

Guironnet Group Manual

Updated 06/20/2023

1. Introduction

The research in the Guironnet group takes on the challenge of implementing recent advances in homogeneous catalysts into continuous processes. Doing so with a particular emphasis on polymer and fine chemical productions.

2. Workplace Expectations

Responsibilities of the PI:

The PI is available for all students to meet with. Damien keeps his office door open as much as possible, so that students can stop in and talk to him at any time. Students can also send him messages over Teams, Slack, or email and he will respond if he is available. Throughout your graduate career, he will help students find fellowships, internships, and career opportunities to the best of his ability.

Expectations of students:

Students are expected to maintain productivity regardless of what hours they work (40 hours minimum per week). While Damien does not have strict required hours, it is required that whenever you work, there is someone else in lab. Students are expected to be in the lab between 10am and 4pm. If you are late or have to leave early, inform Damien. If you leave in the middle of the day, (i.e. for lunch) leave a note at your desk with the time you will return. Since each person's project is different, there is no requirement for daily reaction quota, but as a former graduate stated: "one reaction a day, keeps Damien away".

Students are expected to apply for any fellowships that they are eligible for. Damien will assist in all aspects of fellowship applications. Some fellowships that Guironnet Group members have applied for in the past, as well others in the department, include:

- NSF Graduate Research Fellowship
- Ford Predoctoral and Dissertation Fellowships
- NIH F31 Predoctoral Diversity Fellowship
- Soros Fellowship for New Americans
- American Association of University Women Fellowship
- HHMI Gilliam Fellowship (must be nominated by the department)
- Hertz Foundation Fellowship
- NDSEG Graduate Fellowship
- DOE Science Graduate Fellowship

Every graduate student will train at least one undergraduate at some point during their graduate career.

Receiving feedback from Damien: If a student requires feedback from Damien (checking written documents/slides/posters, etc.), they need to have the first full and finished draft ready for him to review at least 4 weeks before the due date. *However*, do not hesitate to ask for feedback before this deadline. In fact, asking for feedback, *multiple* times, *before* this four week deadline will make Damien very happy. Damien genuinely

enjoys being a part of the revision and feedback process with his students, but this becomes more of a chore and mentally taxing on Damien when students send him things close to the deadline. Thus, failure in honoring this four week deadline will result in no feedback from Damien for that particular item.

If the four week deadline is not met **in the case of an exam** (e.g. quals, or prelim), the students' committee will be made aware that the student did not give enough time for their documents to be reviewed by Damien. This would significantly increase the risk of failing the exam.

If the four week deadline is not met **in the case of a conference** (e.g. review and approval of final presentation/poster) then the student will have to withdraw from the conference and will not be able to attend.

Time away from the laboratory:

Disclaimer: The policies on time away from lab within the Guironnet Group are based on the graduate college policies.

Vacation Policy: As per the graduate college, each student is given 21 days of vacation per year. Email Damien to ask for vacation at least 2 weeks in advance. If applicable, get someone to cover for your group job or group meeting if you are scheduled to present. See vacation checklist (Share Drive → Group Files → SOP) for a checklist of closing down your lab area before leaving.

Personal Days/Sick Days: If you are sick, you are strongly encouraged to not come to lab, especially if you are contagious. Notify Damien by email or text message. We don't want an illness going around the lab or going home to group members' families. If a longer medical leave of absence is required, a conversation with Damien will be had to discuss logistics. The graduate college states you have 6.5 days of sick leave per year (based on the half time employee status of graduate students).

Emergency situations: If an emergency arises where you need to leave town for family or other situations, please go. Just inform Damien by Email or text message.

Holiday Policy: Federal holidays (New Year's Day, Juneteenth, July 4th, Thanksgiving, Christmas Eve, Christmas, New Year's Eve) are not required attendance in lab and most people will not be in lab. These do not count towards vacation days. Holidays that the University is closed, such as Memorial Day, Labor Day, Martin Luther King Day are also holidays and students are not expected to work. However, Damien will work during these days and likely scheduled meetings as well (especially the recurring meetings). Just inform Damien that you are not going to participate in this meeting because it is a holiday. Religious holidays (unless it's extended like a vacation) do not count towards vacation days.

Adverse Weather: If the lab is closed due to adverse weather, an email will be sent out. If you know that this could be a possibility, please make sure to plan ahead of time.

EXCEPTION: If the lab is closed, but you have left a reaction going that needs to be dealt with, you are responsible for going into lab to take care of it.

