

## Guidelines for Singha Lab Graduate Students – Fall 2017

Most students enter a relationship with a thesis advisor without a clear idea of what they can expect, so I have compiled this handout to give you some information about what I expect of you as a student and what you can expect of me as an advisor. For more on the advisor-advisee relationship, read this: <https://chroniclevitae.com/news/1637-advice-on-being-advised?>

I want your graduate degree to be a fulfilling process. At the end of it, you will have completed a substantial body of research that will make a contribution to your field and gained teaching and/or mentoring experience. Especially at the Ph.D. level, you will also work closely with me on submitting grant proposals and learn how to compete for research funding. Completing your degree requires only three things: independent thinking, perseverance, and a positive attitude.

Your reasons for wanting to get a graduate degree will affect how we tailor your experience here to best meet your overall goals, so let me know what you'd like to accomplish while you're here. From my side, I see your goals as many-fold: thinking independently, conducting sound research, presenting at scientific meetings, and submitting your completed work as manuscript(s) for publication in peer-reviewed journals. The main part of my role is to act as a mentor and provide direction and advice on your research. I will try to provide assistance with project design, data analysis, writing, and giving informal and formal presentations of your work; however, I want you to feel like you own your project and are an independent researcher. One of my goals for your experience here will be to help you to do good science in a broad sense as well as how to do your specific project, and how to present both well. I hope that you leave here with experience and knowledge that will help you complete future research projects, not just knowing how to do a project just like the research you conduct here.

### TIME

The time commitment to research tends to be one of the most important issues for graduate students and mentors. As long as I can see progress toward your goals at a reasonable pace, I will not pay much attention to how you spend your time. Think about, write down, and talk to me about your short and long-term goals so that we can keep you on track. For every upcoming semester, we will similarly sit down together and identify reasonable goals to be completed by the end of that semester. We will revisit them periodically throughout the semester during our weekly meetings. Classes are only a small part of why you are here, so don't let them take over your life. Your priority needs to be to your research.

I expect you to regard graduate school as a full time job (with room for vacations and overtime). It's important that you learn how to budget your time so that you can finish your degree in the shortest amount of time possible—while still completing good, solid science. I expect that you will spend ~20 hours/week on your research if you're a TA and 40 hours/week if you're an RA. Class work will also take up some of your time. During your first semester, you might find that you seem to have time on your hands or that you are not sure exactly what you are supposed to be doing. This is normal! Come and see me if this is the case. As you approach the end of your graduate work here, you will probably find that you will work more hours so that you can finish on the time line you identify. Although this unequal distribution of work does not occur for everyone, this seems to be a typical experience for grad students.

### REQUIREMENTS

To obtain your degree, you'll need to complete a number of courses, formulate a research project focusing on one substantial hypothesis, complete that project, write up and publish your work, and defend it. For both the M.S. and Ph.D. tracks you'll have annual meetings to discuss your progress. In either case, it is your responsibility to set up committee meetings to discuss your research plans. Please keep up on your requirements as listed in the graduate bulletin here:

<https://catalog.mines.edu/graduate/programs/interdisciplinaryprograms/hydrologicscienceandengineering>

**You are responsible for ensuring that you are meeting the necessary course requirements and other deadlines.** Your progress toward your degree is largely dependent on you. I will regularly meet with you to assess your progress, but only you can do the work. You can take up to 15 credits in a semester; many/most of those may be research credits depending on where you are in the program.

Writing is going to be a part of your life in a way in likely hasn't before, regardless of what degree you're coming from, this one will require more. If I can only recommend one book, check out Josh Schimel's (2012) *Writing science: how to write papers that get cited and proposals that get funded*.

## **ONE-ON-ONE MEETINGS**

You can expect a moderate amount of supervision from me, but I expect that you will be able to budget your time reasonably and become an independent worker. As you start new parts of your project, I will plan to spend time with you to be sure you have the tools you need to move forward with your work. We will set up a regular time to meet once a week. It's up to you to let me know if you need more time with me and to schedule that time. During these meetings we'll have a chance to talk about what you've been working on, where you plan to go next, and what problems you may be having. A great way to interact with me is to bring figures of data/model runs/ideas/text that you're working on. This will give us something to talk specifically about, and I can often help you find problems and direction early on with these sorts of materials.

