LABORATORY RECORD KEEPING

The keys to excellent lab technique are good planning and record keeping. This can not be overstressed and will be required of all individuals who participate in research in my lab. Besides being "good science" this requirement is implemented for several reasons that directly affect both the employee and the supervisor.

- Throrough documentation is a requirement for a good job performance review.
- When you follow the basic outline given below, students are forced to take the time to thoroughly plan their experiemnts. This in turn enhances their undertstanding of the work and limits wasted time and materials.
- Thorough documentation justifies student's effort and grading.
- When manuscripts are being prepared, a well maintained notebook makes the process far easier and more accurate, regardless of who the author is.
- Your notes can help identify any misplaced "old reagents" long after your departure from the lab.
- Finally, your efforts are useless to everyone if you fail to document your work.

The following format is required:

a) EXPERIMENT ID: This is one of the most important requiremnts for keeping your records organized. The experiment ID is composed of your initials and a unique experiment number (e.g. FM001). You will use a unique number for every new experiment or task.

b) PROJECT NAME: Every experiment/task should be assigned to a specific project name. Exact names are generally your choice (e.g. Protein determination on intestinal epithelial cells).

c) HEADER: The first page of an experiment/task needs to have a header containing: 1) Experiment ID, 2) date, and 3) project name. Subsequent pages in your lab book only require the Experiment ID on the top left and the date on the top right.

d) BODY: Your notes will include "Background", "Objectives", Experimental protocol", "Results", and Conclusions.

- The **Background** is used to briefly describe what you have been doing and the general purpose of the current experiment. It is very useful to you and the rerader if you refer to previous experiemnts by their Experimental ID.
- The **Objective/Hypothesis** will be a succinct description of what you hope to accomplish with this experiment.
- The **Experimental Protocol** will provide a thorough description of your methods. You are free to refer to previous protocols by experimental ID. You must write down the specific about common techniques. For example, when running an agarose gel write down: source of agarose, source of buffer,

percentage of agarose used, type of gel rig used, running time, and voltage used in your run.

- The **Results** section is always the most important in making sense of your data. Make sure to tape or staple any figures or pictures after you have labeled them and written down a legend.
- **Conclusion**, here you must provide a succinct statement about the significance of your findings and what you are planning in doing next.

ADDITIONAL REQUIREMENTS:

- When you fill your lab book, you need to construct a table of contents – this will be composed of your experimental ID, date, and project name.

- At the back of your lab book, you are required to maintain a catalog of recipes that you are using for laboratory reagents. You can copy and paste this into each new lab book so that you have immediate access to your previous recipes.

- Under NO circumstances are you to remove your lab book from the lab. When you leave thelab, you must leave your lab book and all computer files with me or in one of the computer external hard drives. Remember, this information belongs to the lab and the university after all.

_____ SEMESTER 20__

1) Welcome to the lab

2) Monroy's web site – http://www2.nau.edu/~fpm

3. Expectations for a productive semester:
- A. 10-15 hours per week.
- B. Cleaning – everyone is involved each week in cleaning and laboratory chores/maintenance.
- C. Weekly Lab meetings – these are compulsory. Absence will lead to your dismissal
- D. Research is a privilege – not a right!
- E. Everything stays in the Monroy's lab. The lab is you sacred place.
- F. Become independent as quickly as possible.
- G. Read – and then read some more – understand the lab collective work.
- H. Know about your project you are working on. Be sure you understand why we are doing what we are doing and what the end result is.
- I. You will receive two evaluations during the semester. One at mid semester and the other one at the end.
- J. You will be judged by the following matrix – if you are not performing at 4-5 on all of these after mid-semester evaluations – it is likely that you need to go find something else you are more suited for.
- K. Take the initiative – don't just sit around – THERE IS ALWAYS SOMETHING TO DO.
-L. Get your work done each week – there should be total focus on what you are doing as soon as you walk through the laboratory door.
- M. Troubleshooting – try to find out the answer before you ask ANYONE – then ask your lab mates – then ASK ME.
-N. Demonstrate a passion for learning and for the research you are doing as part of the Monroy's lab
- O. Lab note books – refer to handout
- P. SAFETY FISRT – if you don't know – ASK – or don't do it.
- Q. Have FUN – if it is not fun – then why are you doing it? Go and do something elese you enjoy.

Finaly, you will be required to submit a signed weekly report on your activities for that respective week.

NAME OF STUDENT SIGNATURE

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Monroy's Laboratory Metrics for Success

Scale is 1-5 with 5 being the highest level of achievement

Independence	1	2	3	4	5
Motivation	1	2	3	4	5
Planning	1	2	3	4	5
Laboratory skills	1	2	3	4	5
Trouble Shooting	1	2	3	4	5
Attention to Detail	1	2	3	4	5
Ability to follow Directions/Instructions	1	2	3	4	5
Lab Book Maintenance	1	2	3	4	5
General Laboratory Knowledge	1	2	3	4	5
Overall Performance	1	2	3	4	5

Comments: