

# Group Policy Manual

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## The Vura-Weis Lab

Department of Chemistry - University of Illinois at Urbana Champaign

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If you are reading this -- welcome! You are now an official member (or a potential one!) of the Vura-Weis Lab (VW Lab) in the Chemistry Department at the University of Illinois at Urbana-Champaign (UIUC). The biggest question you likely have is: "Now what?"

## **Section 1 – Being Open about Motivations and Constraints**

First, it's good to note the motivations, goals, and constraints of everyone in the group. As a graduate student, you want to do meaningful scientific work, advance your career, work in a supportive environment, and be respected by the scientific community (other grad students here, the professors here, and scientists outside UIUC). You also hopefully have a rich personal life outside the lab, which includes the constraints of family/personal obligations, financial pressures, health issues, etc. As a PI, Josh has similar motivations and constraints, and his motivations are almost always aligned well with yours. He took this job as a professor because he wanted to do meaningful scientific work, which includes both the research output and the mentoring of students. His role as PI is to set the general direction for the group by considering long-term goals, to write grants to keep the funding coming, to guide the aims of your specific project, to provide specific advice on your research strategy/actions, and to help you write papers and give presentations. He also needs to make sure the needs of each student are balanced with the needs of the whole group, and with the long-term goals of the group.

Instrument maintenance plays a large role in this group. All the work towards maintaining the instruments will ensure you will be able to collect data relevant to your project. You will be expected to regularly work with other group members on the instrument and teach younger students how to use the instruments. In some cases, a project might require high investment of time up front for instrument development with payoff farther down the road in data and papers. You will also have to help help other people with beamtimes, and should expect that other people will help you. Experience building and maintaining an instrument provides valuable technical and interpersonal skills, both of which are highly valued by future employers.

A successful and well-rounded graduate degree requires balancing research (publishing papers, instrument maintenance, group responsibilities, etc.), professional development (committees, volunteering, etc), and departmental requirements (TA assignment, ORP, literature seminar, etc). All of these factors need the proper balance: if you spend all of your time helping other people in the group, you won't have an intellectually coherent thesis, but if you spend too little then the group falls apart. If you spend too much time on student committees then your research will stagnate, but if no one spends any time on them then the department falls apart. In balancing their time, the student must consider that both the TA assignment and the research grant are their sources of funding. This balance should be maintained by communication between the PI and the student about satisfactory progress toward their degree. Ultimately this balance should be determined by the student's career goals and should be discussed with the PI. Future employers will value some combination of technical know-how, leadership, ability to propose original research, and ability to communicate scientific concepts, etc. The PI may advise the best way to achieve this combination and recommend if joining the JVV group will allow for the student to develop it.

This document is our best attempt to provide policies that support the right balance so that everyone is successful. The #1 piece of advice we can give you is: **communicate**. Not every situation will be covered within this document, but every situation can be improved with effective and compassionate communication.

## **Section 2 - Joining the Group & General Expectations**

When you get to Section 3 (*Research Expectations and Progress*) you will get a better idea of what you should be doing, and the *Appendix* contains important publications for you to read. However, before all that we'd like this document to acquaint you with the climate of the VW Lab, with that of graduate life in general, and to act as a source of guidance to help you navigate the many experiences you will have in your time here.

To that end, you should begin by introducing yourself to everyone in the lab. Get to know them and their projects. By the end of Year 1 you should be able to describe in a couple sentences what each person's project is and what their current challenges are. Each person has their own unique training and expertise that you can avail yourself of. We are all happy to help.

You have been assigned a provisional desk in another lab, but you should soon secure a place in our rooms, either CLSL A228 or A122. Equipment such as computers can be obtained for free from the campus surplus warehouse (1801 South Orchard Street, Urbana 61801). If you have any questions, just ask.

The following are some general expectations of students centered on working hours and days off (vacation, sickness, leave of absences, etc). Note that these guidelines are based on what is needed for you to write a great thesis and get your next job – no one is tabulating your hours or counting your vacation days. Details on research and teaching expectations are listed in Section 2.

*Remember: none of this matters if you wreck your mental, emotional, and physical health! Graduate school is supposed to be a challenge, but it's not supposed to be unhealthy.*

### **Work Hours**

- ❖ Students should work from 50-55 hours per week of actual productive time. Any less than that and you won't produce a strong thesis, and if you go much more over a sustained period you will burn out, get sloppy in lab, lose all your creativity, and be miserable. During each day, 4 of those hours should be within 9am - 5 pm so that other students can find you. Generally, students work 6 days a week, but if you work most efficiently in 5 long days that is fine.
- ❖ You will almost certainly have to come in on weekends for particular experiments since we try to run the laser 7 days per week.

