Lab Guide for Huang's Research Group *

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1 Purpose of Lab Guide

This lab guide serves as guidelines for students (at least in my group) on multiple disciplines in graduate school including the honor code of research, the principles of interacting with others, career suggestions, etc. Indeed, grad school is not only about research, but also about developing a set of skills in the research community (e.g. how to interact with others).

Why I made this guide: The more students I interact with, the more I realized that most people are not familiar with the environment of academia. Most students do not know what others expect from you as part of the community. Sadly, faculty are the ones that have been in this unique bubble for a long time – so long that they easily tend to assume all the students know what is going on. Thus, I started this idea of summarizing my own experience for my students to make your graduate life slightly easier.

As my students, you are the best advertisement for our group. I hope my students can enjoy their graduate school, achieve their career goals, and more importantly, become someone others respect. I hope all of you, while retaining your own unique and awesome characters, will benefit from this guide to build your own reputation and our group's reputation. I hope, everyone will be proud as part of the Huang Research Group with all of our effort building a great research group together.

All the content in the guide is more or less "golden rules" in academia. That said, those are the convention or rules verified and followed by the decent part of our community. But of course, some of them are my own suggestions based on my most sincere opinions and experience.

2 Honor Code for Research

As a graduate student, your main job is research, the most exciting thing in the world :) Together with all the other researchers in the world, we want to contribute to a healthy, decent, and positive environment for our own careers. I summarize several honor code expectations for conducting research (especially for CS, but also applies to most other areas):

- Do not copy any text, data, figures from other papers, unless you explicitly cite the origins (including your own papers, which is self-plagiarism). Even when you cite the origins, you should still paraphrase the sentences. Otherwise, you are required to use quotes[1].
- You should also cite all the websites you refer to.
- **No fake results are ever allowed.**

Remember, no matter what happened, the three rules above are the LAW for research in our group. I totally understand that research sometimes can be frustrating, and it is just so attempting to fabricate some results that are exciting or time-saving to reuse others' work. But, please don't forget

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[1]There are exceptions for non peer-reviewed documents: for example, it is okay to reuse your own paper content for your own PhD thesis.

why you choose research when you decide to go to graduate school. You do not choose research to win, but to enjoy the process of exploring unknown. There are many reasons why people should not cheat (fairness, justice, etc.), but most simply, please think about what kind of person you want to be: do you really want to be someone that wins by cheating? **You do not want to cheat, never.**

2.1 Authorship

Authorship can be a tough decision to make. In general, the authorship should follow the order of contribution to the paper. In graduate school, by courtesy, the last author is usually the advisor(s) and the first author is the student that leads the project[2]. The suggestion is, always make it clear with your collaborators about who are included in the paper at the beginning and what you expect from them. For an extension of a paper, it is common practice to include all the previous authors, but author order may change if the leading person is different for the extension. You should totally inform your advisor and the main authors about all the author changes (ideally all authors).

3 Paper Submission

Here I will focus on the responsibility of the **first author** (likely graduate students like you) in the process of paper submission:

- You should pay attention to the important dates of the paper submission including (but not limited to) abstract submission deadline, full paper submission deadline, rebuttal deadlines, camera-ready deadlines, and make sure all the required files are ready for submission before the deadline.
- You should make sure all the format of the paper follows the requirements of the target venue.
- You should share the overleaf link of your paper with your coauthors as soon as you start writing the paper (please turn on link sharing and send the link with edit permissions).
- By courtesy, you should have a draft at least **one week** before the deadline and notify all of your coauthors to make a pass. Especially for senior researchers, they do not want their names appear on a paper that they have not done a proof reading (you should hold the same attitude as a researcher too, but this is much more often seen with responsible senior researchers).
- You should lead the rebuttal once paper reviews are back including summarizing all the reviews in a shared google doc and share with your coauthors.
- You are responsible for all the requirements for camera-ready submission.
- You should pay attention to the conference registration deadline, discuss with your advisor about attendance. Then you want to register as early as possible (when I was a student, I got my ACM student membership and it lowered the registration fee by a large amount. You should do the same thing) and plan on the hotels (e.g., share room with other students if possible) and flight tickets.
- You are responsible for presenting your paper in the conference. Even if you cannot attend and someone else in our group is going to present for you, you should help with the slides. If you are going to present it remotely, you should follow the presentation requirements and make sure you submit all the files on time.
- For your presentation, **you are required to schedule a presentation rehearsal with the group at least one week before you leave for the conference** (see Section 5.4 for more information).
- As the first author, you should feel free to remind your coauthors if you need output from them.

