Expectations of a PhD student

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This document should give you an idea of what is expected from a PhD candidate. If you follow these guidelines, I'm sure your PhD will go smoothly, quickly and with a successful outcome.

1. I expect a PhD student to be self motivated: To be proactive and to demonstrate enthusiasm. If you're not interested in the topic then why on earth would you want to do a PhD in it. Get a job, at least then you get paid a reasonable amount to do something that's uninteresting. A PhD is hard, much harder than anyone thinks at the outset, largely because you need to be incredibly committed to obtaining it. If you are not self motivated, ask yourself why, ask yourself how you could change your research to capture your own imagination. Discuss these changes with you supervisor. As a supervisor, I'd rather have a motivated student doing something that interests them than a poorly motivated student with poor progress doing something that interests me. While projects can constrain the flexibility of research, there is always scope to try and move the direction of research to maximise your enjoyment.

2. I expect a PhD student to be prepared: Under normal circumstances I expect to meet all my students for 1 hour per week. I expect all students to take notes in meetings. I also expect all students to produce a meeting brief. Do not try and write your meeting brief just before the meeting, it will be terrible. Try and get into the habit of starting next weeks meeting immediately after the previous meeting has concluded, by writing down the meeting outcomes. You should then add to it as the week progresses, inserting copies of any interesting results that occur during the week. A meeting brief should be sent to me prior to the meeting to give me opportunity to read it before we start. No meeting brief, no meeting. A meeting brief should contain:

   (a) A summary of what was discussed at the last meeting and what the agreed objectives of the current week were.

   (b) An overview of what work has been performed, this should include key aspects results, graphs, images, tables along with the methodology of how they were achieved. Do not pad your meeting brief with overly verbose explanations or code. You will get the most benefit from the meeting if you present me with a succinct description and associated formalisation that could ultimately be transferred to your thesis or a paper. Figures, either qualitative or quantitative results are always good to base discussion around and are normally the objective of the experiment.

   (c) Questions for discussion. Often the poorest part of a meeting brief, especially so if part (b) is insufficient. What questions would you like to raise in the meeting? What aspect of the work would you like to discuss? What do you want to gain from the meeting? The meeting shouldn't be for my benefit, it's for yours. If you come with no evidence of work undertaken and no questions to discuss then I will lead the discussion, I will moan about progress and I will suggest what you should do. You presenting your work and raising questions for discussion allows you to take control of the meeting and the direction of the research.

(d) Future work (short, mid, and long-term): what are your suggested next steps. Again be proactive about controlling the direction of your research rather than just doing what is suggested.

(e) A short (1 paragraph) summary of any papers you have read, along with proper references typed in bibtex and cited. This ensures you build up a good knowledge and bibliography to support your research.

3. I expect a PhD student to question their work. Before any experiment you should ask yourself what you expect to see in terms of results. Then, when you have the results, ask yourself do they correspond with what you thought you would see. If they do not, then either the experiment is wrong (e.g. code, data, protocol) or your understanding was wrong.

   In the first case, you then need to simplify the experimental protocol to isolate the contributing factors and repeat the process. Try a simple toy problem with trivial data and see if the results still disagree with expectations. Time and time again I am presented with a graph which are the results of an experiment that a student has taken to be "the truth". It is instantly obvious that there is an error in their code. Why? because the experiment was designed to test our understanding and it directly contradicted our understanding and cannot be explained.

   If the experiment was perfect, then follow the scientific method! Dig into your results as much as you can. Look for patterns (whether you can explain them or not). Revise your original hypothesis and try to propose a new experiment that would confirm it.

4. I expect a PhD student to ask for clarification: If an experiment is suggested and you do not understand why it was suggested then ask. If a certain course of action is suggested and you do not understand how to implement it then ask for clarification. There is nothing worse than misinterpreting instructions, then turning up with what seems like a random piece of work that wasn't discussed or simply not doing it because you didn't fully understand how to. If you find yourself mid week not remembering correctly, not understanding or needing clarification then ask. You only have to knock on my door or approach an RA if one is involved in your project.

   > To quote **The ABC system of classifying researchers** by Maria Petrou: "If you tell a person A, they understand A and then do A, that is a person with some research potential; if you tell a them A, they understand B and do C, they are a person with no research potential; if you tell a person A, they understand A and then do ABC, that is a person with excellent research potential, and if you tell a person A, they understands A and goes and does B, that is a person with issues!"

   I'll add to it. If you tell someone A, they understand A and then the go and do ABC all of which is documented in the meeting brief and under "points for discussion" and "future work" they suggest "we might like to do DEF" then they are my perfect PhD student.

5. I expect a PhD student to have to learn: To attend internal and external seminars, even if you don't think they are relevant. A PhD is a steep learning curve. You need to learn terminology, techniques and research practice and you need to develop skills as a researcher. Just because a title of a talk or paper doesn't have the same words as your thesis working title doesn't mean it isn't relevant. In the first year I would expect a PhD student to attend 80-100% of internal and external seminars. CVSSP used to keep registers and attendance at seminars was considered as part of the transfer process and annual review. It's a pity we stopped doing this, but we shouldn't need to.