- ❖ The 50-55 hour guidance is a long-time average. If you are doing a multi-day laser experiment, you should spend as much time in the lab as possible: this may be the best the laser behaves for the next six months so get the data while you can. Then you should balance that with a long weekend, shorter days, or even a day off in the middle of the week.
- ❖ If you are on a team that goes to a user facility such as the APS or LCLS, your team will have to work very long hours – a typical beamtime allocation is “9AM-9PM, Mon-Weds”. Sometimes there will be 24-hour shifts, so you will be part of a rotating shift schedule (someone works 9-9, someone 12-12, someone 4-4, etc).
- ❖ Working from home is acceptable from time to time, but the student should post this in the #out-of-office slack channel.
- ❖ Joint students should discuss with both PI’s how their time should be spent working in each lab. See the section on “Joint Students” in the Communications guidelines section for more details.

### **Time Off (Vacation, Illness, Etc)**

- ❖ To maintain a productive lab full of happy students, the vacation policy relies heavily on both the flexibility in the rules as described below and honesty from the student on when they need to take time off.
- ❖ The department policy is that students get 24 days of PTO per year, which they can distribute as they see fit (vacation, half days off, etc). In addition, there are 14 or 15 federal/university holidays per year. PTO rolls over from year to year.
- ❖ Students are encouraged to use their vacation each year as it has been shown that breaks improve well-being and productivity. Though to give international students sufficient time to travel, rollover of vacation days from year to year is allowed.
- ❖ Graduate students in the Department of Chemistry are allowed 13 sick leave days per academic year. Students are encouraged to take the day off or work from home in order to prevent the spread of sickness to their labmates. Similarly, time taken off for medical appointments or treatment should not count toward vacation time. If the absence is just a few hours during the day, notification is not necessary.
- ❖ Family emergencies and bereavement leave do not count as vacation time.
- ❖ Taking a day for mental health is highly encouraged if needed, and is considered a day off for sickness. The student need not elaborate further to the PI.
- ❖ In general, Josh doesn’t need or want to know why you are taking a sick day, and tries to never ask (he might slip while trying to be polite and say that he hopes you are feeling better).
- ❖ In inclement weather, if it’s unsafe to come into lab, you can choose to either catch up on literature/data analysis/etc, or take a PTO day.
- ❖ Before taking vacation, the student should notify the PI of their absence a reasonable time beforehand. 2.5 times the duration of the vacation is a good rule of thumb (e.g. if taking a month off, give at least two 2.5 months’ notice; if taking 2 days off, give at least a week’s notice). This helps the group with long-term planning and lets Josh plan ahead if there is a grant renewal due while you are gone. You should block out the days on the

group schedule Google calendar so people know not to expect you in lab. No notice needs to be given about weekend time off – just manage that time yourself.

- ❖ Don't worry about this notification guidance in emergency situations: for example if a family member is sick and you have to fly home on short notice, just buy your tickets and go, then email Josh from the airport. Hopefully you can shut down reactions/turn off the laser/etc, if needed you can also ask for help from the group on Slack to do these things.
- ❖ As described in the graduate manual, students are allowed 2 weeks of paid parental leave. They are also eligible for an additional 10 weeks of unpaid leave. It is expected that your time back in lab may be less regular after you come back from parental leave, so please work with Josh to figure out how to manage the new balance. He is realistic about the impact the baby will have on your research and wants to support both your career and your family life.
- ❖ For leave of absence, refer to the department graduate manual Section 6.1.5 (accessed here: <https://chemistry.illinois.edu/academics/graduate-studies/graduate-manual>)

### **Working Late Hours**

- ❖ When working in lab when there is no one else from the lab in the building (late at night or on a holiday) the student should carefully consider the safety of performing such an experiment alone. If the student decides to work, the best practice is to notify another lab member that they are working and request that lab member check up on them at some frequency. Simply notifying another student is not best because if something happens to the student, no one would know until the next day. If the student feels unsafe traveling home late at night after an experiment, the student is encouraged to use a rideshare service – Josh will reimburse.
- ❖ Non-routine reactions or procedures should only be performed with others in the room with you. What is defined as “non-routine” will depend on each student's expertise. Working with pyrophoric substances MUST be done with a safety buddy.
- ❖ The student should be aware of when they can no longer work safely due to fatigue. To prevent catastrophic and dangerous situations, students should always consider putting in place failsafes when designing instruments or protocols. Note that this doesn't happen just late at night: if you hit a wall at 3PM, go home and sleep.

