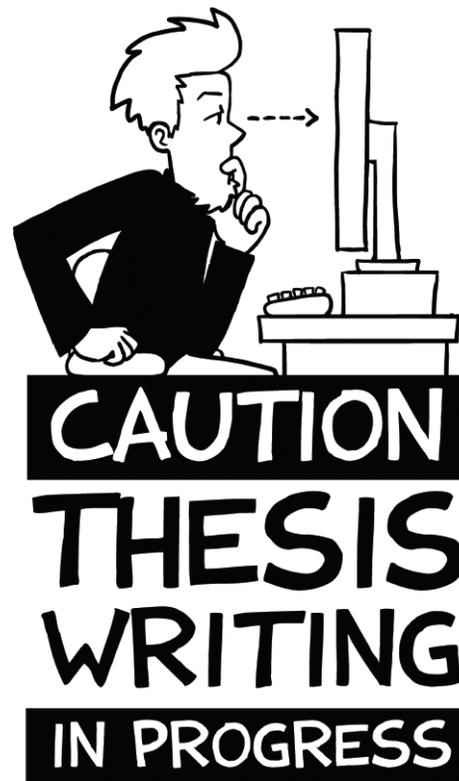
But everyone's PhD experience is a little different—among countries, universities, departments, and even within one's research group—and some of you might not have the luxury to write very much material early. Therefore it doesn't make sense for just one person (i.e. me) to give advice. To help provide additional insight, I asked a few other recent geochemistry PhD grads to share the best piece of advice they received during their writing process. Here are their helpful responses:

Kelly Johnson (PhD 2006, Notre Dame), now a geochemist at USGS in Menlo Park, California, says, “*If your university is very particular about formatting, use an old thesis as a template. That way you aren't wasting a lot of time fighting with word processing software and the auto-format shenanigans. However, if you are going to do that you should double/triple check to make sure you don't leave any of the old text in the middle of your thesis.*” I hope that last part isn't from personal experience!

Deric Learman (PhD 2008, Virginia Tech), now a postdoc at Harvard University, warns that “*thesis writing (and approval) involves bureaucracy. Just like science, make a schedule but be prepared to have your schedule changed for unforeseeable reasons.*” So don't get too stressed out over circumstances that you cannot control.

Kate Tufano (PhD 2008, Stanford University), now a geochemist working with Tetra Tech-MM in Fort Collins, Colorado, advises that “*if you're going around in circles and can't seem to get anything down on paper, write conversational style then go back and 'science-it-up.'* Once you have an idea on the page, at least you have something to work with.” Good advice for getting a lot of thoughts on paper quickly.

Frannie Skomurski (PhD 2007, University of Michigan), now a postdoc at Pacific Northwest National Laboratory in Richland, West Virginia, suggests, “*Make a big pot of tea, sit down, and write. It has to get done one way or another, so just block out the time and get it done, but try to make it kind of pleasant for yourself.*” I wish I was bet-



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ter about doing this. I found many excuses to check e-mails or wander around the halls instead of actually writing. Don't procrastinate!

So there you have it. No matter how daunting a task it may seem, or how overwhelmed you may feel, you can get through writing your thesis. You might not be able to avoid the initial panic, but you'll be better prepared to overcome it fast. In the end, you'll not only be proud of your work, but you'll have a lot less stress when graduating and be a better writer because of it.

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#### NOTE FROM THE MANAGING EDITOR

When I took a writing class, I was surprised to discover that the teacher treated writing very much like exercising: we did warm-up exercises — short periods of writing — before we got to the main writing period of the class, and it worked. I also recommend the following books: *A Manual for Writers of Research Papers, Theses, and Dissertations* (7<sup>th</sup> Edition) by Kate L. Turabian, published by the University of Chicago Press, and *A Writer's Coach*, by Jack Hart (Anchor Books).

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