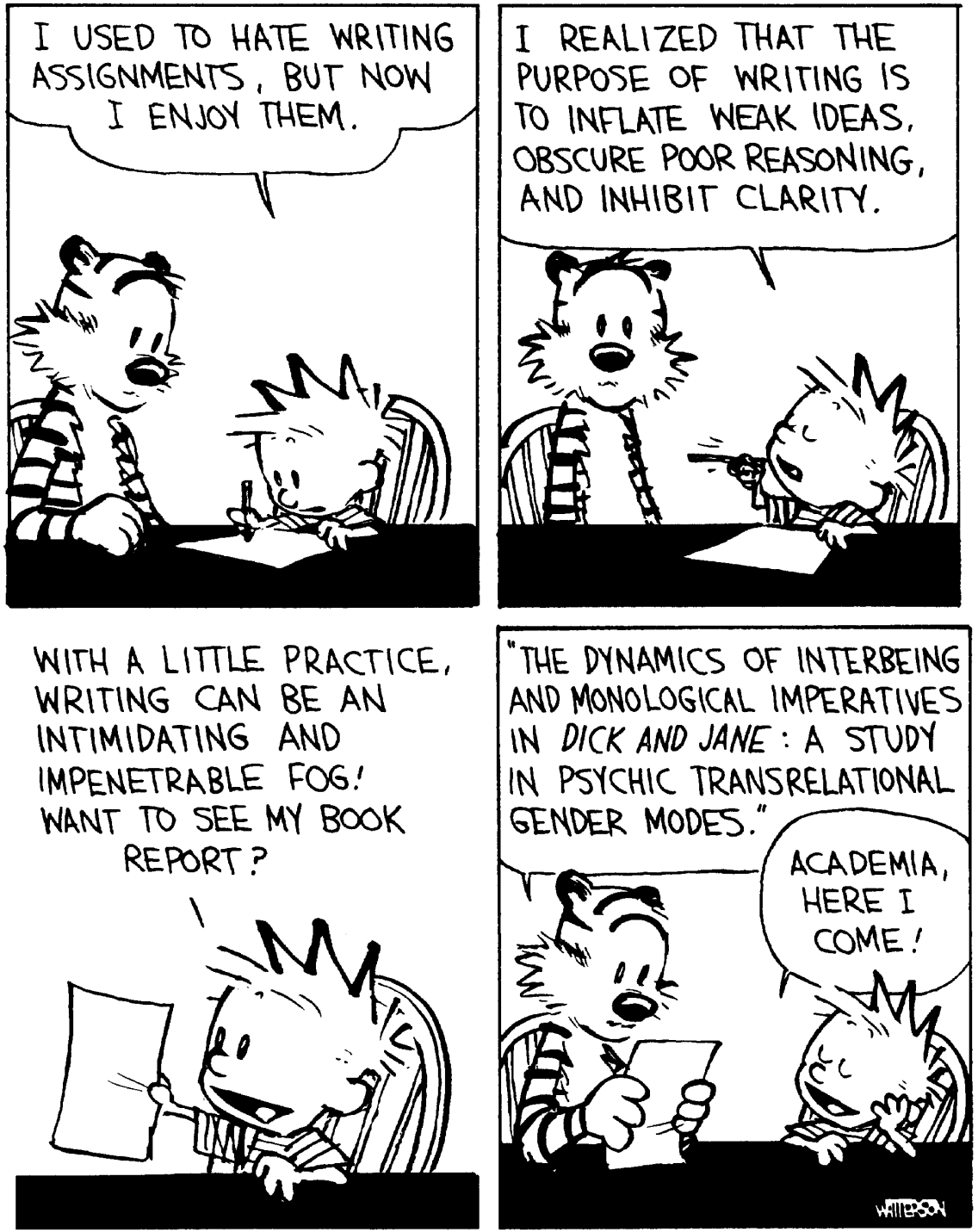