Personal time during work hours: It is highly encouraged that work hours overlap with Damien's schedule (7-5:30) as much as possible. Therefore students are expected to be in the lab between 10am and 4pm. That being said, it is acceptable for a student to take

personal/mental health time during the day, such as going to work-out. Additionally, if a student needs to work in a different location on a paper, or some other desk-type work, they are allowed to leave to work at a library, coffee shop, etc. For any instance of a student being away from lab during normal work hours, they should post a note on their desk with the time that they will be returning. The student is also required to ensure that there are at least two students left in the lab, so that no one is working alone.

Professional development activities:

All students are encouraged to participate in professional development activities and to serve on committees if they choose to do so. So long as research productivity is not hampered by participation, Damien will remain supportive of these activities.

Students may participate in an internship after their prelim if they choose to. Damien will support this so long as you can demonstrate why you want to do the internship, and what you plan to get out of it.

Attendance at conferences, scientific meetings, etc.

Damien will support sending you to at least one conference, but it is the student's responsibility to identify the conference and ask Damien. Students should apply for travel awards as much as possible. If you have money for a conference from a fellowship, continuously remind Damien of this. He can forget these things.

While there is no set timeline for students to attend conferences, it is more based on your results. You will go to a conference if you have results to present. After prelim/when you are looking for a job is typically a good time for conferences.

Before you can book your travel/hotel for a conference, Damien *must* approve your final slides/poster that you are planning to present. This means that your presentation materials should be ready at least 2 months before the conference dates. There may be some exceptions on a student-by-student basis (e.g. slides also must be approved by an industrial collaborator) but these instances will be discussed between the student and Damien when necessary.

3. Expectations of progress towards degree

Feedback mechanisms:

Damien participates in the annual reviews conducted by the department, but they can take a while to get back. These are typically very honest reviews of your progress.

In general, feedback is given during group meetings and subgroup meetings. Damien will try to give feedback during other times if he decides it's needed. During meetings, students should make a note to address ideas/questions Damien expressed during your last group meeting.

To get feedback from Damien for written documents/presentation slides the first full draft must be given to him at least 4 weeks before the due date. Failure to do so will result in no feedback from Damien for that particular document/presentation.

Departmental requirements:

Qualifying Exam (ChBE): During the second half of the second semester, students should start preparing for their qualifying exams. Damien is willing to discuss contents and

storylines with students. If you would like Damien's feedback on your written document or your presentation slides you need to give him your first full draft at least 4 weeks before the respective due dates.

Literature Seminar (Chemistry): In addition to the departmental requirements for the literature seminar, figures are allowed to be taken from literature as long as they are properly cited within the presentation. Damien is willing to discuss possible topics and give recommendations. If you would like Damien's feedback on your written abstract or your presentation slides you need to give him your first full draft at least 4 weeks before the respective due dates.

Preliminary exam (All): In addition to attending one practice talk, Damien will agree to review and give comments on your paper and slides if the first full draft is given to him at least 4 weeks before your prelim date. Further details about what is required in your presentation will be covered in individual meetings with Damien, but generally Guironnet Group members present their most promising projects and try to tie them together in a single story. Damien will help you identify the committee members. All students are expected to pass their prelim during the first semester of their 3rd year. You are responsible for working with the IMP/ChBE Office to schedule your prelim. The time that you take away from the lab to work on your prelim requirements (paper, slides, reading) should be discussed with Damien while you are planning out your prelim. **If Damien feels a student is not ready for prelim, he will have a conversation with the student during the summer before prelim.** If you fail your prelim, Damien will have a conversation with you to discuss what you need to do to pass the second time, or what course of action you should take if you want to take a Masters instead. If you would like Damien's feedback on your rewritten document or updated slides, the 4 weeks before the due date timeline still applies.

Original Research Proposal (Chemistry): Students should follow the departmental requirements for the Original Research Proposal. Students may talk to Damien once very generally about their idea to see if it would be a good topic for ORP. If you would like Damien's feedback on your written proposal or your presentation slides you need to give him your first full draft at least 4 weeks before the respective due dates.

Generally speaking, most Guironnet Group members are willing to share their presentations/papers for departmental requirements with younger students as examples.

Requirements for scheduling a defense (All):

Average time to graduate? When should a student feel ready to defend? Can students work on a thesis during normal work hours? What format should students follow?

