

Group Leader: Dr. Lena Q. Ma

Lab Manager: Dr. Uttam Saha

7/28/2008

- ◆ Dr. Saha and I work hard to make our program a home away from home for everyone
 - We greatly value your being a member of our group
 - Once a member, always part of our group
 - We celebrate everyone's birthdays and we enjoy annual Christmas luncheon
 - ◆ Working philosophy
 - Work hard, play hard and have fun
 - Work hard, more importantly work smart
 - The key to success is communication
 - ◆ The following information is provided to you to help you get started in our group
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1. Dr. Saha is in Charge of Lab Operation

Dr. Saha will manage daily lab operation, and supervise and work with everyone working in the lab. He will be in charge of the following activities:

- ◆ All orderings/traveling
- ◆ Supervision of lab analysis/cleaning/organization
- ◆ Instrument operation/maintenance/coordination
- ◆ Sample analysis and manuscript/report review
- ◆ Implement and maintain NELAC operations.

2. Website for Our Group at <http://lqma.ifas.ufl.edu/>

The website is actively maintained and provides information about our program

- ◆ The "Lab Basic" can be found at <http://lqma.ifas.ufl.edu/publication/lab%20basics-08.pdf>
- ◆ All publications from our group are available as pdf files, and they are arranged by author, year and subject at <http://lqma.ifas.ufl.edu/publication.html>
- ◆ Information on group members is available at <http://lqma.ifas.ufl.edu/researcht.html>

3. Things to do upon arrival

You need to take care of the following after arriving on campus

- ◆ Stop by Dr. Saha's office for information on keys, office and mailbox
- ◆ Stop by Cheryl's office at 108 Newell Hall to take care of your paper work
- ◆ Go to Room G071 in the 2nd floor in the UF Bookstore to get your UF ID for \$15
- ◆ Apply UF e-mail account at <http://gatorlink.ufl.edu>

For international scholars, you also need to do the following

- ◆ Stop by Internal Office at 170 Hub across from McCarty Hall A
- ◆ Apply for Social Security Number if you want to get paid

4. General Expectations For Our Group

◆ Expectation for all group members

- To come to the lab on a daily basis (an 8-hour day is expected during weekdays)
- Please inform me or Dr. Saha when you are unable to come to work during weekdays
- The annual goal for our group is:
 - 1 referred-publication for students and visiting scientists
 - 2 referred-publications for post-doc scientists
- To graduate with M.S., 2-3 publications are expected (the average for our group is 2)
- To graduate with Ph.D, 3-4 publications are expected (the average for our group is 4-5)
- Your thesis will consist of 2-4 publications, i.e. you write papers as you go and you graduate when you have enough publications.

◆ Biweekly lab meeting

- Everyone in our group is expected to attend and present during the lab meeting
- All presentations are done via PowerPoint, which are preloaded in Z-drive (<\\ad.ufl.edu\ifas\SWS\Private\LenaMa>)
- Everyone has 15 minutes to present their research (up to 5 slides)
- File name should show the content of your presentation as well as your name. Please use the format of “*first name-content-month-date-year*”, i.e. Uttam-Pb chemistry-01-01-08.
- Every presentation should include two parts:
 - What has been done *during the past 2 weeks*
 - What you plan to do *during the next 2 weeks*
- You can also present a journal article or other useful information when you don't have sufficient research data

◆ No Foreign Language in our Lab or Office

- Please speak English in our lab or office

◆ Departmental Seminars and activities

- Required to attend and it is an excellent opportunity to learn & interact with others in dept
- Be active in graduate student activities and departmental affairs

◆ Lab Cleaning: keep our lab clean

- Every two weeks: mop floor/wipe & dust counters/clean sinks/organize lab
- It is everyone's responsibility to clean the lab as scheduled
- *Dr. Saha is responsible to make sure lab cleaning is done as scheduled*