## **Section 3 - Research Expectations & Progress**

General university and department expectations for major program milestones (such as literature seminar and preliminary exam) can be found in the department graduate manual. Here is some more group-specific information about how we handle these milestones and research in our group:

### **Literature Seminar (Second Year)**

- ❖ A student taking the literature seminar (lit sem) class should present to the group once before their actual presentation. This will allow group members and Josh to give helpful

feedback in a friendly environment. Discuss with the group meeting scheduler for determining this practice date once the lit sem date has been finalized. A common amount of time to spend is half-time for two weeks and full-time for two weeks (possibly spread out over a longer time)

### **Preliminary Exam (Third Year)**

- ❖ Similar to lit seminar, students should go through their preliminary exam (prelim) presentation with the group before their examination.
- ❖ Before making slides, Josh will have a meeting with you to discuss your prelim “readiness” and the things to focus on for your presentation. For example, this can be early in the summer before a fall prelim. Expect to spend 2 months preparing for your prelim, which includes studying fundamental aspects of your research area and preparing your slides and paper.

### **Original Research Proposal (Fourth Year)**

- ❖ While the original research proposal (ORP) a department requirement and thus should be taken seriously, it is particularly important if you are interested in becoming a professor. Expect to spend about two months half-time working on ORP, with the first month to gather ideas and the second month more focused on writing. You should schedule a practice talk with the group, and feel free to discuss your topic with Josh.

### **Choosing/Assignment of a Research Project**

- ❖ In order to graduate, you first must have a project! In the first year, Josh assigns an introductory project, typically a building or computational project, designed to help your overall research project. Before joining the group, you should have a general idea about your main project goals (ie: determination of intermediate metal-centered states in a specific biomimetic catalyst) and required steps along the way (ie, synthesizing the compound, building a liquid delivery system, getting a ground-state, transient data collection). The more you have your project planned out prior to joining the group or starting the project, the better.
- ❖ First-year students will get a senior student mentor (fill in what this means...)
- ❖ We will develop a 2-week Boot Camp (perhaps the first two weeks in January) where students will learn how to take OTA and tXUV of Fe<sub>2</sub>O<sub>3</sub> or a similar molecule.
- ❖ Building projects tend to be difficult and don't always work out. Along with this project, you will get a joint project with an older student mentor. This will allow you to still obtain publishable data, assist in the preservation of group knowledge, and help you learn a lot in the process through hands-on learning.
- ❖ Joint students should refer to the Joint Student section to determine a project with both advisors.

### **First Year Goals**

The first year of graduate school can be tricky to balance with classes, TAing and research. You should be dedicating 10-20 hours per week to either your research or learning how to acquire / analyze XUV data. General tasks you should learn include:

- ❖ If you are a laser person, shadow as much as you can in the laser lab. Learn how to tune harmonics, maintain the XUV spectrometer, and run the labview program. If there is any alignment in progress, do your best to shadow/help out. Make it a goal to be able to run ground state by yourself by the end of the summer of your first year.
- ❖ Become familiar with CTM4XAS and Kaili's simulation software. Be able to reproduce the simulation of  $\text{Fe}_2\text{O}_3$  and attempt to simulate the compound you will study in your project. For example, simulate a series of LS  $\text{Fe}^{II}$  spectra in an  $\text{O}_h$  crystal field. Try to note how changing 10Dq and the Slater-Condon parameters affects the spectrum. This will prepare you for actual simulations down the road.
- ❖ Read chapter 4 in DeGroot's book on ligand field multiplet theory. This will help you understand the origin of M-edge transitions in the simulated spectra.
- ❖ Learn how to prepare thin film samples. If you will be using TED in the future, do some shadowing and try a run with an older student present. If you expect you won't be able to TED your samples, learn how to make polymer or spun-coat films. If you will be doing solution phase measurements, learn how to use the liquid delivery system.
- ❖ If your project is mostly synthetic, become familiar with your lab space and brush up on necessary techniques (reactions, methods of purification, analysis techniques, etc). If you are a synthetic joint student, you will probably look to the expectations of your other group for first-year productivity.
- ❖ As mentioned, the things listed above are all general knowledge you should have to succeed in the group. You should also spend time reading up on your individual project and come up with a plan of tasks once you can use the instrument by yourself.