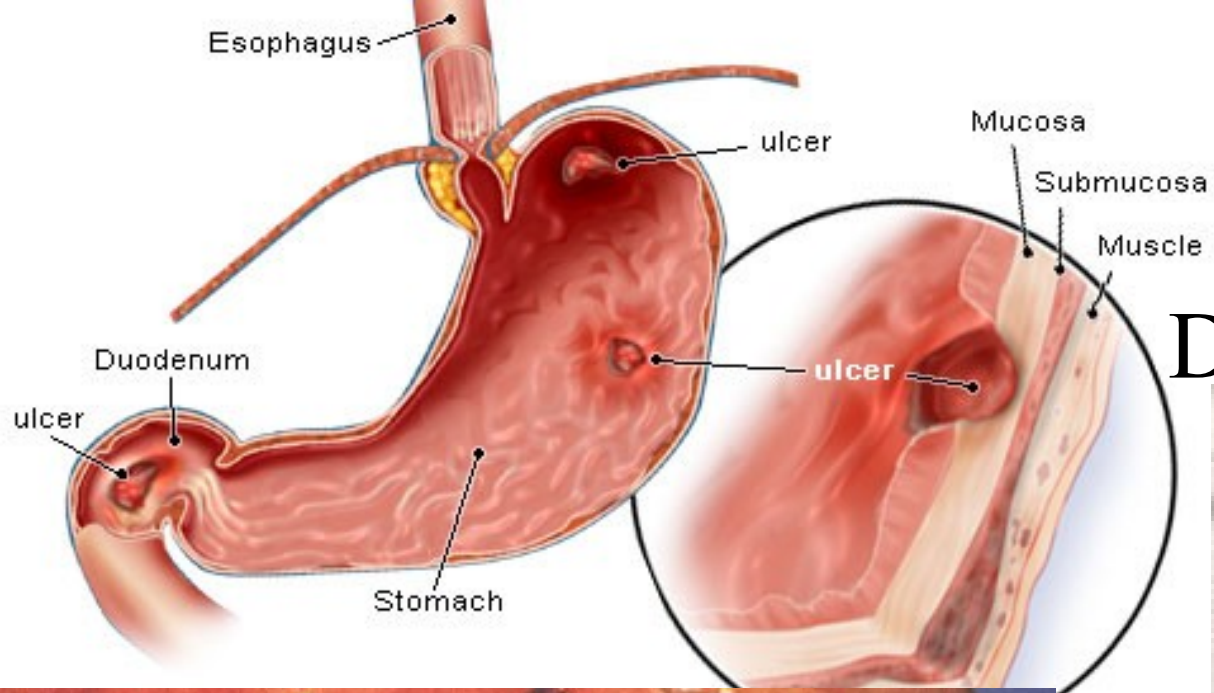
Inquiry 1 proposal due in next lab