There may be times that, for various reasons, we don't meet every week. If this is a problem please let me know. I have an open door policy with respect to problems you are having with your science and you can normally interrupt me with questions or to discuss a problem related to your work. That said, if you've got a quick question that could be answered over email, I'd prefer that only because I have ~10-15 people on any given day that just drop by, and every visit costs me a bit of ramp-up/ramp-down time. Just keep in mind there's only one of me (although if anyone wants to work on a side project for cloning one's advisor; I'm game), and a few more of you. If my door is closed, it's because I am either not in or I am trying desperately to finish something. Please feel free to knock if it is something related to your science that I could help with. If it's a question some of the staff could answer, please ask the right folks—I'm here to talk science with you, but I'm not the person to ask about how to ship something or book a room in the building. Also, while I do text, it is not the best way to communicate with me in that I lose important messages on my phone. I also encourage you to get to know the other scientists in the department (and beyond) and draw on their assistance if you need it. I think you will find that most of the faculty here will be more than happy to meet with you, but be sensitive to the fact that we have deadlines to meet and classes to prepare.

One thing I'll ask of you is to keep a detailed notebook/set of Word documents/password-protected blog of your research activities. It is vital you keep detailed notes of your work. Although it may seem redundant or unimportant at times, it will help you during your project (and help us to figure out where things may have gone wrong in the lab or field!). Bring your notebook to our meetings. Your notes will also help us after you leave with paper revisions, etc. I often refer to notes I made in my lab notebooks years ago.

## **PEOPLE**

Besides me and the other students in the group and HSE, there are a number of folks who you should know:

- *Tim VanHaverbeke*: Tim is the administrator for the HSE program. Questions about university-level finances (tuition, etc.) and HSE requirements go through Tim.
- *Jackie Randell*: Jackie is a research associate in our group who helps to keep the field equipment in good shape and can help you with field projects. We're incredibly lucky to have her working with us, and keep her posted about all field-related activities you have going on, as well as equipment needs. She will be your go-to person regarding field work travel and equipment.

- *Dorie Chen and Cheryl Medford:* Dorie and Cheryl are the administrators for the Geology & Geological Engineering (GE) Dept. Because you're working with me (who sits in GE) you'll interact with them for FedEx/UPS shipping, travel, office space, all TA issues, etc.

Please keep in mind that all of these wonderful folks are busy and be respectful of their time.

## EQUIPMENT

I don't expect that you will be perfect when completing your work – everyone makes mistakes. However, I do expect you to use any field or lab equipment with care, and to let Jackie or I know when something isn't working right so that we can get it fixed prior to it next being needed. Remember, when it comes to equipment, brute strength is generally not the answer.

We have a lot of 'how to' guides for our equipment on our group Google Drive that might help you—if you get one that isn't great, help to update it for the greater good. We also have a Google Calendar that we use to check out equipment and gear so that no one has expectations of using something that is already booked (ask Jackie or I for access to both, if you don't already have it). Please work with your colleagues to share popular gear, and let me know if we need another piece of equipment. If it's affordable, I will try to make that happen.

## SAFETY

As an obvious note, safety always comes first. Please be responsible for your safety and those around you. So that you know, I am a Wilderness First Responder also certified in CPR. I hope I never have to use these skills with you guys. I highly recommend, for your own benefit and the benefit of anyone you're in the field with, to take a Wilderness First Aid class. These are offered on occasion on campus through the Outdoor Recreation Program, and you can find info on that here: <http://www.nols.edu/wmi/courses/wildfirstaid.shtml>.

## THE HYDRO LABS: 141E, 214A, 406 BERTHOUD

These rooms are shared space among HSE faculty here in GE. All labs have nice space for doing benchtop work. Please keep in mind that all of this space is shared, so be considerate of all persons using the lab by keeping the benchtops clean and tidy at all times, labeling the bench space you need with tape, and putting unused equipment and supplies away. We have a small lab space in 214A for lab work, and access to Alexis Sitchler's geochemistry lab in 406 if we need to deal with chemicals (no chemicals should be in the other spaces). 141E stores some expensive lab and field equipment; therefore, whenever the room is empty, it must be locked. Use the online Google Calendar for signing out equipment, even if for a short period. If other students or faculty want to borrow something from the lab, do one of two things: 1) if it is a common item, sign it out on for them online like normal or 2) if it is an expensive or difficult to replace item, consult with Jackie or I before lending it out.

## COMPUTING

Please take care of any computers you put on the Mines network: don't use pirated software or take copies of software from other folks, don't remove system files, don't share your account information with other people, and keep your computer up-to-date with respect to updates and anti-virus software. **Back up your data often.** If you need something, let me know and we'll buy it if at all possible. If there is expensive software that you only occasionally need, check to see if the computers in the labs on campus have what you need.

