

Writing An Annotated Bibliography



This is a general guide to writing annotated bibliographies. Before beginning to write your own annotated bibliography, always look at the course assignment sheet or check with your professor for specific instructions.

What is the Difference Between a Bibliography and an Annotated Bibliography?

- A bibliography is an organized list of works consulted when you are doing research on a particular topic, composed using the standard disciplinary referencing style (MLA, Chicago, APA, CSE, etc.), and placed at the end of a paper, journal article, chapter, or book
- An annotated bibliography is a separate paper, journal article, appendix to a journal article, or complete book consisting of a series of entries on a single theme, organized either alphabetically, by date, or by topic. Each entry consists of two parts that together form a single record:
 1. the citation in the proper referencing style
 2. a one-paragraph discussion (or "annotation") of the source listed above

How is the Annotation in an Annotated Bibliography Different from an Abstract?

- An abstract is a descriptive summary of a single longer text, with content summarized in the same order as the original. It is often found at the beginning of scholarly journal articles, in periodical indexes, or in electronic databases
- An annotation enables readers to see the relationship of a number of written works to each other and in the context of the topic studied
- Although what is required in annotated bibliographies differs from discipline to discipline, many annotations are both descriptive and critical and illustrate the writer's library research skills, summarizing expertise, point of view, analytical ability, and understanding of the field

What is the Purpose of an Annotated Bibliography?

- To present the reader with a fairly comprehensive, yet focused, selection of the scholarly sources on a given topic
- Provide a bird's-eye view or general review of a specialized field
- More narrowed prelude to a proposal for future study or to a review of literature

The disciplinary area and purpose of an individual annotated bibliography will determine its character. However, in most cases, it is your chance to:

- Provide an overview of your topic and illustrate that you know your subject well
- Show off your abilities to do bibliographical research
- Identify the theses or arguments of the books and articles you have chosen
- Place research on a particular topic in an historical context
- Assess the value of the reference for other scholars in the field and thus participate in the conversation of your academic community
- Describe the usefulness of the texts for your own research and distinguish areas for further research, thus helping you find your own way toward a working thesis argument

How Should You Format Your Annotated Bibliography?

Each entry in an annotated bibliography provides full bibliographical information (normally in the style* your department or discipline requires), then a paraphrase of, or commentary on, the source. Depending on the length of the annotated bibliography, these entries will be listed either alphabetically (typical in a short student paper), by ascending date, or by topic (in a long student paper).

*Note that each style guide suggests its own way of setting up an annotated bibliography.

There are also two writing styles in annotated bibliographies: one is to write in sentences, and the other, emphasizing conciseness, is to write in a kind of point-form using phrases rather than sentences. None of the examples in this handout uses the latter style, but an example of the point-form (or telegraphic style) would be: "An historical view of research in the field in the last century. Contains brief descriptions of important legislation." Ask your professor which style is preferable.

The text of an annotation normally ranges from two to ten sentences. This forces you to focus on the central ideas in the text and to write objectively.

A long annotated bibliography may be preceded by an introduction to the topic chosen, with a discussion of the rationale behind the selection of the entries for the bibliography as well as the exclusion of others, and the timeframe covered. In a very long annotated bibliography, the entries are often numbered (see examples A and B), but this is rare in student papers. As

suggested above, other options for longer annotated bibliographies would be to arrange entries under topic and subtopic headings, or in chronological order. Again, check with your professor to find out what organizational style is preferred.

What Referencing Style Should You Use in an Annotated Bibliography?

Generally, MLA, Chicago, or APA style is used, although, as you can see from several of our examples in this handout, this is not always the case in some disciplines. Ask your professor what referencing style you should use. But whatever style you use, make sure the appearance and form are consistent throughout your text.

The Process of Writing and Annotated Bibliography

1. Find and record citations for books, journal articles, and other primary documents on your topic

What types of sources should you be looking for and how can you find them?