This depends on your future goals. Ideally, Damien would like everyone to be able to graduate in 5 years. If, for example, you want to go into academia, it is possible to stay longer in order to get more papers out. The PhD is what you make it. Once you know what type of job you want after graduation, a conversation with Damien should be had, particularly at the end of your fourth year. This conversation will outline what goals you have, and what you need to accomplish before graduating. If you would like Damien's feedback on your written thesis or your presentation slides you need to give him your first full draft at least 4 weeks before the respective due dates. There may be some exceptions to this timeline which will be discussed between Damien and the individual student.

Once you begin applying for jobs, let Damien know where you are applying so if he gets a phone call, he knows what it is about and is prepared.

4. Lab Resources/General policies

Meetings:

Group Meetings: Group meetings will occur once a week on Mondays from 3:30 to 5:30 pm in RAL 117, unless a change has been specified via email. One group member will present a recent (within the last year) publication. Another member of the group will present a research update. The research update should range between 30 min and 1hr, including an introduction, relevant data, and plans for future work. This should be, for the most part, treated as a high level representation of your recent work since the last time you presented research in group meeting. For students who have not yet completed their prelim, the research update should be treated as a practice and build-up for their prelim.

The group meeting schedule can be found in the group share drive under Group Files > Group Meeting Schedule. The LSO is in charge of making the schedule of group meeting presenters. Any changes that the LSO makes to the schedule that affects when students are to present will be announced via email. If a student is unable to present on an assigned date, it is up to them to find a lab mate to switch their presentation date with and update the schedule with their lab mate's knowledge. Both parties need to be aware of their new presentation dates.

Individual / Subgroup Meetings: Damien will meet weekly with every group member. This can be an individual meeting, or a subgroup meeting based on the topic of research. The frequency of the meetings can be discussed. Students are expected to prepare slides containing their latest results. No formal introduction/motivation is required but students should include a slide summarizing the experiments they did the previous week. A slide on future experiments should also be included, but the discussion usually results in more/new future experiments.

Seminars: All students are required to attend **ALL** relevant seminars (ask Damien), including literature seminars. They are also encouraged to attend seminars in other areas.

Special Group Meetings: Special presentations will be scheduled to practice for the following departmental requirements: qual exam (ChBE), literature seminar (Chemistry), preliminary exam, and thesis defense. **Qual Exam/Lit seminar practices** will be scheduled approximately one week before the seminar date and will comprise of one half of the group meeting. The presentation will be given without any interruptions in order to time the length of the presentation. Feedback will be given afterwards. **Prelim practices** will be scheduled approximately two weeks before the prelim date and will comprise the entire group meeting time block. It is common practice for a second practice without the PI to be scheduled at the group's convenience. The practice will be held similarly to the real prelim, where questions are asked as they come up. **Thesis defense practices** are scheduled approximately one week before the defense date, if the student wishes to have one. Additional practice presentations for conferences, job interviews, etc. can be held if a student wishes.

Purchasing:

Stockroom: Whom ever has the stockroom group job is responsible for purchasing the most COMMON lab supplies (gloves, vials, pipets, etc.) and solvent refills. This student should ask Damien which CFOP he wishes to use for common lab supplies. If stock room purchases are project specific, students should use the CFOP that correlates to their project.

Chemicals and other supplies: Any chemical or item not purchased in the stockroom will be purchased through the SCS Reaction website (chemicals and other approved vendors). All purchases are required to have a quote and require approval from Damien before purchasing. Students should place their own orders for chemicals that they need for their project through SCS Reaction.

Data/sample management:

Research samples are expected to be labeled at the very least with a student's initials, notebook number and a notebook page corresponding to that product.

Lab notebooks, either hard copy or electronic, are to be kept by every graduate student. These should be legible and understandable for anyone in the group. Lab notebooks are the property of the University and should be left with Damien upon graduation.

Hard data (spectra, excel sheets, etc.) should always be saved on a server accessible from any computers, so that it is there for future students. Make sure to back-up your computer on a very high frequency basis. Damien uses OneDrive (office package) for most of his documents. The sharedrive can also be used as a backup location and Dropbox is also possible.

Group Equipment and Responsibilities:

The upkeep of various lab equipment is the responsibility of the group, and each piece of equipment is assigned to a group job. Group jobs are decided at the end of the first group meeting after the first years join groups. Group jobs consist of the following:

Rotovap: Student maintains and upkeeps the Rotovap and any accessory to the Rotovap (vacuum pump, chilling system, etc.). This student is not responsible for chilling the water for the Rotovap. If a student needs to use the Rotovap, they are responsible for getting an ice bottle themselves and turning the pump on to flow water through the condenser.

