

May 26, 2009

TO: Chemistry Research Participants and Faculty
FROM: Stephen Sieck
SUBJECT: Seminars and Logistics

Research seminars will be held this summer at 8:30 AM on Wednesdays in the Chemistry classroom. Each of you will be asked to present two seminars; the schedule is as follows:

June 10 – Billy Hart-Cooper, Emily Jobe, David Satzer, Hannah Key, Julia Stewart, Laura Mertens, Stephanie Cheung, Grant Hisao

June 17 – Chris Williams, Shuming Chen, Matt Doers, Ivy Hsieh, Elizabeth Martin, Gabe Johnson, Tianqi Zhang, Alex Littler, Andrew Mullins

June 24 – James Phelan, Steve Sando, Claire Humes, Michael Tylinkski, Desi Romero, Brenton Maisel, Shyam Deshpande, Solomon Akesseh, Kenji Yoshino

You should plan your seminars carefully in consultation with your faculty research advisor. The first one should take no more than 15 minutes, with 5 additional minutes for discussion.

The first seminar should address the question, "What is the history and nature of the problem I am attacking and what approaches will I use?" You should attempt to describe your research project in some sort of broader context, explaining why the studies that you will be carrying out will be significant outside of the narrowly focused objectives of your project. Background information from your reading and study of the literature directly and indirectly related to your problem should be an important component of this first seminar.

The second seminar will be presented in a poster session format during the 10th week of the program. Detailed instructions for preparation of your poster and for presentation of the poster session will be provided and discussed as scheduled below:

July 8 - General session to discuss preparation and presentation of posters and final reports

July 30 - Poster presentations and final ceremonies (lunch at a local restaurant)

Questions are the life-blood of any worthwhile seminar, and you should ask them when appropriate, expect them and respond to them easily as they arise when you are the speaker.

You may want to prepare visual aids for your presentations such as transparencies or PowerPoint slides of data, spectra, or reaction sequences. To facilitate presentations using powerpoint, we have created a sub-folder in on the storageserver under PROJECTS/CHM/SummerPresentations 09 for your use. Save the final version of your presentation there no later than 8 am Wednesday of your talk, with a clear unique name (perhaps YOURLASTNAME_GRINCHEM_PROPOSALTALK)

Picnics:

Besides the science picnic in early June, we will have two chemistry picnics, one on **June 15**, the other on **July 8**. The locations and times for the picnics will be announced.

Some other matters of general interest:

1. **Keys** - Mr. Princer and Mrs. Campbell have building, drawer, and lab keys which you may keep for the summer and turn in at the conclusion of your project.
2. **After Hours Work** - The normal working period for summer projects is **8-5 PM** and you should plan to do your work during that period. **July 4** is a holiday. The stockroom will be opened at 8 am in the morning and will be locked at 5 pm. If you need anything from the stockroom for work after hours, make sure you get it before the stockroom closes. Your P-card enables you to be in the building after closing hours with the following restrictions:
 - a. The only acceptable purpose is to pursue your own research in the library or laboratories.
 - b. No persons other than summer research participants may enter the building after hours.
 - c. If you are going to do chemistry, or any conceivably hazardous physical manipulations, you must be accompanied by a "safety buddy" and discuss your plans with your research advisor in advance.
 - d. You should inform your research supervisor of your plans if they are extensive or involve some sort of hazard.
3. **General Atmosphere** – The labs and classrooms are a professional academic environment. For safety reasons, refreshments or food should not be prepared or consumed in the labs (use the seminar room). Please also refrain from importing entertainment such TV's, easy chairs, plants, etc.
4. **Floods** - Please take appropriate precautions against floods from faulty water lines and plumbing facilities. **This is an extremely important responsibility.**
 - a. **Do not** leave flowing cooling water (rotary evaporator, condenser, etc.) unless it is under the control of an electronic flow monitor. The set up must be checked out for wired connections, modest flow rate, and a secure and clean drain.

Water Flow Monitors

Each bench and hood is equipped with a water flow monitor. If any water is left flowing unattended, use the water flow monitor. Mr. Princer or your faculty advisor can instruct you in proper use of the flow monitor.

b. Don't dump solids or paper down the sinks.

5. **Hoods** - The hoods are equipped with sash stops. You may flip a "stop" and move the sash higher, to set up an apparatus, but be sure to lower the sash below that stop when conducting an experiment so that a safe air flow is maintained.

The hoods are variable air volume hoods. Note that a gray box at the top of the hood is connected by a cable to the sash. This senses the position of the sash and adjusts the airflow to maintain a constant air velocity. The meter on the hood indicates the air velocity. *Keep the sash pulled down as much of the time as practical*, having it open only to set up, adjust, and monitor a reaction or apparatus, as this will provide the safest conditions and the least energy use. If the sash is left open at night, an alarm will sound, which can be turned off by closing the sash. An alarm will also sound if the hood has an airflow too low for safety. If that alarm goes off, try to minimize the hazard in the hood and notify a member of the faculty or staff. If there is a spill in the hood or room, the airflow in the hood can be turned to maximum by pressing the red button and setting the hood to emergency exhaust.