[2]it happens when a PhD student in their senior years independently mentor an undergraduate student and put their name as the last author after discussing with their advisors. This is usually for demonstrating the PhD's capability of mentoring in their resume, especially for a tenure-track position application

If we use the metaphor to call a paper a baby, first author is the parent of the baby. First author is about responsibility. You are responsible for the entire process of publishing a paper and presenting it. You want to make yourself proud as the first name appearing in the author list:) But of course, as your advisor, I am here with you whenever you need help.

4 Career Plan

With a PhD degree in Computer Science, you can be qualified for many awesome job positions. Of course for different positions, competition level differs. I want to point out that you should always feel free to pursue your dream (not limited by the name of your major). As your advisor, here I want to list some possibilities that some students may not be aware of. You should free feel to meet with me anytime to talk about your career plans. Below is just a simple description, more details should be discussed in our one-on-one meetings.

- Tenure track faculty: same (or at least identical to) what I am doing. You have responsibility of research, teaching, service, and advising undergraduate, master and PhD students. It can be stressful but I think it is exciting. Once you finish and qualify after a 6-9 year-long evaluation, you get tenure. E.g., Assistant Professors at Vanderbilt, University of Michigan, University of Tennessee.
- Teaching faculty: you can teach in liberal arts college (with or without tenure) and universities (usually without tenure). Usually no or very low expectation for research, thus you don't need to worry about publications or grants. E.g., Professor of Practice at Vanderbilt, Lecturers at University of Michigan, Assistant Professors at St. Lawrence University.
- Research faculty: mainly doing research on their own and with students. They are usually supported on soft money. As far as I know, there is no tenure. E.g., Research Professor at Vanderbilt.
- Postdoc: many PhD students take a postdoc position after PhD and get more prepared for their next step in their career.
- Industrial Research: You are pretty much working like a senior PhD student or Postdoc, but with a much higher salary. The research topics can or can not be decided by you. E.g., MSR, Google Research, Leidos, etc. Similar positions also include positions in national labs or federal agencies such as AFRL, NSA, etc.
- Industry: The most commonly chosen job with a very high salary. You will be the senior developer in a team, sometimes will also lead research-related tasks (but not as heavy as industrial research positions).

Note this is an incomplete list. Here I just want to list the ones that are either common or those students don't think about. While we hold basic graduation expectations for PhD students, the expectations differ based on your career plan. You are highly encouraged to talk to me about your own concerns and plans during the entire period of your PhD.

5 Lab Courtesy

As my students, I hope you are not just someone who is good at solving research probelms, but also someone that others want to work with. You might argue that why I need to care about others' feelings as long as I can finish my work. Well, here are reasons why: (1) nowadays in research, it is rare someone can finish everything themselves. Most work is more or less interdisciplinary. That means, you will likely collaborate with others. (2) Talking with others usually spark excellent research ideas. (3) A good relationship with others will always speed up your work. Thus, in this section, we will talk about courtesy in graduate school and research in general when you interact with others.

5.1 Department Admins

I cannot emphasize enough that everyone should be nice and grateful to our department staff. They are precious and essential to keep our department function smoothly and make your graduate life easy and pleasant. You will interact with our staff on so many things during grad school: course registration, tuition/stipend administration, grant administration, PhD prelim/qual/defense planning, reimbursement, participant payment, facility report, etc. This is a really long list, from which it speaks for itself how important our staff are. They have a very heavy workload and are generally underpaid. Our lab cannot function at all without our staff members. I usually joke (not really a joke though, I am quite serious) that: can our department function without our faculty? Probably. Can our department function without our staff? Absolutely not.

Thus, again, everyone of us should be nice and grateful to our staff (why won't you??). If our staff email you for some information or update, I want you to reply them as soon as possible. If our staff ask you for some help, I encourage you to do so if you are able to. If our staff send you rules regarding department logistics (e.g., kitchen and fridge usage), I require you to follow. I encourage you to communicate with our staff if you have problems or questions about your grad school logistics. They are very nice and always ready to help. Please give them some time to reply your emails. I would send a reminder if there is no reply for one week, unless there is some emergency (e.g., you have a deadline soon, in which case, you should have contacted them earlier).