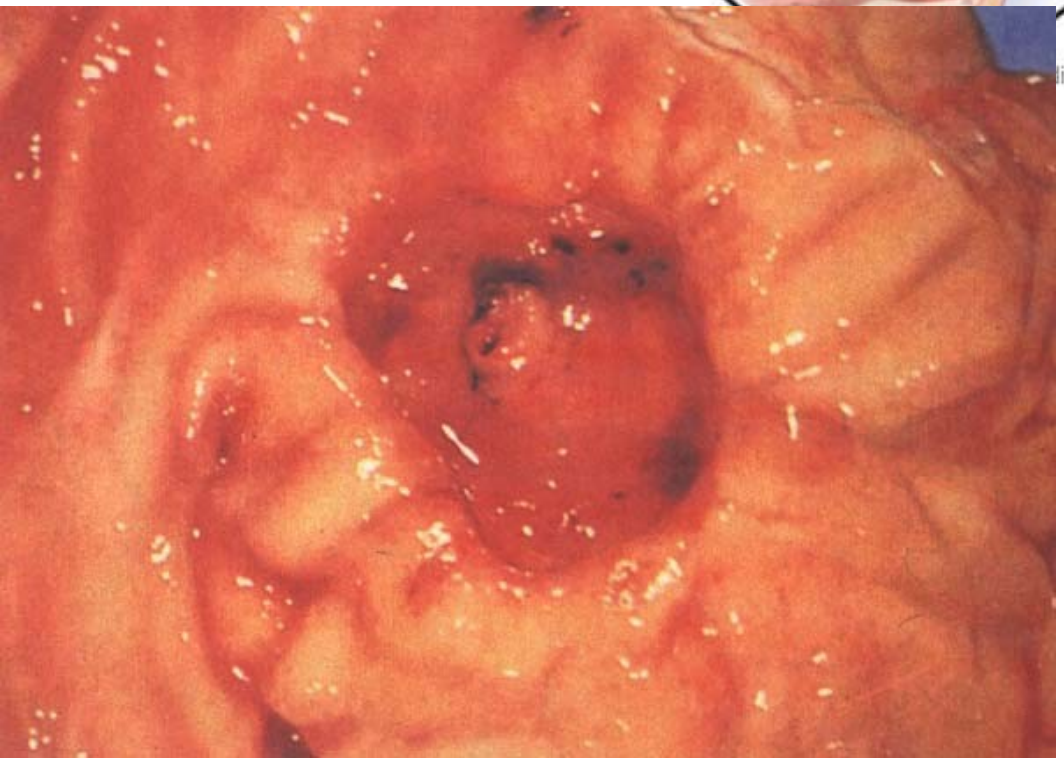
Inquiry 1 information on webpage

From: Calvin and Hobbes
by Bill Watterson





Dr. Barry Marshall



Johann Baptista van Helmont did a simple experiment in the early 1600's

Useful creativity, in part, occurs when you can be both uninhibited and selective at the same time.

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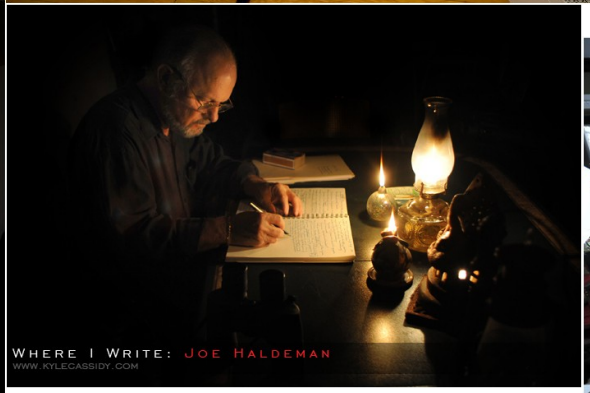
After brainstorming you need to be able to determine good from bad ideas.

Where do you do your best thinking ?



www.whereiwrite.org/index.php

What question would you like to answer?

What are your interests?

What do you think is important?

What do others think is important?

What can you see yourself doing?

Once you have a basic idea, it needs refining and a reality check.

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Is your idea realistic?

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Is your idea doable with the resources and constraints you have?

Wouldn’t it be cool to be able to track thousands of animals’ behavior at once across several continents?

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All I need are some helicopters, keen sighted minions, and thousands of dollars in fuel, food, and equipment.

Or I could use a supersonic jet to race from place to place and collect data.