- This depends upon the discipline, but one good rule is to have some primary sources (original texts, research reports, or documents) as well as secondary (from academic journal articles where a learned author is analyzing other people's work). In the sciences, published journal articles in which scientists are reporting their own research are primary sources
- Try to find published bibliographies (in books, journals, or online) to get a quick start. Look in the Book Review Index for reviews of books, or in online biographical sources to find out more about authors
- Look at reference lists or bibliographies in related (and preferably recent) articles and books. Repeated names indicate that these are essential sources and you should probably include them in your bibliography
- The sources you choose should have some value to your own research question. Even if they don't bear directly on your subject, they might use a theoretical framework that you can apply to (or reject for) your own work
- When you are using a database, note keywords or synonyms you might use as alternatives to find materials that are related to your area of interest
- Use a [citation manager](#) to collect citations and record summaries
- When you begin to work on your annotations, start with the major scholarly works first. (You will recognize them as the works most referred to and most cited in other reference lists.) This will give you a good grounding and provide the context for the rest of your entries

How can you evaluate your sources while reading?

- Skim abstracts, prefaces, tables of contents, and indexes to see if it will be useful for you to read the text thoroughly. Remember to check for synonyms to describe your topic if you can't find the exact word or phrase readily in the index
- Take notes as you read. Bibliographic details, a summary of contents, notations of methodology, theoretical perspective, pertinence to your project, and biographical data (about the author) can be stapled to photocopies or printouts of papers, or paper-clipped to books
- Make a chart. Down the side write the names of the authors and texts, and along the top write important sub-topics (such as the author's reputation or background, intended audience, theoretical perspective, centrality to your own research topic, contributions to the field, gaps in the approach, evidence used, comprehensiveness of coverage, level of generality, accuracy of details, date of source, etc.). This will allow you to compare and contrast the value of the works from your chosen perspectives

2. Choose how you will organize your annotated bibliography

- Remember, there are three ways of organizing your annotated bibliography: by author alphabetically, by date, or by subtopics or sections. The latter will not be necessary in a very short paper
- Decide whether you need to write a paragraph as a preface, explaining the scope of your annotated bibliography (within certain dates, within geographic parameters, only in a certain genre, etc.), or noting any other particulars (such as abbreviations, etc.). Most of the time, undergraduate annotated bibliographies are relatively short and simple, and will not need such a preface

3. Write your annotations and save them in a file

- As soon as you read each work, compose what you think is a finished annotation for that text and proofread it while you still have the text in front of
- you to check for any errors. Save your entry for the finished draft of your paper. Don't just make brief notes that you intend to return to when you are writing up your final draft, since later you may not remember what you meant when you made the note
- After finishing a few entries, check to see that that the taxonomy and annotation style is appropriate for your purposes. You may find at this stage that your first entries are too wordy and include too much detail, or that your entries are stylistically inconsistent. Don't worry; that's normal at this stage
- Decide what you need to do to make all of your entries appropriate and consistent; revise what you have done, and continue to create the rest of your annotations with the first entries as a guide

Sample Annotated Bibliography on Chemistry

by [Ultius](#) in [Sample Work](#)

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At [Ultius](#), we've discovered that a great [essay writing service](#) has to be able to cater to more than just people looking for generic essays. Instead of focusing solely on generic custom essays and the like, we've made sure to hire a large number of specialist writers that can complete work in the areas of engineering, chemistry, physics, and so on. We understand that writing papers on these topics can be very difficult, and because of that we have made sure to hire only the best college graduates to help us write great papers that will guarantee your academic success. If you're looking to [buy an essay](#) on leaching metals or a similar subject, here is a sample annotated bibliography that will help showcase our writing process and serve as a starting point for a paper on this subject!

Annotated Bibliography on Leaching Metals

Abstract

When selecting cookware, one particular area of concern that many individuals overlook is that of potential leaching of metals into food. Nutrient density of food can be easily damaged through overheating. Materials such as aluminum, cast iron and Teflon often play a role in the tastes of food due to leaching. In understanding leaching further, what can be gleaned from it is that temperature matters. Thus, researchers and scientists have continuously studied the effects of certain metals and their leaching capabilities and in turn discovered that many disorders and diseases that humans develop are a direct result of leaching. Recommendations from many scientists have been for humans to better understand what leaching is by doing their research and to in addition, have a grasp of the types of materials that are used to make cookware and cooking utensils.