5. General Rules of Our Lab

- ◆ **Please provide the following information to Dr. Saha when they are available**
 - Your home *phone number*, *e-mail address*, and *home address* in case of emergency
 - Your *birthday* so we can celebrate the happy occasion with you during our lab meetings
- ◆ **Lab Safety**
 - Read and sign “Right to know” form
 - Learn about “Chemical Hygiene Plan” and “Spill Kits” from Dr. Saha
 - Wear protective glasses/lab coat/gloves
 - First aid/eye wash station are available in/near the lab
- ◆ **NELAC certification**
 - Our lab has been certified by NELAC and Dr. Saha is the QA/QC officer
 - SOPs are available in the lab as well as on the Z-drive (<\\ad.ufl.edu\ifas\sws\private\lenama\uttam\for everybody\final sops>)
 - *For more information, please contact Dr. Saha*
- ◆ **Waste Disposal**
 - Hazardous wastes need to be stored in a special container (see Dr. Saha)
 - Please don't dump soils or chemicals in the drain
- ◆ **Office space**
 - Everyone will have an office/lab space in our group
 - The department also has office space for graduate students
 - Contact Dr. Jawitz at 392-1951 for departmental office space
 - *McC2175 (when not used) and library can be used as a quiet reading place.*
- ◆ **Work Bench/Personal Drawer and Dishpan**
 - To be assigned by Dr. Saha
 - Use your assigned space whenever possible
 - Be considerate of others by not taking too much space and cleaning up your own mess
- ◆ **Good Lab habits**
 - Put things back where they are
 - Close the cabinet doors and draws when done
 - Help counters clear of cluster

6. Working in the Lab

- ◆ **Chemical/Supply Ordering**
 - Inform Dr. Saha in writing if you are using the last one of any supplies
 - Chemicals in the lab are organized in an alphabetical order
 - Labware is stored in labeled draws
 - Please check the Chemical and Labware List before ordering
 - Place orders in advance

◆ Using and Managing Chemicals

- Upon receiving your chemical, please write the *receipt date* on the bottle as well as in “Chemical Inventory”, which is located on Z-drive at <\\ad.ufl.edu\ifas\sws\private\lenama\uttam\for everybody>
- If you open a new bottle of chemical, write the *opening date* on the bottle
- If you finish a bottle of chemical, remove its entry from the “Chemical Inventory”

◆ Conducting experiment

- Always carry blanks and spikes
 - *Never underestimate the importance of proper blanks/controls*
- Run standards at least every 20 samples
- Match the matrices of standards and samples whenever possible
- Digest certified reference materials
- Conduct experiments at least in triplicates

◆ Experimental Records

- Sequence/date your experiments
- Write down your objectives/procedures/expected results
 - *Thinking long and hard before experiment is critical*
- Label your samples with experiment #/content/date/initials
- Record data on data recording paper and then transfer them onto a computer
- Record all observations in your lab notes (qualitative/quantitative)
 - *Always write down even the smallest things/observations*
 - *Never underestimate the importance of miscellaneous information*

◆ Sample/Standard Storage

- Keep stock solutions at room temperature
- Keep all your samples/standards in a refrigerator except for these acid-digested samples
- Check/discard outdated samples/standards periodically
- Samples can be discarded once your manuscript is accepted
- *Dr. Saha will discard old samples on a regular basis*

◆ Standards

- Label chemical content/date/initials
- Make fresh standards daily for ppb level analysis
- Store your standards in a refrigerator

◆ Working in other labs

- Please inform Dr. Saha if you are working in other labs
- It is expected that we pay for supplies and instrument usage
- Please know the cost before using instruments outside our lab

7. Lab Skills/Knowledge

◆ Filtration

- Many different ways
- Disposable/non-disposable
- Filter sizes: membrane/non-membrane

◆ Pipettes

- Different types
- Learn pipetting skills from Dr. Saha if needed
- Clean pipettes especially after pipetting acids
- Calibrate pipettes and record calibration in the notebook before use (see Dr. Saha).
- Please perform and record the balance calibration before you calibrate pipettes
- *Dr. Saha will check pipettes on a regular basis*

◆ Dish Washing Procedures

- We have an analytical dishwasher in McC 2142 to wash dishes
- Remove labels
- Rinse out soils/put in detergent bath (6-24 h)
- Rinse/put in acid bath (6-24 h)
- Rinse with tap, deionized and double deionized water
- Put in an oven to dry
- Place dishes to their allocated drawers/All drawers are labeled
- You are responsible for your own dishes
- Do your dishes in a timely manner
- *Dr. Saha will be responsible to make sure dishes are done on a timely fashion*