GPC: Student(s) maintains the GPC in a working condition, refills solvents as necessary, and upkeeps the accessory components to the GPC (separation column, filters, autosampler, etc.) and trains as needed.

IR: Student maintains the IR in a working condition, including testing the instrument routinely. They are responsible for giving access to new users, and training users as needed.

GC: Student(s) maintains the GC, including, but not limited to, helium tank replacement, column maintenance, changing the septum, maintaining the wash and waste vials, pump maintenance, training if needed.

Glovebox: Student(s) maintain the gloveboxes in working condition and are in charge of ensuring that the gloveboxes stay clean. It is not the responsibility of student(s) to clean

up after their lab mates. Student(s) are also in charge of restocking shared items when supplies are low. They are responsible for training users as needed.

Solvent System: Student maintains the solvent system in a working condition and is responsible for refilling solvent containers. They are responsible for training new users as needed.

Lab Safety Officer (LSO): Student attends all LSO meetings and trains all incoming students on Guironnet Lab safety policies. The student also coordinates with DRS for the annual safety audit and provides an annual safety refresher to the group. Additionally the student is in charge of making the group meeting schedule and ensuring safe practices are being adhered to in the lab.

Eye Wash/Fire Extinguishers: Student(s) are responsible for turning on the eye washes every other week to ensure proper function and to check the fire extinguishers once a month. Both activities should be recorded on a log sheet.

Liquid nitrogen/argon: Student maintains the liquid argon tank in 260B and the liquid nitrogen tank in 260C. The student is also responsible for placing orders for a new tank(s) when empty.

Chemical and bulk ordering: Student places all orders for chemicals and supplies from outside vendors.

Inventory: Student maintains the chemical inventory record of the lab using the departmental system. Student also coordinates with DRS for chemical reconciliations and any other inventory questions.

Storeroom: Student maintains stocks of commonly used supplies, chemicals, and solvents. The student is also responsible for checking the 'stock room' white board and making the corresponding purchases. It is important to make price comparisons on uncommon purchases because sometimes the stockroom is noticeably pricier.

Waste: Student submits all waste requests to DRS.

NMR training: Student trains all new students (undergraduates and graduates) on use of the NMR instruments. This includes two training sessions.

Website: Student maintains the group website by updating publications and group members, in addition to other general website maintenance.

Weekly Lab Cleanup: All students in the group are given an area of the lab that should be cleaned weekly on Fridays before that person leaves the lab.

The document where group jobs and lab cleanup are assigned to students can be found in the share drive under Group Files > Guironnet Lab – Group Job List.

5. Interpersonal Relationships

Expectation of Ethical Conduct:

Scientific integrity: All students are expected to conduct scientific research in an ethical manner and comply with all ethical conduct policies of the University of Illinois. Unethical conduct, such as fabrication of results, can not only seriously jeopardize your career, but also breaks a trust Damien has placed in each of us as graduate students. It is important

for the PI to be able to trust that we are bringing honest and accurate results and data to him for publication. If you suspect another lab mate is participating in unethical conduct, you should share your concerns with Damien. Under no circumstances will he reveal that you expressed concern.

Workplace harassment and discrimination: All students are expected to maintain a workplace free from harassment and discrimination, in accordance with the policies of the University of Illinois, the Department of Chemistry and the Department of Chemical and Biomolecular Engineering. If you witness, or are a victim of, these behaviors, please consider reporting to Damien or any other PI, all of whom are mandatory reporters, or the Title IX coordinator. As a mandated reporter, Damien is required to report any sexual harassment or abuse he is aware of to the Title IX coordinator. If this makes you uncomfortable, there are counselors on campus who can maintain your anonymity.

Unacceptable behaviors include, but are not limited to; unwelcome sexual attention, inappropriate touching or comments, intimidation, bullying, judging, making unwelcome jokes, etc.

Discrimination based on race, gender, religion, sexual orientation, disability, physical appearance, or any other identifier is strictly forbidden.

Students should support those who report violations of this policy. **Any form of retaliation is not acceptable and will be investigated.**

Lab communication:

Email: Email is used as the primary source for major group announcements from Damien and when information is forwarded between students and/or Damien. This is the main form of communication between Damien and the whole group, and it is also used primarily by the department for announcements.

Teams: Damien requires students to get Microsoft Teams, which is available through your university account. This is his preferred method of communication with individual students and students are also welcome to message Damien through Teams.

Group Me: The Guironnet Lab uses the Group Me app for all general discussion and communications. New students will be added to the group chats. It is group policy for the first student in lab to post to the group chat that the lab is open and the last students in the lab to post that the lab is closed.