   In the first year you don't know enough to be able to decide if a talk is relevant or not. In the majority of cases, it is relevant, the techniques, the methodology, the general overview of what else is being researched will help you. But you will also learn how to present material and just as importantly how not to present it. In the second year attendance can reduce 60-80% as you have more pressures

and are better placed to make informed decisions. In your final year, time will be tight, but there will still be material presented that is relevant, 40-60% might be an appropriate guideline but as there is something to be learnt from every talk, 100% attendance throughout your studies is (not surprisingly) the best policy.

6. I expect a PhD student to have a desire to learn: Don't go to talks because you were told to. Go because you want and need to. Seek out opportunities that would help you. Think about presenting work at BMVA technical meetings. Think about visits an internships to other labs that might be useful and summer schools that would enhance your skills.

   Read other people's theses. It takes about 1.5 days to read a thesis but you often gain so much more than reading a paper and not fully understanding it. Remember when someone writes a paper, they are tight on space and trying to get it past the reviewer by making it seem more complicated than it is. A thesis is often far easier to understand. Text books are just as important for a PhD as undergraduate study and typing any subject appended with the work tutorial" into Google will often help considerably.

7. I expect a PhD student to read. You cannot perform research without reading what others have done. Seminars are an easy solution, listening to a 50 min talk will often give more insight than 2 hours with a paper due to its heavy formalisation, but as you are expected to make a contribution within your field and publish papers of your own, it is essential that you read. A literature review of your chosen area is expected in the first 6 months of your PhD but you must continue to read beyond this period. Try to aim to read 1-2 papers per week. Set aside some time each week to do so and break this up with research.

8. I expect a PhD student to use those around them. The reason for having a lab is that people around you can help. There is no point banging your head against a brick wall when the person behind you has already solved the problem. As a rule of thumb, if you have googled something for 20-30 minutes and can't figure out how to do it, then ask the rest of the room if they know how.

   It is also useful to discuss your work with your peers during "down time" such as coffee breaks. Often, others can offer useful insight into your work or spot things or related work you may have missed. Furthermore, the act of explaining your work to others is a surprisingly good way to clarify things in your own mind.

9. I expect a PhD student to be present in the lab. Everyone should spend 90% of their working time in the lab. Working from home is ok but it should be the exception, not the rule. There are good reasons for working with others and creating a community of research (see pt 6). We are flexible in terms of working hours but as a general guide we expect people to be in the lab for "core hours" between 10 and 4.

   Some people are early birds, come in early and seem to slope off home early. Other people are night owls. Try not to be a night owl. It is often inevitable coming up to a deadline but you should try and re-establish a regular day time routine ASAP. Personally speaking, I am sympathetic as I generally do end up working late into the night. However, I do not let that stop me from being in the office during core hours, and nor should you. Historically, there is a clear trend that students who "work the night shift" take much longer to complete their PhDs and generally have far more difficulties during their studies.

   The main reason that I insist on core hours, is that I expect people within the group to help each other. You might feel bad asking lots of questions in your first year but you shouldn't. The people you are asking were first years once and others helped them. I'll expect you to help new members of the group later on in your studies. If someone has contributed sufficiently then raise this in a meeting so we can discuss if they should be included as a co-author.

In addition to ensuring that people are in the office at the same time to offer support, there are clear psychological benefits to being active while the sun is up, and interacting with your peers. If you find the chatter in the office distracting (I can certainly sympathize) then I would recommend earphones/headphones and either music, or similar background noise using a service like `www.noisli.com`. It's better to block people out, but still be available for discussions, than to simply not be there.

Finally, be careful about burning the candle at both ends. If there is a push for a conference deadline then you may want to work later and get up earlier (and I am happy to work late alongside you). However, this is not a long term strategy. The more tired you are, the more mistakes you make, and the more backtracking you have to do. I would much prefer that everyone in my group gets a solid 8 hours of sleep, than that they spend 2-3 more hours on research and try to muddle through in a caffeine fueled haze.

10. I expect a PhD student to keep me informed when it comes to holidays and sickness. If you are not going to be in the lab then you should let me know. If I am sick I have to call the university at some stupid time like 8am. I have to book and have my time for holidays approved by managers and heads of department.

    We do not run quite such an onerous system for students but if you are ill then I would expect you to contact me on the morning of your sickness. Before 10am when you would be expected to be in the lab and certainly long before any meeting starts. If it's long term sickness, then you will be expected to provide a sick note from your GP.

    If you want a holiday (which I would certainly encourage) then you just need to let me know and fill out the paperwork. Once a student informs me that they will be away, I will put a note in my diary so I know not to chase you if I can't find you. Holidays should be approved before they are taken. Try and take into consideration the conference deadlines before you book holidays.

    I would also encourage you to consider extending conference trips to allow holidays in exotic places. It's one of the perks of the job and is perfectly acceptable. However, you must make a a clear delineation between the expenses for the conference and the cost of your holiday.