

Field Notebooks and Lab Protocols

Field notebooks and laboratory protocols are standard tools in any kind of scholarly research. What follows are some general guidelines for keeping one for your research and some strategies for organizing your scholarly life around a notebook.

Purpose

A field notebook or lab protocol (hereafter 'lab book') is a permanent written record of research activities. More than that, they are a diary or journal of your research life. In addition to recording your experimental measurements or field observations, you should be able to accurately reconstruct the progress of an investigation or a sequence of events in any project from a lab book--not just the stuff relevant to a particular investigation, but also what else was going on when lightning struck. This can be handy if you need to remember where you saved some computer files, or need to explain to someone why you decided to measure something a particular way, or where all the money they gave you went. Lab books can be subpoenaed by courts or reviewed by granting agencies, and confirm (or not) that you did what you say you did, or what you had promised to do.

Physical requirements

A lab book must be sturdy, to withstand day-to-day use and long-term archiving. They must have rigid, water-resistant covers, and proper sewn bindings. Rigid, water resistant covers are necessary to stand up to being rained on in the field (or having coffee spilled over them) without losing everything inside, being tucked into boxes and bags, and banged around during travel. The bindings should be sewn—spiral and gummed bindings are designed for easy tear-out, something that is unacceptable in lab book—nothing should *ever* be torn out of a lab book, nor even whited out or erased.

Ideally, the paper should be a good quality, reasonable weight, and acid free—disintegration of paper maybe inevitable, but if a lab book can't last 1000 years, it should at least survive the lifetime of the researcher and then some. Different researchers (and fields) prefer different sizes or styles of paper. Faint blue lines (that disappear when photocopied), are most common, but blank pages or graph-paper styles are available. Some have pre-numbered pages, wide margins (for summary or heading notes), no-carbon copy pages, etc. My personal preference is full-size (8.5x11) pages, and graph paper, non-photo blue lines, but that's just me. Standard "composition" books (with rigid covers) are usually fine. Bluebooks, spiral-bound notebooks, legal pads, and so forth are best avoided.

Keeping the lab book

Notations are **always** made in waterproof ink, preferably blue or black (they archive best and hold up best over time). Since anything in a lab book should be permanent, erasing, whiting out or tearing out material is unacceptable. If an honest error is uncovered, a new note should be made, and if absolutely necessary the erroneous material should be lined-out with a single straight line. Any changes made to previous material (lining out, notes added later, etc.) should be dated (this is the one place where red or green ink might be handy, to make absolutely clear what is original and what is new).

Any time you sit down to enter something, you should record the date (and time) of the observation. It's best to write (at most) every other line, with wide margins and clear headings. Exactly how observations are recorded will depend on the task at hand.

You can also add things beside written material to your lab book, such as summaries you've typed into the computer (printed out and taped into the lab book), notes and such you've acquired from others (unless these are better bound together somewhere else), and anything you think you want to have all conveniently at hand. It's handy to keep a 'table of contents' or frequent summaries of recent progress in a particular project, just so you don't have to search through everything every time you want to look for something. Some people keep one lab book, and others like to have separate lab books for every project. Some people are cagey about ink colors and making marks on edges of pages, but that's more effort than I can put into anything.