Slack: The Guironnet Lab does have a slack channel...

Phone: If you need to call Damien due to an emergency, or because it is something you feel is best communicated over the phone and not by message, just call him (919-360-8540). If you need a response for general things from Damien and have not received a response on Teams or email, just call or text message him.

Every lab member's phone number is posted above the trash can near the large glove box antechamber in case you need to get a hold of someone.

Conflict resolution:

Authorship: Authorship in the Guironnet Lab is defined as anyone who had a significant intellectual contribution to the paper, whether that be by conducting experiments,

designing experiments, or coming up with the project idea, as well as other types of contributions. The order of authorship should be discussed as early as possible amongst all those involved in the paper. In general, the authorship order will be determined by the level of contribution. If there is an instance where moving a student up in the order significantly benefits them, without harming others', and all other authors agree, this can occur.

Collection of primary data without any analysis or workup does not contribute authorship, such as collecting GPC data for other lab members. For undergraduates, synthesizing any necessary starting material, including ligand, constitutes authorship.

For complicated authorship situations, a discussion will be had on a case by case basis. If you ever have concerns about authorship, that should be a conversation had one-on-one with Damien.

Interpersonal conflict: If there is an interpersonal conflict between two students, they should first attempt to solve it amongst themselves. If this cannot be done, then a discussion with Damien should be had to address the issue.

If a student has an issue arise between themselves and Damien that they don't feel comfortable directly addressing it, they should talk to Professor Gregory S. Girolami (Director of Graduate Studies of Chemistry) and/or Professor Charles Sing (DGS of CHBE)

6. Lab Safety

Students are expected to maintain safe laboratory practices at all times, including the use of appropriate PPE when in laboratory spaces, not limited to safety glasses, appropriate clothing, lab coat, etc. For more information about safety, refer to the lab safety officers, appropriate safety documents, or the following resource:

- o Division of Research Safety (DRS): www.drs.illinois.edu,

All students are required to go through **ALL** safety training before they are allowed to do any lab work. This includes, but is not necessarily limited to:

- o DRS Safety trainings
- o SCS Safety Exam
- o Lab safety checkout with the LSO

7. Practical Considerations for New Students, AKA "Words of Wisdom from Older Students"

Reactions:

- Don't scale up a reaction by more than 3x the original scale
- Work-up protocol: Keep all washes for new reactions and get NMR data for each
- Be aware of what your fellow lab mates are doing. It's a great way to catch up and be familiar with your lab mate's work!
- If you don't know how to do something, reach out to Damien or other fellow lab members

- Don't fear failure! You will learn and be better next time

Communications:

- Download Microsoft Teams to your computer. Damien uses Teams primarily for student communications if he sees that you are online. The reverse is also true, if you see that Damien is online, reach out to him if needed.
- Download the GroupMe app. This is the lab's primary way of communicating with everyone about immediate issues in the lab.
- Check email frequently as well. Department emails go out throughout the day, and sometimes these include free equipment/chemicals.

Group meeting:

- We always do group business before getting started – this is a great time to remind others of lab policies that haven't recently been followed, etc.

Equipment repairs

- DO NO LEAVE BROKEN EQUIPMENT SITTING IN THE LAB! If something is broken/not working properly, get it fixed. This is Damien's number one pet peeve. He does not care if you break something, but if you just leave it broken in a drawer, then he will get mad.
- For broken glassware, a few things should be considered before taking it to the Glass Shop:
 - o How many of that type of glassware do we have? If it's over 6, then it's probably not worth fixing.
 - o Is it a specialty glassware, like a Schlenk tube? If yes, it should get fixed.
 - o Is it in a fixable condition? If it's completely shattered, it's not fixable. If a valve is broken, talk to the Glass Shop.
 - o Is it your Schlenk line? Get it fixed.
- For vacuum pump repairs, first make sure it's not just that the pump needs an oil change. If an oil change doesn't fix the problem, take the pump to the vacuum repair shop in Noyes Lab.
- For more complicated equipment repairs, it's usually a good idea to call the manufacturer to see if they can diagnose over the phone before talking to Damien.

Victory Dance

- Every student is required to create a victory dance for when they succeed in the lab.

Guironnet Group Manual Agreement Form

I, _____, acknowledge that I have read through the Guironnet Group Manual in its entirety, and I agree to follow the policies laid out therein. I understand that if I break a policy contained in this manual, I will accept the consequences for such actions as determined by the PI, or by the department.

Print student's name

Date

Student's signature

PI signature