### **Measuring research success and evaluating research progress**

- ❖ It is difficult to quantify graduate student success. Despite this challenge, acquiring publishable data is the most commonly viewed metric of success and requirement for graduating. There is not a strict required number of publications to graduate, but 2-3 first author publications are typical numbers for our previously graduated group members.
- ❖ In order to stay on track and be "successful", there will be biannual meetings with Josh to discuss more generally your research progress. This is a good time to zoom out and think about how you are doing as a graduate student and how you are going to successfully finish your PhD. Along with covering progress made the past half year, there should be a discussion on general goals for the rest of the year, graduation and career plans.
- ❖ Obviously, projects don't always work out and there is no way to make all your endeavors successful. That's just life! However, getting scientific results is a requirement for graduation and you don't want to be here 10 years working on an impossible project. If you are not close to getting publishable data within a year of working on a project, a conversation should be had during your biannual meeting with Josh (or another time if necessary) to determine whether to keep pushing or switch projects.

- ❖ If you are miserable on a particular project, please tell Josh so we can find one that you will enjoy.
- ❖ Everyone has times during their Ph.D. when nature just conspires against them and nothing works for a few months. During these times, focus on Process, not Product: did you put in an honest day's worth in lab, communicate with your colleagues about the challenges, and make reasonable decisions even if they didn't produce your desired result? If so, you have done well and should go home with your head held high.



## **Section 3 - Communication & Conflict Management**

### **General Communication**

- ❖ For general communication within the lab, email and Slack will be used to avoid cellular network issues. Any communication related to data should be either be emailed or uploaded on Box. In case of emergency, you are expected to call or text your colleagues and Josh.
- ❖ Most of the group communication is on Slack – you should plan to check this at least daily on days you are working. Other group members may ask for help/advice, so this is part of your responsibility to the group. Many group members turn off the Slack notifications in the evenings so they can separate their work and home lives.
- ❖ Before starting a collaborative scientific project, it is recommended to have a conversation with Josh to decide authorship and acknowledgements to avoid future conflicts.
- ❖ All of the projects in our lab involve multiple people, which means all papers have multiple authors. Sometimes on a particular paper, the 2<sup>nd</sup>/3<sup>rd</sup> authors may have done a significant amount of work, so there is a potential for conflict in the authorship order. Josh's goal is for this to integrate to fairness over the entire Ph.D., and he will discuss the decision process openly with all students.
- ❖ Because lab notebooks are not only important for record keeping but also for patent applications (in the future), you are expected to follow following lab notebook organization guidelines in the lab:
  1. Laser notebook : For laser alignment and laser maintenance
  2. Data collection notebook (XUV and tUV/Vis separate notebooks): Data collected from the laser lab
  3. Synthesis notebook : You are expected to thoroughly note down your experiments in your lab notebook and leave it when graduating.

### **Weekly Check-Ins**

Typically each week, there will be a one-on-one meeting with Josh that is scheduled to run for 30 minutes (though usually takes less time). This is an opportunity to regularly update Josh on your research outside of group presentations (more to follow on that!), address any questions or concerns you have regarding your research, and keep track of your own progress as you are going along in your PhD. To prepare for this meeting, upload a word document (in your folder in the Box folder for weekly updates) listing your goals for the past week, what you've actually done (goals accomplished, in progress, what went wrong, etc), and what your new goals are for the next week. You are strongly encouraged to include items like data figures, synthetic schemes, and other visual aids. Remember that Josh is trying to keep track of ~10 student projects, so it is your responsibility to frame your work for the week in the context of your long- and short-term goals. Don't assume that he remembers the details of a plot you showed him two weeks ago – repeat data if necessary to give the proper context. You should upload this document even if Josh is traveling/out sick/etc so that he can still keep up with what you're doing. Please see the appendix for an example weekly check-in.