## CREDIT CARD

For work-related expenses, you can get a credit card (called a one card) that can be used. To get a card, you'll need to fill out a student application, from Cathy Daniels in Guggenheim. This card can be really handy if you're doing a lot of travel, as you don't have to front airline expenses, etc. If you won't have a lot of purchasing, you can also ask Jackie to order items for you.

It is REALLY important that you are responsible with this card, as Mines does random auditing. You'll need assign every purchase to a 6-digit index (a grant number—you'll get this from me) and a 4-digit account code (you'll choose this from a list provided by CSM—there is a copy on our group Google Drive). Allocate your purchases online quickly, and work with Jackie if you need it. If you are not responsible with your card, you will lose privileges.

## MISCELLANY

- Phone: Land lines are going the way of the dinosaur, but if you use one, dial 9 to get off campus.
- Seminar: The department-sponsored seminar, the Van Tuyl, happens every Thursday at 4 pm. You are expected to attend and encouraged to ask questions. Also, many good hydrology talks happen in CEE—check the calendar there.
- Business Cards, Software: You can get free business cards and have access to discounted software—check <http://inside.mines.edu/Graduate-Resources> for more info.
- Group Meetings: Once a week, for one hour, we will have a large group meeting. You'll be expected to present your work, or a paper of interest, once a semester. Consider this to be an opportunity to vet new ideas and communicate with a bunch of interested folks about where you're going with your research—you can get really useful feedback from them. You should ask questions of your peers during this meeting; it is your job to start thinking critically about other people's science and to help your peers with their projects. You'll also appreciate when it's your turn to present to not have silence!
- Forms: Many needed forms (for travel, etc.) can be found online here: <http://inside.mines.edu/Forms>. Most forms needed by graduate students can be found online on the Graduate School website: <http://gradschool.mines.edu/GS-Forms>.
- Mail and Shipping: Packages come through Shipping and Receiving and are then brought to the department. The departmental address is 1516 Illinois St., Golden, CO 80401. Should you need to send items by courier, Cheryl can help with FedEx forms and arranging FedEx pickups.
- Keys: A key request form from Cheryl is required to gain access to Berthoud Hall or get keys for rooms within the building. Keys are picked up at key shop at 1318 Maple Street, Building 3 (west of main Facilities Management offices), which has limited hours. Last I knew, these were: M: 8 am - 11 am, Tu-F: 12:30pm - 2:30pm – but double check.
- Travel: Before you go anywhere, for field work or conference travel, you need to fill out a TA form (travel authorization, not to be confused with a teaching assistantship) through the online TEM program. After you fill out a TA then you can either use your one card to book travel, use a travel agent and charge directly to a grant or buy a flight on your own credit card and get reimbursed. Upon return, you will fill out the TE (travel expense) form online, which must be built off your submitted TA. Attach all receipts electronically, and submit them for approval. The TE form is ideally submitted within 20 days upon completion of travel, but must be filed within 60 days from the end of your travel to avoid being treated as taxable income. If not submitted within 90 days, you risk losing the right to reimbursement; after 6 months, travel will not be reimbursed.
- Offices: Graduate student office space is in very short supply. Cheryl oversees office allocation, and students on the waitlist have priority for future offices. Priority is given for PhD students and teaching assistants.
- Rath Award: Given for the “best thesis with the potential for the greatest societal impact” to a Ph.D. student. The award will be awarded during the graduate students' graduation ceremony and includes a monetary award. Each program may nominate a maximum of one student. If you are interested in being a contender, please let me know.
- Parental leave policy for thesis-based graduate students: Continuance of assistance support is available from the Office of Graduate Studies for students who are supported on TAs and RAs and go on parental leave. The full policy is found in the “Registration and Tuition Classification” section of the

Graduate Bulletin. Although CSM doesn't have an extended "sick-leave" policy, for thesis-based students who develop serious health issues, considerations are made on a case-by-case basis.

## **EXPECTATIONS**

There are a few things you can do to ensure your success, and my happiness:

- Participate in HSE events and attend all hydrology talks in GE or in CEE.
- Meet with all visiting HSE speakers for lunch when you can.
- Sign up for opportunities to present your work. If I'm sending an email out about an opportunity to present or a fellowship, please consider participating.
- Help each other in the field. Yes, you're busy, but you'll appreciate it when the time comes that you need a hand.
- CC me on emails associated with your projects that go to our shared colleagues. In the past, I've had a few misunderstandings between my students and my colleagues that have led to minor issues, so now I just ask to be kept in the loop when you send emails. I likely won't respond or be involved unless you need me to, but this is for your protection as much as mine.