Or I could use Google earth…

S Begall, J Cerveny, J Neef, O Vojtech, and H Burda

Magnetic alignment in grazing and resting cattle and deer

PNAS 2008 105:13451-13455; published ahead of print August 25, 2008

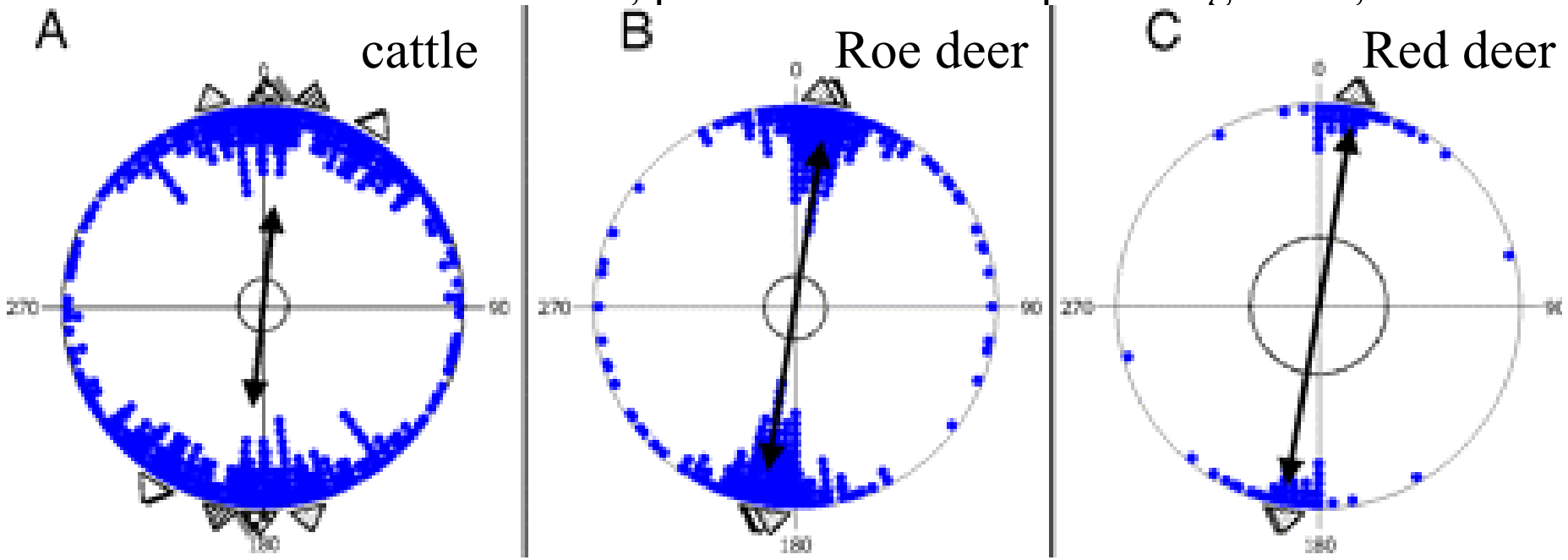

Fig. 1. Axial data revealing the N-S alignment in three ruminant species under study. (A) Cattle. (B) Roe deer. (C) Red deer. Each pair of dots (located on opposite sites within the unit circle) represents the direction of the axial mean vector of the animals' body position at one locality. The mean vector calculated over all localities of the respective species is indicated by the double-headed arrow. The length of the arrow represents the r-value (length of the mean vector), dotted circles indicate the 0.01-level of significance. Triangles positioned outside the unit circle indicate the mean vectors of the cattle data subdivided into the six continents (dotted: North America; gray: Asia; checkered: Europe; striped: Australia; black: Africa; white: South America) (A) and the mean vectors of resting (black) and grazing (white) deer, and of deer beds (dotted) (B: roe deer; C: red deer).

Limits for inquiry 1: (2 weeks)

Plan on 1 week to collect data,
-then-
1 week to analyze your data and produce the written and oral report

Limits for inquiry 1: (2 weeks)