5.2 Emails

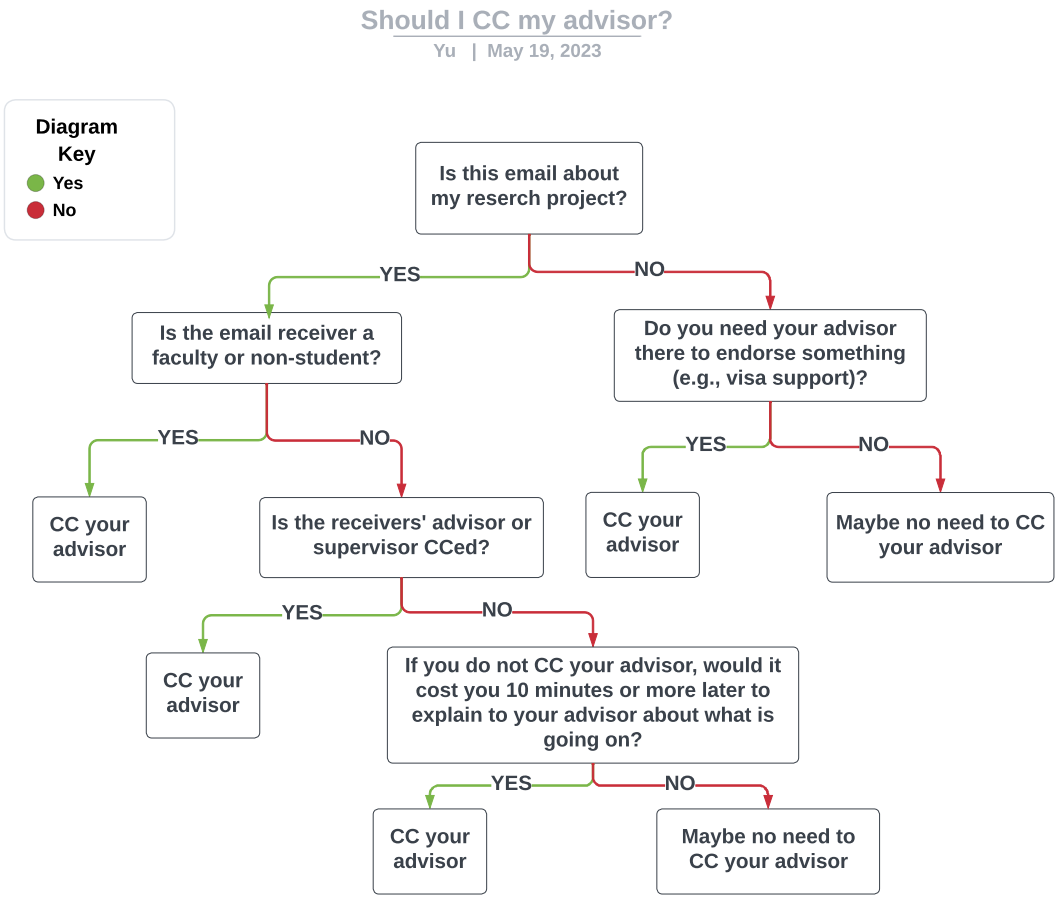
I realized a lot of students (yes, way more than you think) do not really know the courtesy of emails in academia. Those courtesy may sound trivial, but please trust me, it is important. How important is it? It can save you tons of communication effort (also, cause you tons of chaos, and unnecessary mental burden) and easily decide if you can get a position. And of course, it impacts others' impression about you, all the time. It is so often for me to hear other faculty complain about students' emails. I want my students learn how to write and reply to emails properly.

- When you email someone for the first time, I suggest you start your email with *Dear*. Then based on the person's title, you should use *Prof., Dr.* accordingly. The worst start of an email is a single "Hi, ". Situation may differ over time. For example, I email Prof. Stefanie Forrest with "Hi Steph" now, because I have know her so many years and she told me to call her Steph instead of Prof. Forrest. But I used "Dear Prof. Forrest" years ago when I first talked to her over emails. It is never wrong to call someone with the proper titles. If they don't want it, they will tell you. For the content, especially in the first email, you will want to briefly introduce yourself a bit and then start clearly describing the purpose of your email.

