

Guidelines for graduate students in Professor Jasper Kok's research group

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Welcome to graduate school and my research group! I am delighted that you have decided to join my research team and to pursue a graduate degree at UCLA.

This document outlines guidelines and expectations for conducting research in my group and for the successful completion of your PhD degree. In addition, this document discusses what you can expect of me as an advisor. Please read this document carefully and let me know if you have any questions.

Responsibilities – mine and yours

I have two roles in our relationship. As your thesis advisor, my main role is to provide direction and advice to you in completing your PhD (more on that below). My other role is to serve as the project manager for each of the projects ongoing in our research group. In this capacity, I am responsible for making sure that our projects are completed within budgetary constraints and on time. In this role, I serve as your direct supervisor. These two roles are generally complementary.

Your primary responsibility is to make sure that your research project gets done. As a member of my group, it is your responsibility to conscientiously conduct and report on research in a timely manner. I also expect that you will contribute to a positive and collaborative working environment in our research group. Through formal reviews and informal discussions, we help each other develop as scientists as well as expand our scientific skill base. Occasionally, I will require work from you that does not contribute directly to your thesis, but will contribute to the success of the overall project and the success of our group, for instance through obtaining or maintaining research funding.

A less formal responsibility is for you to ask questions about anything you do not understand. Ask questions of me, your other professors, your fellow graduate students, and other members of the group. All science starts with asking questions, so it is important that you are/become comfortable with that. It's the best way to learn! It's also critical that you demonstrate scientific curiosity. If you do not, then a PhD program might not be a good fit for you.

Your presence in my research group is funded by taxpayer dollars, and is therefore conditional upon satisfactory progress in your research. Should your progress be unsatisfactory, then I would communicate this to you at as early a stage as possible, such that you several opportunities to address the problem.

Mentoring, individual meetings, and group meetings

Your professional goals will affect how we tailor your degree program and I will do my best to help you meet your overall goals, provided your academic activities (classes, research, etc.) do not conflict with advancing my research program. The main part of my role is to act as a mentor and provide direction and advice on your research project. I will strive to provide guidance with the design of your dissertation project, literature searches, the scientific method, numerical and theoretical methods, data analysis and interpretation, and oral and written

scientific communication. I will also advise you on your curriculum, and career goals. The objective is to teach you how to do good science in addition to how to do your specific project.

At the beginning of each quarter, please email me your class/TA schedule so that I have an electronic version of it. Based on both our schedules, we will set up a regular time to meet which, as a rule of thumb, will be once a week. We might meet more often in the beginning of your time here, and less often when you are nearing graduation. Whatever our meeting frequency is, it's up to you to let me know if you need more or less time than that. It's also up to you to come to me to schedule any extra times.

At these meetings, we'll talk about your research and anything else that you have concerns about. Also, bring your notebook and daily planner to our meetings, so you can take notes!

At the first meeting of each quarter, we will identify reasonable goals to be completed by the end of that quarter. We will write them down and revisit them periodically throughout the quarter during our meetings.

If you run into a problem that requires my attention in between our individual meetings, then I encourage you to send me an email or stop by my office in the afternoon. I generally block off the mornings as uninterrupted work time, which I need to effectively conduct my research, obtain grants to fund you and the rest of the group, and write papers. I also will generally not respond to emails on the weekends, unless we are on a tight deadline or it's an emergency.

I will require you to continuously write up your work throughout your time here, as research shows that regular writing enhances (y)our productivity (see more below). I will strive to provide feedback on any written products you send me in a timely manner. To respect my time, make sure that any work you send me has been carefully proofread and polished, unless we specifically agree otherwise.

We will normally have a group meeting every week, in which you are expected to give an update of your progress since the last group meeting. This is a great way for all group members to keep track of what everyone is doing, learn from each other, and get different perspectives. During these meetings, I expect you to be actively engaged, ask questions when you don't understand something, and provide comments and contribute to discussions.

To help ensure that we make really good use of the meeting time, please prepare a presentation and save this in your folder in the group's Dropbox (see below), with the filename starting with yyyy_mm_dd. You should start each presentation with your goals for the past week, and end with the goals for next week.

In addition to individual updates, we often use group meetings for a group member to discuss a relevant paper (journal club), or to give a practice conference talk. In the former case, you are expected to have carefully read the paper to be discussed. If you are leading the paper discussion, see the brief guidelines in the "Journal club" folder on the group dropbox.

Time expectations

The time commitment to research tends to be one of the more important issues for graduate students and advisors. I expect you to regard graduate school as a full time job, with room for both vacation and overtime. I expect each course to take up about 10 hours/week, a TAship about 20 hours/week, and that the rest of your time is devoted to research. As long as I see

progress towards your goals at a reasonable pace, I will not give much oversight on how you spend your time.

I expect that you will take off all holidays (Thanksgiving, Memorial day, etc.), the week between Christmas and New Year's, and a few weeks of vacation a year, for which I ask that you let me know in advance. Note that the period between quarters includes weeks when there are no classes, but during which you are expected to work.

Getting a PhD is hard. At times, you will likely feel lonely, frustrated, or stupid. This is entirely normal, and I will try my best to help you through such times. For your part, it is critical that you persevere through such times. This is easier if you strive for a healthy work-life balance, such that if your work is not going well, you can recharge your energies through friends, family, sports, or other hobbies. Therefore, while I expect you to work hard and with enthusiasm, I recommend that you strive for an active and rewarding life outside of your PhD program.