Each hood is equipped with a variable voltage controller (to control heating mantles, stirrers, etc.) which controls the bottom-most outlet next to the controller. Hoods contain cabinets for storing flammable solvents, which should be used for storage. Some hoods contain ovens which may be used to dry glassware.

6. **Safety and Accidents** - Student researchers are covered by Workman's Compensation. Accidents causing injury should be reported. You should be mindful of the usual laboratory safety practices as recommended, for example, in Chemistry 210 or 221. Additional details will be discussed at the time of the first meeting.
7. **Library Books and Journals** - Library books should be kept in the library. You may make copies of articles on the copier in the Library.
8. **Computer Search of Chemical Abstracts** – Kevin Engel (ENGELK, 4234), Science Librarian, will provide an orientation session on computer literature searching on May 26 at 1:00 pm in Science 2022
9. **Copying** - Photocopies of articles you need for your project can be made in the science library or Burling. A copy code will be given, and should be kept **confidential and used only for research purposes**.
10. **Equipment** - Please try to keep the general areas and facilities in good shape. If you notice low supplies of a chemical, expendable equipment, printer paper, compressed gases, etc., please report it promptly so that the supply can be replenished. Likewise, please report malfunctioning instruments. Also, please be aware that while some equipment is departmental, there is also a lot of equipment that is owned by a particular research group. As a general policy, you should not "borrow" equipment from a lab without checking it out

with the current users. While there is generally a good spirit of cooperation during the summer, that spirit can be seriously dampened by irresponsible actions.

11. **Breakage** - Please report all significant breakage so that the necessary replacements or repairs can be made.
12. **Gas Cylinders** - Gas cylinders and liquid nitrogen are stored in room 2213 & 2214 and a lock combination will be necessary to open the door. Cylinders contain gases at pressures of up to 2500 psi and are potential rockets. If the cylinder were to fall and the valve break off, gas would rapidly escape and propel the cylinder through even concrete walls. Never move a cylinder without its cap in place. When using cylinders they should always be clamped to a solid surface. Empty cylinders should be returned to the empty cylinder area. If you have any questions about gas cylinder handling, ask your research advisor.
13. **Nitrogen** - Labs are equipped with purified nitrogen gas piped from the stockroom. To use the nitrogen, simply turn on the valve. Use a low flow and turn off the flow when you are finished. Leaving the nitrogen flow on without use can quickly drain the system and ruin not only yours, but the experiments of several people.
14. **Ice** - An ice machine is located on the west end of room 2133 (organic laboratory).
15. **Instrument Use** - Please use the instrumentation properly. If you are unfamiliar with an instrument, please consult with an experienced user. Also, keep the areas around instruments tidy -- properly dispose of your scrap paper, tissues, etc.
16. **NMR** - There will be some general policies concerning the scheduling and use of the Bruker 400 MHz NMR spectrometer that should help to make it more productive.
17. **Vacuum Pumps** - Care should be taken when using vacuum pumps. **Always** wear safety glasses when working around a vacuum system as there is an implosion hazard. You should assume that vacuum traps are filled with liquid nitrogen when using a pump to protect the pump from ingesting solvent vapors (which render it incapable of drawing a good vacuum). Note that if left over more than about 12 hours, the liquid nitrogen will evaporate and solvent vapors will be drawn into the pump, so you must regularly 'feed' the traps. More specific instructions should be obtained from your research advisor prior to the use of vacuum pumps.
18. **Chemical Wastes** - Waste organic solvents should be placed in waste containers in your lab. Wastes are segregated into halogenated and non-halogenated. Each waste bottle has a tag on it on which you should note the solvent you added. (This information is required by our waste disposal firm). Hazardous or toxic inorganics (such as mercury or lead salts) may be placed in appropriately labeled vials. Solid organic waste should be placed in a jar labeled 'Solid Organic Waste'.
19. **Academic Credit** - Academic credit (4) will be awarded for satisfactorily completed projects under Chemistry of Biological Chemistry 399 or 499. Forms for registration are available in the Registrar's Office. **Completed forms must be filed by Monday, June 1 for you to receive credit.**

20. **Stipend Payments** - Student fellowships totaling \$3400 will be paid biweekly. Paydays are every two weeks on Fridays, and checks must be picked up at the Treasurer's Office. Those of you who are living in College housing may have your rent withheld from your paycheck. **The Treasurer's office is in the Old Glove Factory** (on the SW corner of Broad Street and Third Ave.)

21. **Reports and Notebooks** - A final comprehensive report on your project is due to your project director the last day of the participation period of 10 weeks. This should be typed and should be written in the format of a paper for an ACS journal. All faculty have copies of the ACS Style Guide which you may use. The primary record of course should be a hardbound laboratory notebook which is kept up to date daily and is also turned in the last day.