- Observational, no complex data acquisition

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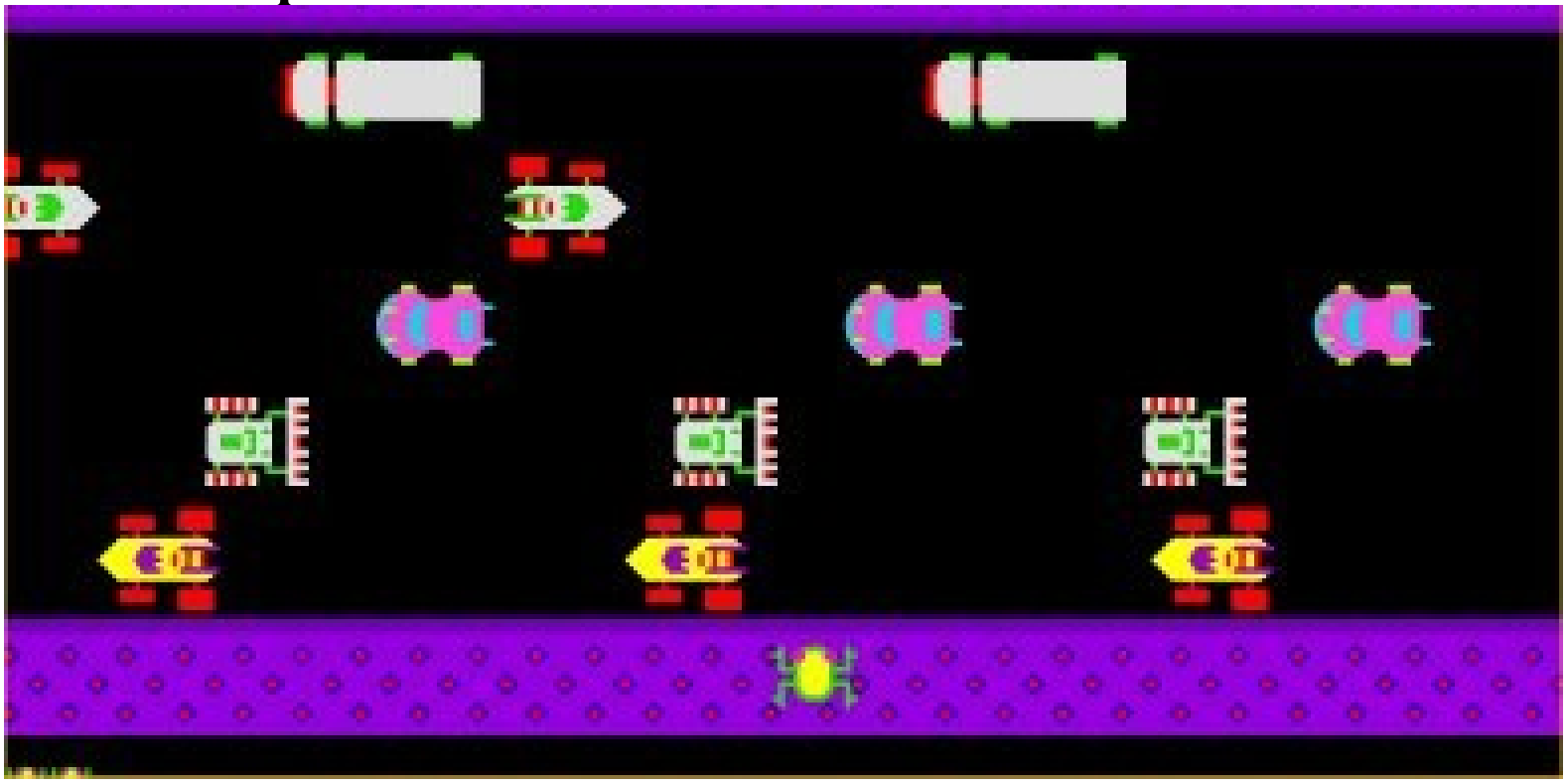
- You may observe people, but not intrusively. **You may not question strangers**.
- You may observe non-human organisms, but only non-intrusively.
- Data may be collected online, but you must analyze the collected information in some way.

Limits for inquiry 1: (2 weeks)

- Observational, no complex data acquisition

- Your safety and the safety of your subjects is of utmost importance.



Can your experiment(s) be done safely?

Safe for you?

Safe for others?

Proposal Format:

1. Question

State succinctly and clearly the question you will try to answer.

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State succinctly and clearly the question you will try to answer.

For inquiry 1 your question will be answerable without any specialized equipment. You will use observation to answer your question.

Proposal Format:

2. Hypotheses

Give all of the reasonable hypotheses that you can think of. This may require some research.

Proposal Format:

3. Experiment

a. Describe how you will collect data. What data will you collect? Where, when, and how will you collect the data?

b. Include how your data will allow you to eliminate your hypotheses, and how you will analyze the data.

Proposal Format:

4. References

If you used any references to develop your question, hypotheses, and/or experiment(s), be certain that you cite them. Remember, when doing research, using other's ideas is fine and necessary, but using someone else's idea without citing them is plagiarism.