Time management

At the beginning of your graduate program, you may find yourself with free time. If you feel like you don't know what you should be doing with your time, come and see me. Towards the end of your program you may feel that there are not enough hours in the day to complete all the work that needs to be done. This is the typical experience of a graduate student, although it does not occur for everyone. Continual progression towards your dissertation will help eliminate this last minute (and usually unnecessary) frenzy that many graduating PhD students experience.

Time management is thus a vital skill in graduate school and beyond, but takes time and effort to learn. I have a small selection of books available in my office that can help you learn effective time management skills. I can also provide guidance on effective time management, and will share some of the most important habits shown to increase productivity and maintain motivation.

First, I expect you to use a planner. I recommend that, at the beginning of every day, you make a prioritized list of tasks to accomplish. For many PhD students, it is difficult to link their day-to-day activities to their broader goals of their specific project and degree program, resulting in a lack of motivation and a surplus of procrastination. To help bridge the gap between your long-term goals and the short-term items on your to-do list, it is important that you also make a list of tasks for intermediate time scales. I will aid in that by discussing with you objectives for each quarter (as discussed above). I also recommend that, at the beginning of every week, you write down a prioritized list of tasks to accomplish that week, based on the longer-term objectives for the quarter. Similarly, your daily tasks should be based on your list of tasks for that week.

Second, I expect you to write a little bit every day, especially after your first quarter or two in the graduate program. Regular writing has been shown to be drastically more efficient than 'binge' writing. Just take 20 – 30 minutes every day, preferably in the morning when most people are best capable of creative work, and do nothing but write. Don't worry about the quality of your writing; you can edit and polish it later. Regularly writing in this manner prevents writer's block, which is a problem for most academics (including, occasionally, myself). Furthermore, since writing is a form of structured thinking, it will help organize your thoughts about a project.



Selecting and developing your thesis project

If funding permits, I will give you the option to choose among several different projects. You also have the option to apply for your own funding, for instance through the NASA or NSF graduate fellowships, which I highly encourage. If you do receive a fellowship that pays for much of your salary and tuition, I will normally 'top off' your salary above the going graduate research assistant rate. When starting on your chosen project, I will strive to closely supervise you, and become more hands-off as you demonstrate competency in independent scientific research.

Your aim should be to advance to candidacy by the end of your second year, or by the end of your third year here at the very latest. This involves passing a series of exams (see <http://www.atmos.ucla.edu/students/graduate/phd-program>), culminating in the oral qualifying exam, in which you propose a detailed research plan for the rest of your PhD. Advancing to candidacy early is especially important if you are an international student, because it substantially reduces your tuition. It also gives you a raise in salary!

Expectations for degree completion

Our research funding is provided by government agencies that require our group to produce and disseminate research results. Therefore, while your thesis is a valuable result for us, it is (to be blunt) generally irrelevant to the funding organization. From their perspective, the support is not for your thesis, but for results and conclusions that move the science forward. And the work you have done will have no impact on science unless you publish it in the scientific literature.

Therefore, as a requirement for graduation, your dissertation must contain at least three publishable scientific articles. This means at least two articles that have been submitted or accepted, and one that is almost ready for submission. Each manuscript should contain a substantive new contribution to the science. We will do our best to scope the projects according to these targets.

The expectation is that you will be first author on these three articles, meaning that you have taken the lead in both the research and the writing of the article. I will require you to complete

these articles throughout your PhD, rather than only at the very end, which will hopefully also make your graduation much less stressful.

Miscellaneous

Copies: My research code for the copy machines is 24596. You may use this to do any research-related copying, but you are responsible to pay for any personal and coursework-related copies yourself.

Books: I have a small library of textbooks that you are welcome to borrow at any time. Of course, please do not lend my books to someone else without asking me.

Travel: I will generally have travel money available to attend professional conferences. After you advance to candidacy, I will strive for you to present at a professional meeting at least once a year. Of course, this is subject to appropriate progression of your work. There are often opportunities to apply for travel grants through the professional organization conducting the meeting, as well as through the university (see p. 43 of <https://grad.ucla.edu/asis/stusup/gradsupport.pdf>). I prefer that we try to obtain external money before tapping into the travel budget from a grant.

Intellectual property: Since the research we conduct is primarily funded by taxpayer dollars, it is ultimately public intellectual property. However, until the work is published, please consider the research you generate to be the intellectual property of this research group and UCLA. Of course, I highly encourage you to engage in intellectual discussions about your research with faculty, other researchers, and fellow students. However, please consult me before sharing data, models, and unpublished results or ideas that are easily replicable by others.

Communication: Any constructive relationship requires communication to remain strong. My relationship with you is no different. If you're having problems, if you need help, please come talk to me. I won't know if something's wrong with the way we're running things unless you *let me know*.

Dropbox: You will have a folder in the group's dropbox. Please see the guidelines in the root folder of the Dropbox for what you should store there.

Coding best practices: You will likely generate code during your dissertation. It is important that your code is readable and usable by others. Please see the guidelines on best practices on coding in the root folder of the dropbox.

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.

- Being willing to ask questions when you don't know the answer.
- Helping other students when they ask for it.
- Criticism can be a sensitive issue. I will try to provide you with constructive criticism and I expect that you will provide your fellow students and me the same.

Although you are ultimately responsible for the timely and successful completion of your dissertation, trying to help you achieve this goal is one of my highest priorities. I expect that you will do an excellent job and I hope that the process will be fun and intellectually challenging for you. Everyone here wants to see you succeed. Good luck!