Information for Newcomers

I. **General**:

The lab exists to

- facilitate the education and career development of students and trainees.
- promote scientific discovery that satisfy intellectual curiosity and benefit the society.

The value we emphasize:

- honesty
- critical thinking
- friendship and cooperation

II. **Safety and Responsibility**:

The first training should be safety in the lab. Make sure you know

- Where is glove, white coat, emergency kit,
- What to do if you have a chemical spill
- The biosafty hood is the areas that is set aside for handling potentially harmful chemicals.
- How to respond if there is a fire or chemical spill accident.

Responsibility – do no harm, to other people or the environment.

- Make sure you put bio-hazardous waste into the red bag – which will be incinerated.
- Be mindful of clean areas and "dirty" areas. For example, the electrophoresis area should be considered as "dirty" because of the likely contamination of EB. You should not move equipment from there to the regular benches (clean area) without cleaning it first.
- Be considerate when you are handling potentially harmful chemicals. For instance, when you take the gel to the shared facility room to take a picture, make sure you do not touch door nobs with the glove that has touched the gel.
- Minimize the waste as much as you can, but NOT compromise the quality of the experiment. If you have to redo the experiment, a lot more waste will be generate. So **the best way to minimize waste is to minimize useless experiments by thinking thoroughly to optimize the design and by being meticulous in execution**.

III. **Scientific Conduct.**

III.A) - Notebook.

- For each day you are in the lab, there should be a dated entry in your notebook, otherwise you missed a day.
- For each experiments, there should be explanation of
    - **Why** you are doing this experiments.
    - **Design** of the experiments (related reference should be cited; supporting info such as maps etc. should be pasted to the opposite page.)
    - **How** is the experiment carried out. If you are following a protocol, you need to past the printed protocol in your notebook at least for the **first** time. In later times you can refer to the protocol in your notebook (e.g. "according to protocol

on page ##"). If there is substantial change of the procedure, either intentional or unintentional, paste the updated protocol or record how you deviated from the protocol at particular steps.

- **Results**. Table or figure summarize all the data obtained. Save some space in your notebook if you anticipate additional results, such as pictures, will take some time to obtain.
- **Conclusion and discussion**. An experiment without conclusion is not finished. Even if it totally failed, you have to discuss what you think is the cause of the failure.

III.B) – Storage of reagents and samples.

- All Eppendorf tube boxes need to be **labeled on the outside** that is visible without pulling the box out from the shelf.
- All tubes need to be labeled on Top to remind you what it is. Detailed information including name, concentration, date, etc. need to be written on the side and sealed with transparent tape.

IV.) Computers and lab information systems (see Appendix I)

Appendix I.
Zhou Lab Computer and database system set up.

I.) Computers:

a.) Internet server (**IRER**; Ubuntu 12.04 OS) – for hosting websites and running Linux/Unix programs. Special permission needed for access.

b.) Lab file server (**Gene1**; Ubuntu 12.04 OS) – for modifying lab databases, lab files, for writing and searching research-related information. It has the Libre office suite. Lab member can have their own account on the server or using the lab account.

c.) Image server (**P53**; Windows XP) – in fly room, for taking pictures. Lab member should use the general lab account (lab / zhoulab2)

d.) Laptop -**Sony** (Windows 7 OS) - For using MS office (Word, PowerPoint, Excel, Access), Adobe Acrobat and Photoshop, & for using ApE (A plasmid Editor) to edit plasmid information. Lab member should use the general lab account (lab/zhoulabsony)

e.) Laptop – Lenovo (Unbuntu 12.04) – For general web surfing, checking email, etc. Lab member can either have their own account or us

II.) Access Labfiles

Currently Labfiles has the following folders:

- Ordering
- Programs
- Protocols
- Databases
- People
- Projects
- regulations

a.) Cloud storage: From now (July 22, 2014) on, we will store our lab files in Copy; Copy (https://www.copy.com/) is a could storage service that offers 15GB per person free of charge. If you use the invitation link I sent to you, you can have 5 GB more.

b.) How to access lab files:

1. From Laptop-**Sony** or Lab file server **Gene1, or P53**: When you log in as "lab". The Copy folder is in the "lab" home directory. You can view, modify, add, etc. and treat the file as if it is a regular file on the computer. Any change will be automatically synced to the cloud.

2. From other computers (such as laptop-Lenovo, or your own computer or tablet):
   - You will need a Copy account for yourself (see above).

- You can either install the Copy app on the computer (or tablet) or access it from the website (https://www.copy.com).
- When you install a local app, you can access those files as if they are the regular files.
- Undergraduate students need to access Labfiles please get permission from Lei.

III.) Database:

1. The database "LabDB" is in the Labfiles/Databases folder. It currently has tables for Flystock, glyerol stock, primers, primer pairs, etc.

2. This database is intended to be the central deposit for information about shared reagents and animal stocks. While anyone can view the content, only designated person can change the content of the database.

IV.) ApE and plasmid constructs:

- A copy of ApE (A plasmid Editor) has been installed on Laptop-**Sony** for recording and manipulating sequence information. The .ape files should be stored in the "/Labfiles/Databases/Constructs/Gstock_maps" folder. Each ape file should begin with the G stock number and date (e.g. Gxxx_date).

- Following a sequence verification. The FASTA format file (and should be save in the "/Labfiles/Databases/Constructs/Gstock_seq" folder. The file name should begin with "GXXX_primer_xxx".