Proposal Rubric

Originality

Hypotheses, Disproof, and Analysis

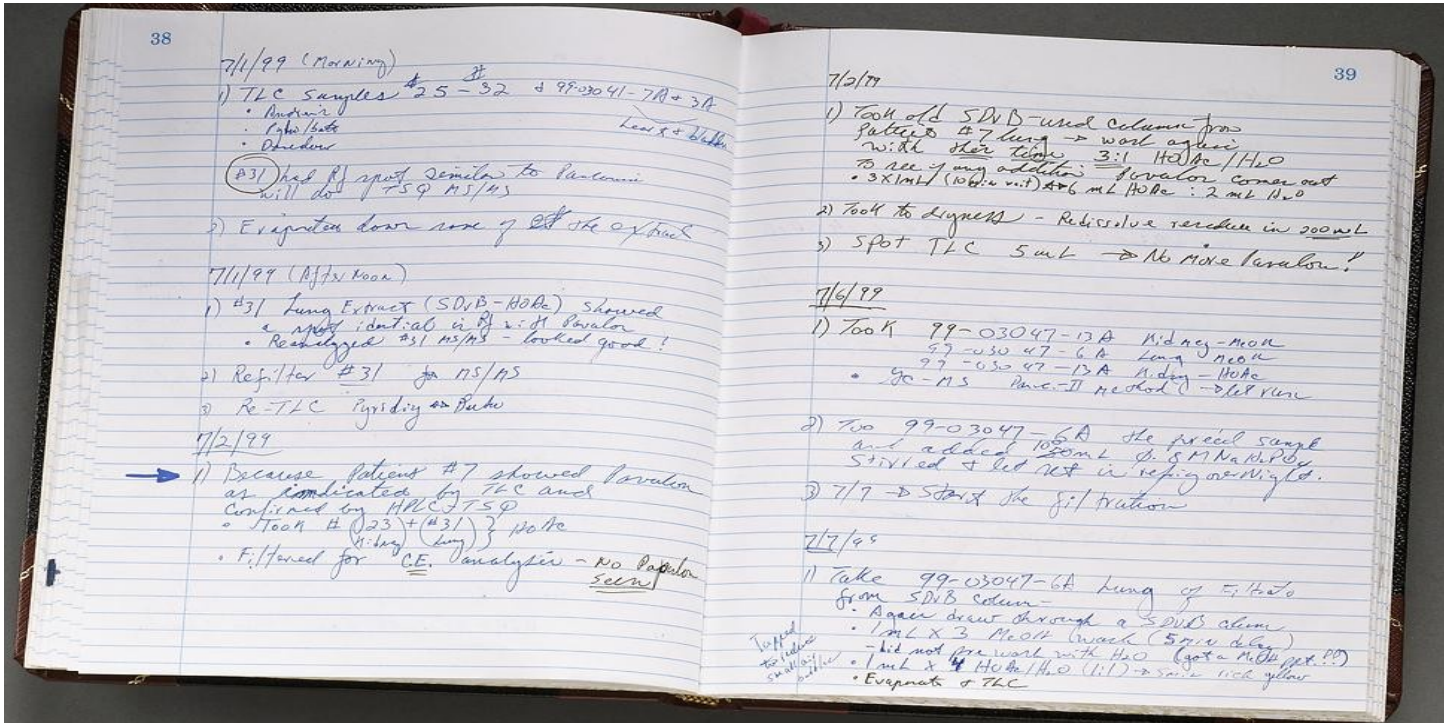
Safety and Appropriateness

What will happen during the next lab?
You should print 2 copies of your proposal and bring them to lab for approval.

