How To Write an Abstract

What is an abstract?

An abstract is a concise statement of the major elements of your research project, and the reader's first encounter with your research. Essentially, it should act as an advertisement for your work. It states the purpose, methods, and findings of your research project. There are two types:

A **descriptive** abstract identifies the areas to be covered in the report (an extended statement of purpose); it does not demonstrate the paper's content.

An **informative** abstract summarizes the entire report and gives the reader an overview of the facts that will be investigated in more details in the paper or presentation itself.

Why write an abstract?

The abstract allows readers to make decisions about your project. Your sponsoring professor can use the abstract to decide if your research is proceeding smoothly. The conference organizer uses it to decide if your project fits the conference criteria. The conference audience (faculty, administrators, peers, and presenters' families) uses your abstract to decide whether or not to attend your panel. You will also be expected to write abstracts when applying for research grants (the reader will use it to determine whether your project is important or interesting), submitting articles to journals (especially online), when writing a proposal. More often than not, you will be addressing an educated non-expert to understand that purpose and value of your work.

Some writing instructors and experienced writers suggest writing an abstract for all of your writing projects since it makes you focus on what is important in your paper/project. It also provides a powerful way of reevaluating your logic and in defining your purpose, and it can be helpful in the writing process if you are stuck.

How does an abstract appeal to such a broad audience?

The audience for this abstract covers the broadest possible scope--from expert to lay person. You need to find a comfortable balance between writing an abstract that both shows your knowledge and yet is still comprehensible--with some effort--by lay members of the audience. Limit the amount of technical language you use and explain it where possible. Always use the full term before you refer to it by acronym [for example, portal venous transfusions (PVT)]. Remember that you are yourself an expert in the field that you are writing about--don't take for granted that the reader will share your insider knowledge. Even if you get used to presenting ideas to people who speak your "language," it's unlikely that when it comes time to get funding or publish, you will need to speak beyond those disciplinary boundaries.

What should the abstract include?

Think of your abstract as an advertisement, or a condensed version of your whole essay. By reading it, the reader should understand the nature of your research question. You should include the following:

- A specific and detailed **title,** indicating the question you investigated, or the method, if that is important—it should be complete enough to stand on its own without the abstract.
- A brief **introduction** to the topic-providing context or background (don't repeat or re-phrase your title or any sentences from your paper, and don't analyze other papers!). Remember that what might seem obvious to you after working on a longer research project is likely to be new to your audience.
- **Motivation.** Why do we care about the problem and the results? How do you address a "gap" in the field? This section should include the importance of the work, and the impact it might have if successful.
- A statement of the study's **objectives/purpose--what** is the research question or the problem you are trying to solve? What is the scope of your work (a generalized approach? A specific situation?)? What is your hypothesis? What are the specific

questions you are addressing with this project? For text- based research projects, what argument are you proposing? Do not include a statement like "this paper will look at"—such a statement is too specific when you are discussing the general purpose and approach of your research.

Methodology/Approach (1-2 sentences)
How did you go about solving or making progress on the problem? Did you use simulation, analytic models, prototype construction, or analysis of field data? library research? analysis of fictional texts? interviews or observations? What important variables did you control, ignore, or measure? What was the extent of your work? What theoretical framework did you use to understand the problem? What paradigm defines your approach?

- A summary of **results.**
- A statement of **conclusions** (or hypothesized conclusions). What new knowledge are you bringing to your field? Are your results general, potentially generalizable, or specific? Possibly some discussion of the relevance of the conclusions. What are the **implications** of your research? Are they generalizable or specific to a particular case? You might note restrictions or limitations on the results by using words like "might," "could," "may," and "seem." Be careful to use non-evaluative language; *report* instead of *comment* on your findings.
- Possibly some call for **future research.**
  Whatever kind of research you are doing, your abstract should provide the reader with the answers to the following questions: What are you asking? Why is it important? How will you study it? What will you use to demonstrate your conclusions? What are those conclusions? What do they mean?

How do I go about writing the abstract?
1. Assess your writing task. Figure out the basics--Deadline, Length, Purpose (to communicate clearly to your various audiences what you have researched), and Audience (faculty, students, etc). You are generally going to be writing for the educated generalist, not the specialist, so give enough information so that your reader can follow you without feeling confused or annoyed; they shouldn't have to research your topic to be assured of the quality of your proposal.
2. Reread or review the research you've completed or are working on. Look for the main parts of the work: purpose, methods, scope, results, conclusions, and recommendations.
3. Start strong. Your first sentence should be clear, exciting, thought-provoking, compelling—it should make readers want to read the rest! It should be a good general (but not TOO general) claim.
4. Stick to the facts. Don't try to use massive abstractions of thought or fancy theoretical jargon.
5. Explain what others haven't done, and what you plan to. Show your readers that you have a point. Avoid future tense like "I will argue" or "I will analyze" (which suggests you haven't done the work yet), and avoid phrases like "I hope to" or "I expect to," which makes you sound less self-assured.
6. Don't use too many (irrelevant) parenthetical comments, unnecessary italicization, and enthusiastic punctuation!!!! (See how silly it looks?)
7. Keep citations brief, current, and relevant.
8. Get feedback on your draft from your sponsoring professor, from peers, from TA's, etc. Your friends should be able to describe your point in their own words; if they can do this, you've been successful!
9. Revise (don't just edit) the abstract based on feedback you receive. Plan on several revisions with time away from the draft. The abstract itself should be a mini-essay.