- **CC and/or BCC**. It may sound surprising to you that many students don't know how CC and BCC work in emails. However, that is probably one of the most important things about email courtesy. CC is usually used when "you want someone to notice the communication is happening, and that person can jump in when they want to (but they don't have to)". When you email another faculty/collaborator about your project, **you should always CC your advisors and even the other main team members of your project**. First, it is confusing to the other faculty when they receive this email from you but without your advisor CCed: does your advisor know it? Should they contact your advisor about the update? Who is your advisor? Is this official? Is it about collaboration? Second, it is almost always inappropriate to keep the main contributors out of the loop of communication. BCC is when you don't want the email receivers see who else receive the email. But BCC will not track the replies (people BCCed can only see the first email unless BCCed again specifically).

  I understand sometimes students are worried about spamming their advisor's inbox. And sometimes students want to show independence (that is great!). Both are great considerations. You just need to also consider communication cost. Here I made a decision tree with simple rules I follow when I was a student:

- By convention, you should give others one week to reply your email in academia. If no reply after one week, please politely send a reminder.



5.3 Group Communication

Mattermost Everyone in my group should have been asked to set up your Mattermost account. We will use it as our real time communication channel especially for group events. You should check it everyday and get a mobile app on your phone. But for special occasions, we will also use Emails.

Spoken Language One great thing about our lab is, we have students from multiple countries and cultural backgrounds! It is excellent to learn about each others' values and cultures. I understand we have different mother tongues (which is awesome). Considering we are in US and most of us aim to get a job here after graduation and it is important to develop your speaking skills in English, etc., please speak English in group discussion :) As a non-native speaker, when I was a student sharing office space with my lab mates, my rule of thumb is: speak English with my Chinese friends when others are in the same room. But feel free to speak your own language when there are only you and your friends :) I am sure everyone has similar experience before that others were speaking a foreign language you don't understand around you – that feeling sucks... Let's not make our lab mates feel the same way:)

5.4 Group Support

In my group, we want to support each other. One of the important activities to show your support is to help others improve their important presentations including (1) paper presentations for a conference and (2) PhD prelim/qual/defense presentations. Sometimes, we will also ask you to proof read others' papers

before submission for feedback. I require everyone to show up in presentation practice if you can. During the presentation, please make notes and share your notes in the discussion.

Presentations are one of the most important activities in academia to present yourself to others. When you stand on the stage and give a presentation, you represent yourself, our group, and even Vanderbilt. Please make sure your presentation is well prepared.

Our group conducts many human subject studies. For those, we usually need to run some pilot experiments to verify the design or test the UI. You should try your best to participate in those pilot runs or just simply walk through a survey and provide the feedback for the design (e.g., report a bug/typo).

5.5 Group Lunch

I am willing to pay out of my own pocket to support group lunch for my students. I personally believe it is important for group morale. But sadly, I won't have time to order food for you every week. Thus, I want my students to volunteer and schedule for lunch ordering themselves.

If it is your turn to order lunch (thank you!), please send a message on Mattermost-lunch at least one day before the group lunch in case others have diet restrictions. If you are not the the student ordering the lunch, it is your responsibility to message the student in charge about (1) if you will attend the group lunch and (2) what you want to order for yourself. **If the student in charge did not receive a message from you before the deadline they set up, we assume you will not be there and will not order anything for you.** However, faculty have the previledge here of "I won't tell you if I will be there, just order something for me :) " We set up this rule because it happened several times that we ordered food for the group, but only half showed up due to travels but did not inform the student in charge.

5.6 Group Gathering

Similar to group lunch, we will get student together sometimes to have some fun! For example, we will go hiking, play board games, celebrate Chinese New Year, and even a group retreat in the summer! I will cover the group expenses for you. Again, because it is worth it to keep a good group morale (and my awesome students deserve them):) All PhD students will be invited, but none of those activities are compulsory. Sadly, due to the space and my own budget, we may not be able to invite your guest every time. I will specify for each event.

5.7 Undergraduate Mentoring

I encourage my PhD students to mentor undergraduate researchers, especially if you aim for a faculty position after graduation. If you want to, let me know. At Vanderbilt, we have many outstanding undergraduate students looking for research experience and I will connect you with some of them.