## Group Meeting Presentations

In terms of group meeting presentation, you are expected to prepare and present your research progress for ~45 minutes. Vura-Weis lab group meetings are usually on Friday from 2:00 PM - 4:00 PM, after the laser planning meeting in CLSL A122 at 1:30 PM. If you are not presenting, you are expected to upload one check-in slide before the laser planning meeting. Group meeting is a great chance to learn from your colleagues and troubleshoot your scientific problems, so you are expected to be there unless you have permission from Josh (e.g. circumstances where you can miss the meeting might be collecting transient data, emergency situation, vacation et.al). Please refer to (Box/Group Meetings) to see proper group meeting presentation and group update format. Students generally switch between lit presentation and research presentation. If your research is moving fast, feel free to just do research presentations.

The audience should consider it their responsibility to ask questions in the group meetings.

## Conflict Management

- ❖ Remember that once you join the group, you are part of a team! Please refer to Grad College Code of Conduct section on how to treat other students in lab:  
<https://studentcode.illinois.edu/article1/part2/1-201/>
- ❖ You don't need to be friends with everyone in lab, but you do need to be professionally supportive of everyone's work.
- ❖ Communication is necessary to properly voice issues. It's better to deal with a problem right away than to sit in frustration and let it fester.
- ❖ In case of interpersonal conflict within the group, you are expected to:
  - First try to resolve the issue between yourselves. Be direct: what did the person do that harmed you, and how would you like them to act in the future? In general we assume that everyone's intentions are good but that we all make mistakes.
  - If the first point does not resolve your problem, you are expected to talk to a colleague you are comfortable with who can act as a mediator.
  - If student to student, student to mediator does not resolve the conflict, you are expected to talk to Josh. If you are not comfortable talking to Josh (or have a problem with Josh), Tepora Su'a has agreed to be a neutral third party.
- ❖ Josh will check in approximately monthly with you to ask about your well-being, e.g. stress level, optimism/pessimism about projects, etc.
- ❖ If someone in the group is having a really rough time, please let Josh know. He will keep your confidence and can step in to give the person more support.

## **Joint Students**

As once pointed out by Prof. Girolami, a jointly supervised student should ideally work in the intersection of the interests of all supervisors. This is generally easy to achieve at the beginning of a project and easy to maintain when the project is proceeding as planned. Difficulties can arise if the original plan for project turns out to be untenable and/or the participants in the project no longer share a common vision of the project. To guard against these issues and, if issues do arise, to mitigate their impact, we make the following recommendations:

- ❖ Before joining the groups, the student, Josh, and the other supervisor(s) should prepare a written document summarizing the project(s): what is to be learned, what are the concrete deliverables, what are the resources required, and what is the timeline of the project. It is not important whether it is the student, one of the professors or all the professors who write(s) the document. However, it is of critical importance that all parties to the project read, understand and agree with the points contained in it. This is also an excellent time to lay out general expectations for the student (particularly important when groups have very different work hours, time-off policies, responsibilities, and the like).
- ❖ Apportioning of student salary should be determined through a consensus of the advisers.
- ❖ Establish good communication with each PI. This can be accomplished by emails, individual meetings, group meetings, or whatever method you and each PI prefer to use.
- ❖ Ensure there is good communication and understanding between all people (you, Josh, and the other PI). Each adviser may have specific tasks or projects for the student to carry out that is not directly related to the shared project. The amount of time and resources committed to these tasks should be determined through a consensus of all parties to the project. It's recommended that you arrange a meeting with both PIs in attendance at least once every term (spring, summer, fall) and more if needed to ensure that (1) everyone is on the same page when it comes to research and PhD progress, (2) re-establish or update expectations and research goals (joint and separate projects), and (3) clarify and solve any issues or misunderstandings with the project(s). A written agenda or report is helpful for keeping the discussions at these meetings focused.
- ❖ If the project turns out to be untenable, a consensus among all parties to the project should be reached on how to salvage or redirect the project. If that turns out to be impossible, the student, in consultation with the professors, should decide whether to continue the work in any one group on a possibly different project, switch to an entirely different group or exit the program.

## **Section 4 - Professional Development**

### **TA Expectations**

- ❖ Students are generally expected to TA their first 4 semesters if they do not have external funding. The number of semesters may differ depending on the amount of funding available per project. Students will not be expected to TA after their second year is

completed except in extenuating circumstances (need for an upper-level TA, unexpected funding shortage, etc). The department takes this very seriously and any past-second-year TAing has to be approved at the Department Head level.