10. Be sure your abstract is grammatically sound. Spell-check. And then proofread. Don't assume that the spell checker will correct everything for you; too often words that are "spelled" correctly slip by unnoticed by the spell-checker, leaving you with an embarrassing blunder! You are MUCH smarter than the spell checker will ever be, and you shouldn't leave your intellectual fate in its hands.

Stylistic Considerations:
The abstract should be one paragraph (usually 100-250 words). Edit it closely to be sure it meets the Four C's of abstract writing:

- Complete — it covers the major parts of the project. Avoid personal and biographical references.
- Concise — it's not excessively wordy and contains no unnecessary information. Fewer words, more impressive. Don't copy sentences from your work; you'll end up putting in too much information. Sure, it might be fun to impress readers with your acrobatic feats of polysyllabic parlance, but guess what? They don't really care. And abstracts aren't about fanciness, anyway; they're about conveying an idea quickly and convincingly.
- Clear — it is readable, well organized, and not too jargon-laden. Use plain English, and avoid trade names, acronyms, abbreviations or symbols, all of which you would have to explain, taking up valuable word space. Stick to simple language and formal, but approachable, style. Choose active verbs, not passive ones (e.g. "the study tested" not "it was tested by the study"); words like "discuss" and "examine" are also weak verbs to be avoided. Use simple sentences; but vary sentence structure to avoid choppiness.
- Cohesive — it flows smoothly between the parts. Make logical connections and good transitions.

Common Problems:
Too long, too much detail, or including too much introductory/methodology material:
The Black-Capped Chickadee (Poecile atricapillus) is a species of North American songbird inhabiting the United States and Canada. Unlike many other songbirds whose songs vary geographically, previous studies done on chickadee populations from Massachusetts, Pennsylvania, New York, Ontario, Missouri, Wisconsin, Alberta, Utah, British Columbia, Washington, and California have shown that males sing a typical two tone song, "fee-bee-ee," with little variation between populations. Researchers have also shown that an isolated population from Martha's Vineyard, an island offshore of Massachusetts, demonstrates singing patterns different from the usual two note songs. I am studying a second isolated population of chickadees in Alaska, which has not been systematically investigated previously. There is one anecdotal report that suggested the males from the Alaskan population have unusual singing patterns. For example, the males sing songs with multiple notes accompanied with frequency shifts. The goal of my research...

Using too much jargon. Use plain English and active voice where you can, and simple sentences:
Within the historiography of North American studies, my research attempts to combine criticisms of Them vs. Us historical paradigms with recent psychological findings on stereotype formation, self-esteem and implicit self-theories.

Not using complete sentences:
To determine and describe the ancient Mayan calendar system. To ascertain how they tracked time for their civilization. Included is...

Too short, or not giving the reader sufficient context and completeness: Shorter is not always better!
We have used infrared reflectance to study the effects of melt recrystallization on the structure of thin polymer films. We hypothesized that slowly melting and then resolidifying the thin polymer

films will lead to higher levels of crystallinity and orientational order in very thin polymer films. (46 words)

Vagueness
This article describes how to write an abstract. The author relies on established rules of good composition. She also provides a number of helpful hints about writing abstracts. The article includes examples of both bad and good abstracts. *Compare this to:* A useful abstract is a well-constructed paragraph with an informative topic sentence followed by two to three supporting sentences. The supporting sentences contain specific information about the topic. The sentences are arranged in a logical order and the ideas are connected with good transitions. Inspiration for the topic sentences should come from the recommendations, results, conclusions, tutorial, and summary sections of the document.

Sample Abstract Worksheet

Use the categories below to help draft your abstract. Examples are provided as a guide.

Title (e.g., "N-terminal arm of Mcm1 is required for transcription of a subset of genes involved in maintenance of the cell wall.")
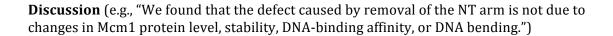
Introduction (e.g., "The yeast Mcm1 protein is a member of the MADS box family of transcription factors that interacts with several cofactors to differentially regulate genes involved in cell-type determination, mating, cell cycle control and arginine metabolism. Residues 18 to 96 of the protein, which form the core DNA-binding domain of Mcm1, are sufficient to carry out many Mcm1-dependent functions.")

Hypothesis (e.g., "However, deletion of residues 2 to 17, which form the nonessential N-terminal (NT) arm, confers a salt- sensitive phenotype, suggesting that the NT arm is required for the activation of salt response genes.")

Methods (e.g., "We used a strategy that combined information from the mutational analysis of the Mcm1-binding site with microarray expression data under salt stress conditions to identify a new subset of Mcm1-regulated genes.")

Results (e.g., "Northern blot analysis showed that the transcript levels of several genes encoding associated with the cell wall, especially YGP1, decrease significantly upon deletion of the Mcm1 NT arm. Deletion of the Mcm1 NT arm results in a calcofluor white-sensitive phenotype, which is often associated with defects in transcription of cell wall genes. In addition, the deletion makes cells sensitive to CaCl2 and alkaline pH.")

Discussion (e.g., "We found that the defect caused by removal of the NT arm is not due to changes in Mcm1 protein level, stability, DNA-binding affinity, or DNA bending.")

Conclusion (e.g., "This suggests that residues 2 to 17 of Mcm1 may be involved in recruiting a cofactor to the promoters of these genes to activate transcription.")