◆ Weighing

- Two different scales are available
- Calibrate the balance and record your calibration before use
- *Dr. Saha will check balances on a regular basis*

◆ Lab Ovens

- One for drying dishes
- One for drying soils or determining soil moisture
- One for drying chemicals and plant tissues

8. Use of Lab Equipment/Computer

◆ Instrument

- Please read manuals
- Check with Dr. Saha before using
- Need to log in and report problems to Dr. Saha
- Clean *before and after* use

- ◆ **Truck use/IFAS van reservation**
 - Please reserve our truck through Dr. Saha
 - Call Jenai at 2-1963 to reserve IFAS van (8- and 16-passengers)
 - Pick up the key at 2002 McC-D with your driver license
- ◆ **Computer Usage**
 - Don't change settings on shared computers
 - Periodically perform "Disk Cleanup", "Disk Defrag" and "Scan" (at least monthly)
 - Priority: research > class > personal (personal use of computers is discouraged)
 - Check your personal e-mails and visit personal web sites in evenings/weekends
 - *Please back up your files monthly. See Dr. Saha for USB storage disk*
- ◆ **Z-drive can be accessed from all computers from home or work**
 - All computers can access the Z-drive ("LenaMa" folder) at "\\ad.ufl.edu\ifas\sws\Private\LenaMa" after logging in using your Gatorlink account.
 - Everyone will have a folder in your first name (i.e. Uttam).
 - Place your files in your own folder.
 - Drop your PowerPoint presentation in the folder of "Z-Lab Meeting\2008" for lab meeting
- ◆ **Working from home using VPN**
 - You can use VPN to gain privilege granted to UF computers from home, i.e. doing literature research and accessing many databases.
 - Please visit http://net-services.ufl.edu/provided_services/vpn/ for installation.

9. Useful Information on research

- ◆ **Getting started on your presentation**
 - Learn how to give an effective presentation at my web site at <http://lqma.ifas.ufl.edu/publication/effective%20presentation.pps>
 - One slide per minute
 - Remember the first few slides really well
 - Take deep breaths to calm down
 - Don't read slides and don't use long sentences
 - One picture is worth thousands of words
- ◆ **Reference manager: Endnotes**
 - Keep track of and classify all your references
 - Work with Word directly and can download references directly from online
 - Strongly encouraged to use for managing your references
- ◆ **Literature search**
 - The main web site for UF library is at <http://www.uflib.ufl.edu> where you can search for articles, journals, books and databases owned by UF.
 - You can also use my web site at <http://lqma.ifas.ufl.edu/sos6262/usefullinks.html> or click "[Useful links](#)" from my web site where you can find commonly used databases ([Literature search](#)) and journals ([Environmental Journals](#)).

◆ **Useful software in our lab**

- Web of Science: <http://isiknowledge.com>
- Elsevier Science Direct: <http://www.uflib.ufl.edu/ejtitle.html>
- On line dictionary: <http://www.m-w.com/>
- On line chemical information: <http://chemfinder.camsoft.com>
- Numerous links from my web site: <http://lqma.ifas.ufl.edu/Usefullinks.HTML>

◆ **Useful software in our lab**

- EndNotes (managing references)
- Surfer (drawing)
- ArchInfor and ArchView (GIS)
- SAS (statistics)-Dr. Saha is knowledgeable about the software
- MINTEQA2 and V-MINTAQ (modeling and graphing of chemical speciation)

◆ **Available instrument on campus on fee basis**

- Interdisciplinary Center Biotech Research: <http://www.biotech.ufl.edu/instrumentation.html>.
- Particle Engineering Research Center: <http://perc.ufl.edu/servicecenter/default.asp>
- Major Analytical Instrumentation Center: <http://maic.mse.ufl.edu/>

10. Useful Information on publication

◆ **Getting started on your publication**

- Learn how to write manuscript at: <http://lqma.ifas.ufl.edu/publication/good%20manuscript.pps>
- The easiest way to write a paper is to *follow* a good paper of similar topic;
- Writing a paper is like to tell a story, so you want to tell a new one in an exciting way;
- You start with your data and figure out what is new and exciting;
- You don't have to discuss all data, only the important that helps you to make points.