I will largely leave you be if I feel you are being a good group citizen and making progress on your work, but will certainly step in and let you know if you are not meeting expectations.

## **PROFESSIONALISM**

During your time here, I hope that you will develop as a professional. This means:

- Always treating others and their scientific ideas with respect and tolerance (even if you disagree)
- Taking responsibility for your own actions and duties
- Willingness to ask questions when you don't know the answer
- Helping other students when they ask for it
- Providing constructive criticism to your fellow students and to me. Criticism can be a sensitive issue, and I will try to treat you and your ideas with the respect that they deserve.

It can be tough getting used to a new university or degree program. If you have questions, please ASK! Ask me, other students, other faculty—we're all here to help you make this experience the very best it can be. You can always call me at if you need to: 303.273.3822 (office).

*Remember, you are ultimately responsible for the timely completion of your thesis, but I will try to help you achieve that goal. I expect that you will do an excellent job and I hope that the process is fun and intellectually challenging.*

# Top 10 Tips for Surviving Graduate School (scholarships.com)

A lot of what you've heard about graduate school is true. It's a lot of work, it's expensive, and no, you can't blow off class to sleep in. But it's also manageable, and a decision thousands of students make each year to advance in or switch their careers or expand their knowledge in a field of study. We've come up with some tips below that can be applied to whatever advanced degree program you're in or hope to be in that should help you be more successful in your graduate school experience, and help you understand what to expect out of graduate school.

**1. Take advantage of professors and other contacts around you.** Chances are you won't find yourself in another research like this one where you have access to some of the best and the brightest in your field. You may need those contacts for your first job after you graduate, too, so best to cultivate relationships early on and not just when you're ready to ask for recommendations.

**2. Revise your approach.** Starting graduate school with the attitude that it will be a breeze just because you were a stellar undergraduate probably isn't the best idea. Pursuing an advanced degree won't be the same as pursuing your bachelor's, nor should it be. Go into the experience with high expectations for yourself, and the attitude that you'll need to devote more time to your academic life to be successful.

**3. Get organized.** Much of what you do on the graduate level will be useful down the line, whether that means an assignment will become a part of a portfolio or the research you do will find an eventual place on your resume. Come up with a system where you can compile anything you may return to after graduation, separate from any thesis materials you already know you'll need.

**4. Take initiative.** There isn't much hand-holding in graduate school, and you'll largely be expected to figure things out on your own. The time to become more independent is now. If you do have questions about your financial aid, a big assignment, or anything else, it's up to you to find the answer. Your professors will definitely appreciate you coming to them sooner rather than later.

**5. Expect to be busy.** If you struggled with time management as an undergraduate, you'll need to think about breaking that bad habit as soon as you start your new life as a graduate student. The assignments you're given will be more involved, the exams you take will take more preparation, and you'll be spending more of your time on academic work, whether that's on research, a thesis paper, or keeping on top of your studying.

**6. Prioritize.** There will be a lot thrown at you from the minute you start graduate school, and it's up to figure out what's most important to do now, and what can wait until later. Don't procrastinate: Big projects may need to be tackled piece by piece, and you'll be responsible for not letting all of your other work and responsibilities slide in the meantime.

**7. Study now.** It's much harder to procrastinate on graduate level work than it may have been when you were an undergraduate so stay on top of your studies. The best way to avoid burnout (and all-nighters) is to manage your time. Keep a calendar, to-do list, or whatever will help keep you on track, because we guarantee the coursework and assignments expected of you will be more intense than those you may have been used to as an undergraduate. They also are only a small part of why you are in graduate school—research is your key reason, if you are a thesis-based student.

**8. Become an expert.** Take advantage of research opportunities. When else will you have access to the caliber of academic professionals and materials that you'll have in graduate school? Getting more involved in research in your field may also help you cover your tuition and fees, as numerous fellowships, grants, and assistantship are based on your experience and willingness to conduct research.

**9. Budget wisely.** It may be difficult to save money while in graduate school, but it should be your goal to live frugally. You probably have student loan debt waiting for you from your bachelor's, so you shouldn't rely on loans to cover all of your college expenses. Find some part-time work that plays to your strengths or looks good on a resume, like working as a research assistant, and stick to a budget.

**10. Branch out.** Even the most studious among you need to leave the library sometimes and get acquainted with the rest of your graduate school class. Make sure to take advantage of what your school has to offer from time to time, whether that's a lecture series, a student group affiliated with an issue you support, or free pizza in the student lounge. Even graduate students need a break sometimes.

**11. AND MAKE TIME FOR PLAY!**