- ❖ Students are expected to fulfill their TA responsibilities. Students should have a conversation with Josh about balancing teaching and research hours.
- ❖ If you don't TA for 4 semesters due to a fellowship but want to get that experience for your future career, you can ask to TA in later years. Please document this desire with an email to Josh in years 1/2. The department will make TA slots available for such purposes but they need evidence that Josh isn't abdicating his responsibility to support his students. Students interested in teaching are encouraged to pursue a teaching certificate through the UIUC Center for Innovation in Teaching & Learning ([CITL](#)).

### **Seminars & Volunteering**

- ❖ Students are encouraged to attend area seminars and other relevant seminars through the university and should consider this time as work. Students may attend departmental events and graduate students committee events and consider this time as work.
- ❖ Many group members serve on student committees or volunteer for department-affiliated organizations like the Bonding in Chemistry Day Camp. The time spent on these can be both personally fulfilling and good for your career, but you should be conscious of the time taken away from research. Do a clear evaluation of your research productivity before and after joining these groups and balance things accordingly.
- ❖ Students working for an internship on campus (eg. Consulting or Office of Technology Management) or event planning (like ISMS) should have a conversation with Josh about work hours.

### **Job Seeking & Applications**

- ❖ Students should have a conversation with Josh before they start the job application process to discuss balancing work and job hunting.
- ❖ When students are applying for jobs (roughly 1 year out from graduation), it is reasonable to spend around half a day per week on the search, but this is also the time you are most productive in lab so be sure the job search doesn't slow down your efforts doing the things that will get you the job!
- ❖ Students traveling or taking time during work hours for interviews do not need to consider this vacation time.
- ❖ Students should give Josh two weeks notice before a letter of recommendation is due, should not be shy about reminding him as the deadline approaches..

### **Conference Attendance & Expenses**

- ❖ Students should consult with Josh before applying to a conference.
- ❖ We aim to have students attend at least one conference by the end of their 3<sup>rd</sup> year, subject to having enough solid results to present.
- ❖ All conference funding will be provided. Students should apply for external conference funding (ex. WCC or department awards).

- ❖ Students should be frugal traveling for a conference. If multiple students are attending the same conference, they will be expected to coordinate travel and lodging to reduce costs. The responsibility of coordinating expenses should be split evenly among all the students attending and Josh will oversee that the responsibilities are split fairly and fulfilled in a timely fashion.

### **Grant Writing & Fellowships**

- ❖ Students interested in writing grants should express that interest to Josh.
- ❖ During the “status of the lab” yearly/bi-yearly meeting, students should share any research or grant ideas they have.
- ❖ Students are encouraged to apply for fellowships and should consult with Josh before applying for a fellowship.
- ❖ Students with fellowships should work to meet the fellowship requirements each year and submit any necessary paperwork to renew their fellowship.

## **Section 5 - Lab Organization**

### **Group Responsibilities**

- ❖ Constant Roles (rotating every 6 months excluding LSOs):
  - **Laser maintenance:** keeping track of issues or updates needed for the laser (using box note and/or white board), cleaning the laser lab, advocating for laser maintenance at planning meetings
  - **Laser planner:** runs laser planning meeting and scheduling laser plans, updating group laser and group meeting calendar
  - **General maintenance:** updates and acquires general lab supplies as needed (eg sticky pads, silicon nitride membranes, etc). Does NOT acquire specific chemicals
  - **TED Maintenance:** keeps track of TED, advocates for cleaning/fixes, acquires supplies
  - **Lab safety officer(s):**
    - **General/chemical LSO:** maintains and updates safety standards in the lab space (outside laser lab), checks eye washes/fire extinguishers/etc, attends monthly LSO meetings, proctors annual safety review, resource for safe lab practices in the group
    - **Laser LSO:** maintains and updates laser glasses, keeps track of laser safety training and logs, resource for safe laser practices in the group
  - **Social chair:** solicits ideas for group activities, coordinates group activities
- ❖ Temporary Roles:
  - **Conference coordinator:** when the majority of the group is attending the same conference, one of the attendees will be elected to serve as the point person. They will coordinate with the attendees (and the IMP office as necessary) on registering for the conference, hotel reservations, and travel plans.

## Running the XUV Instrument

While details about the technical aspects of running the XUV instrument are available in the SOP and will be learned as you shadow people in the lab and run your own experiments, the following statements are general guidelines for efficient and respectful instrument usage.