◆ **Authorship and author affiliation in publication**

- Senior author:
 - Who conducts the research and writes the paper.
 - There are two exceptions:
 - When one leaves our program and has no interest to publish. In that case, whoever writes the paper will become the senior author;
 - When I design the experiment and contribute >50% in writing the manuscript, I will become the senior.
- Corresponding author: I will be the corresponding author for publications of our group.
- Co-authors:
 - Those contribute directly to the research. Please give credits where credits are due.
 - If Dr. Saha is actively involved in your research and makes substantial contribution to your paper, please give him the credits as a co-author.
- Author affiliation:
 - UF address should be listed for research conducted in our lab.
 - Current affiliation of authors can be indicated using current address. See <http://lqma.ifas.ufl.edu/Publication/Singh-06b.pdf> for example.

◆ **Instrument Information for publication**

- Arsenic Speciation Cartridge (Metal Soft Center, Highland Park, NJ). In addition, you can use the following reference: Meng, X., G. P. Korfiatis, C. Jing and C. Christodoulatos. 2001. Redox transformations of arsenic and iron in water treatment sludge during aging and TCLP extraction. Environ. Sci. Technol. 35: 3476-3481.
- Hot Block Digestion System (Environmental Express, Mt. Pleasant, SC; EPA Method 3050b).
- Graphite furnace atomic absorption spectrophotometer (240Z, Varian, Walnut Creek, CA).
- Atomic absorption spectrophotometer (220 FS with SIPS, Varian, Walnut Creek, CA).
- ICP in the Soil Testing Lab (Thermo Jarrell Ash ICAP 61-E, Franklin, MA).

◆ **Method Information for publication**

- Gonzaga et al. (2006) at <http://lqma.ifas.ufl.edu/publication/maria-06b.pdf>
 - Soil characterization and chemical analysis
 - Greenhouse setup and condition
 - Statistical analysis
- Singh and Ma (2006) at <http://lqma.ifas.ufl.edu/Publication/Singh-06b.pdf>
 - Hydroponic system and fern room information
 - Arsenic speciation and P analysis
- Srivastava et al. (2005) at <http://lqma.ifas.ufl.edu/Publication/Mrs-05a.pdf>
 - Antioxidant enzymes
- Tu et al. (2004) at <http://lqma.ifas.ufl.edu/Publication/Tu-04a.pdf>
 - Composition of half-strength Hoagland-Arnon solution

◆ **Using Word efficiently**

- Use “Insert” → “Break” → “Page break” to separate pages instead of numerous “enter”;
- Use “Tab” to indent a paragraph and “View” → “Ruler” to indent many paragraphs using the space setter on top of the document. This is especially useful dealing with references;
- Use “Auto text” for repeated use of words or phrases. You have to define the auto text first. For example, select the words (e.g. University of Florida), then “Insert” → “auto text” → Type “uf” → select “Add” and then “Ok”. Next time, you want to type University of Florida, just type “uf” and then press “F3”, “University of Florida” will appear in place of “uf”;
- Define your own **tool bars** with those you use most often. Select “Tools” → “Customize” → “all commands”. Then you can drag those commands to the top or the bottom bars on your screen. You can delete a command by simultaneously pressing “Alt” and dragging the command off the bar.
- Add “Line numbers”: from “File” → “Page setup” → “Layout” → “Line numbers” → “add line numbers”;
- *When copying figures to Word, use “paste special” and select “Excel chart object” to retain data associated with the figures. This is **required** for all publications and reports.*
- Always use “spell check” before sending the report/manuscript out.
- Leave “Check grammar” to minimize grammar errors. When unsure about a phrase, type the “phrase” in Google, you will see examples of how they are being used. This is especially helpful deciding whether or not to use “the” or “a”.

- **Other useful Information**

- ◆ **For your information**

- Get UF ID from the Ritz Union at 392-2-8343
- IFAS computer help desk at 392-4636 or send e-mail to help@ifas.ufl.edu.
- IFAS computer network help at 392-5180
- University computer help desk at 392-4357
- IFAS statistical consultation at 392-1941 x221 or visit www.ifasstat.ufl.edu

YOUR COMMENTS AND SUGGESTIONS ARE ALWAYS WELCOME.