There are numerous opportunities for help…

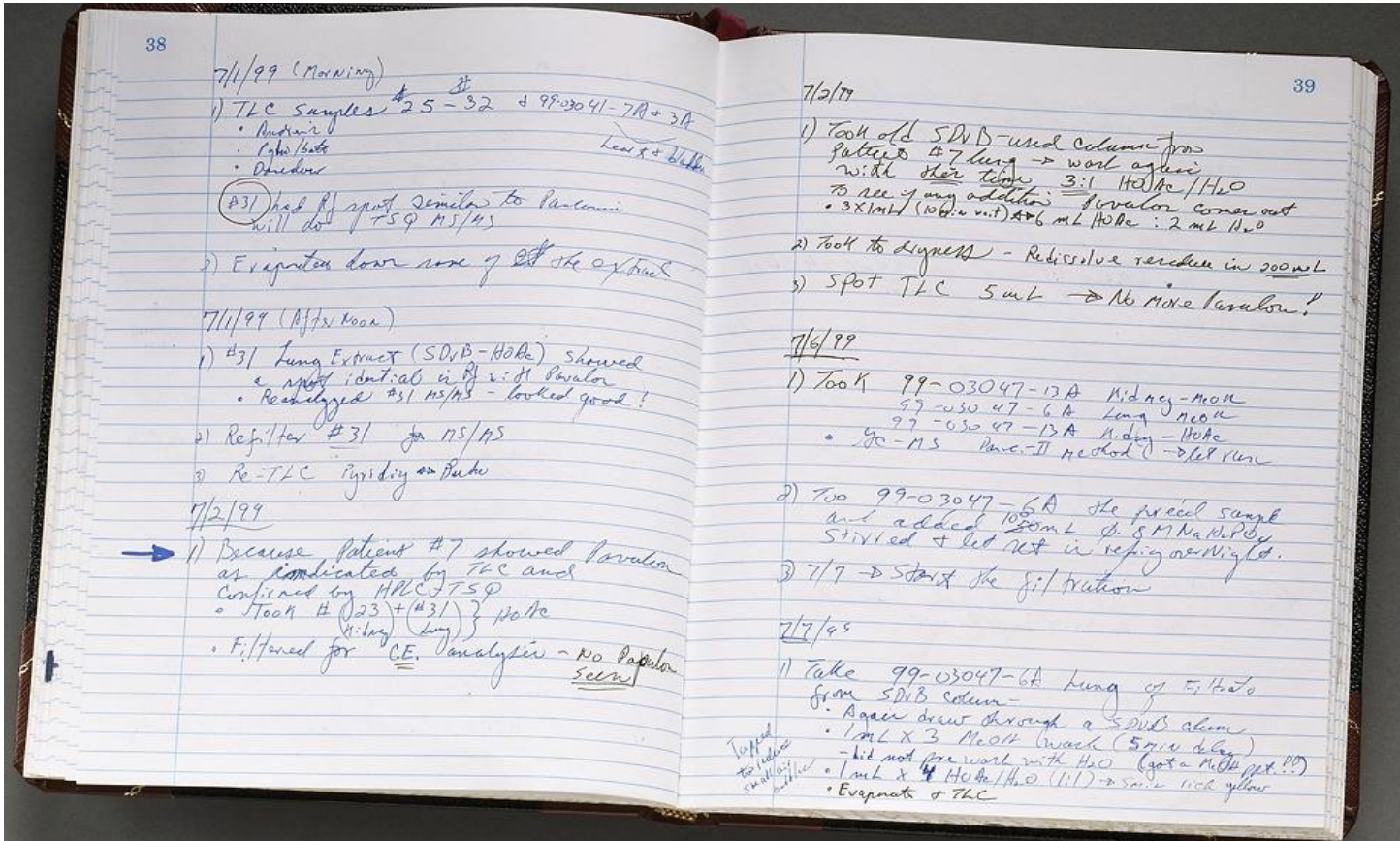
What do you do with your lab notebook?

- Write everything about your experiments.
- Each entry should have a date.
- Include notes (intro and conclusions), so when you go back to look at your notebook, the entries make sense.



What do you do with your lab notebook?

- Use permanent ink.
- Do not erase.
- Your entries should be understandable by others.



The written report for your inquiries will be formatted similarly to a scientific research article.

- Title
- Abstract
- Introduction
- Results
- Discussion
- Materials and Methods
- References

Things to do...

- FRI picnic Th 9/8 5-7pm
- First Th 9/1 on S. Congress (www.firstthursday.info)
- M 9/5 www.freedayofyoga.com

AustinChronicle.com

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