- ❖ Follow appropriate lab and laser safety practices when operating the laser. More details are available in the respective safety information and SOPs.
- ❖ Leave it in a condition usable for the next person. This may depend on what experiment you ran (sample chamber vented? Ne or Ar harmonics? Pump-probe path alignment?) and what the criteria is for the next experiment.
- ❖ ***Communication is critical!*** Update the next person in line for the instrument on what the status of the laser (quality of harmonics, data, etc), whether you are running over/under time, etc. Make sure you are filling out all appropriate information in the laser notebooks, logs (Excel files on the computer(s)), and other documentation properly.
- ❖ Division of tasks should be fair; tasks that fall under this are things such as cleaning the grating, aligning the NOPA, and cleaning the TED

## Safety & Cleanliness

- ❖ Safety information is described in more detail in the Vura-Weis group lab safety and chemical hygiene plan (please see the red binder located in the downstairs office or on the Vura-Weis group Box folder). It is expected that all lab members comply with the safety standards outlined within this plan and undergo the required training (DRS and group-specific) prior to performing experiments in the lab space.
- ❖ Standard operating procedures are available in the red safety binder (location above) and on the Vura-Weid group Box folder.
- ❖ The lab space should be kept organized and cleaned to the extent that there are no safety hazards present and items are easy to locate. If you use the lab space (chemical or laser), make sure to clean up after yourself!
- ❖ Deep clean of the chemical lab space will occur approximately one to twice a year or as necessary (determined by the group).
- ❖ Promptly and clearly communicate any changes to how things are being done to the lab. This may mean providing an update at the laser planning or group meetings,
- ❖ Laser training must be taken prior to using the instrument! There are three levels of expertise within the group: basic, intermediate, expert (see the Laser Safety and training documentation)
- ❖ Make sure to discuss with your labmates whether they will be here on “soft holidays” like President’s Day, or the time between Christmas and New Years, where some people will take the day off and some will not. Consider whether it is safe to do your given experiment if there are fewer people in lab.

## Purchasing

- ❖ Information on how to purchase items in the group is available in the Purchasing & Vendor Information document on the group Box folder.

## **Section 6 - Exit Policies**

When a group member graduates, as a PhD or as a Master, the group member's contributions should be celebrated in a group event. The group social chair should take the initiative in organizing this event. The group event may be a shared meal, a potluck, a board games party or any other appropriate activity.

Regardless of how a group member exits the group, steps should be taken with cooperation from the departing group member to ensure that any useful skills or knowledge developed by said group member will remain available to the group.

- ❖ Before the group member physically leaves (ideally as soon as an exit is planned), the supervisor, the departing group member and any in house collaborator (e.g. co-authors on papers) should meet and agree on what needs to be documented in writing and what needs to be passed on in training.
- ❖ To ensure completeness, the written documents should be read and understood by the professor and continuing group members.

If graduating with a PhD is no longer an option or if a student no longer intends to continue in the PhD program, the student may consider graduating with a master's degree.

- ❖ The requirements for a master's degree by coursework are enumerated in Section 4.3.1 of the Dept. of Chemistry Graduate Manual.
- ❖ The coursework and documentation requirements for a thesis master's degree are enumerated in Section 4.3.2 of the Dept. of Chemistry Graduate Manual. Research requirements should be determined through discussion between the student and the professor, possibly in consultation with the program coordinator.

If a student wishes to switch to a different research group, the student should follow the procedures described in Section 5.2.14 of the Dept. of Chemistry Graduate Manual. In addition, the student should ensure continuity of skills or knowledge (see point two) before exiting the group to the best of the student's ability.

If the professor finds a student's work performance unsatisfactory, the professor will provide a written, detailed account of

1. how the student is not meeting expectations and
2. what the student needs to change or start doing to meet expectations.

Presenting this written account to the student will initiate a 90-day probationary period for the student to implement these changes. This probationary period is distinct from the post-termination 30-day period described in Section 5.2.14 of the Dept. of Chemistry Graduate Manual. If the student has not shown satisfactory progress after the 90-day probationary period,

the professor should notify the student in writing of the causes for their dismissal from the group. The professor should proceed as described in Section 5.2.14 of the Dept. of Chemistry Graduate Manual.

## **Appendix**

- I. List of Useful Papers to get started on research
- II. Links to all of the stated resources above (i.e. that are on Box or the Department of Chemistry Graduate Manual)
- III. University of Illinois Resources (Counseling Center, ARC, Grad College)