While research has been done on the effects of leaching, there has not been a noteworthy amount on cast iron cookware and the effects it has on food. The majority of research performed on the subject has been on aluminum cookware as it is the most common. Due to this factor, an extensive apprehension of what cast iron is how it is used in cookware and the minimal amount of studies on the metal have to be performed. Benefits and cons associated with all types of cookware need to also be gleaned from a variety of articles and postings on the subject. Chemical analysis is an important undercurrent within the subject of leaching of metals into food due to the certain reactivity that happens once food mixes with the cookware material and heat is factored into the equation. This in turn, allows researchers, scientists and the regular layperson to better understand what they are eating and prepare for the possible consequences and outcomes associated with the food they consume that may have leaching of metal mixed in with it.

Bassioni, G., Mohammed, F. S., Al Zubaidy, E., Kobrsi, I. (2012, May 1). Risk Assessment of Using Aluminum Foil in Food Preparation. International Journal of Electrochemical Science, 7, 4498 – 4509

This article analyzes the contamination of food being a major concern in developing countries through the use of three specific techniques: weight loss, environmental scanning electron microscopy and inductively coupled plasma - mass spectrometry. A better understanding of leaching assessment regarding aluminum was done through the usage of these three methodologies.

Dr. Nancy. (2012, August 21). Leaching Metals and Chemicals from Cooking Surfaces. Retrieved February 18, 2013, from Truth N Health, LLC. website: <http://www.truthnhealth.com/2012/08/leaching-metals-and-chemicals-from-cooking-surfaces/>

The article discusses the positives and negatives associated with leaching metals from cooking surfaces. Noting specifics at the onset of the article, an assessment of each type of metal is determined. The author makes it a point to speak in general and specifics on all metals covered. There is a significant emphasis on Teflon coating, iron and aluminum in the article. While there is no detailed or precise experimentation performed by the author of this article, there is much to be garnered through the facts and knowledge about each of the metals and their leaching capabilities.

Gould, J. H., Butler, S.W., Boyer, K.W., Steele, E.A. (2008, November 21). Hot leaching of ceramic and enameled cookware: collaborative study. Journal - Association of Official Analytical Chemists , 66, 610-9.

The World Health Organization published an article pertaining to a study concerning hot leaching of ceramic and enameled cookware in 1983. In the particular study, scientists from 14 labs collaborated to understanding how heating of ceramic and enameled cookware causes leaching in food. Various temperatures were tested to better understand how hot the cookware has to get before leaching occurs. As 14 different studies were done using many different chemical methods, results were packaged into a report to better quantify the amounts of Pb and Cd and the effects of leaching of cookware. Researchers also sought to understand which type of cookware had the most probability of being toxic to the body.

Karbouj, R. (2008, December). A simple pre-treatment of aluminum cookware to minimize aluminium transfer to food. *Food and Chemical Toxicology*, 47, 571–577.

An in-depth analysis is undergone in this article to analyze the effects of aluminum leaching from cookware to food. The authors show that boiling cookware in water can decrease the amount of leaching. Various pre-treatments are explored in the experiment in an effort to better understand the changes in structure associated with aluminum leaching from cookware to food. The authors note that there is a clear distinction in the types of metabolic processes that aluminum goes through versus others such as iron, magnesium and calcium. An analysis is also given about the ingestion exposure of quantities of aluminum by the human body and the diseases that this is often associated with.

Mohammed, A., Khan, A., Nomani, A.A., Ahmed, S. (1997, November 14). Heavy metals: leaching from glazed surfaces of tea mugs. *Science of The Total Environment*, 207(1), 49–54. doi:10.1016/S0048-9697(97)00244-1

Experimentation was performed on tea mugs with heated beverages to determine whether there was heavy metal leaching. Concentrations of certain beverages were tested in mugs of metals including cadmium, iron, lead, nickel and manganese). Various temperature ranges were also used to determine the leaching capacity. The beverages used were orange juice and tea.

Mohammed, F. S., Al Zubaidy, E, Bassioni, G. (2011, January 1). Effect of Aluminum Leaching Process of Cooking Wares on Food. *International Journal of Electrochemical Science*, 6, 222 - 230.

The "Effect of Aluminum Leaching Process of Cooking Wares on Food," describes the intake of aluminum from cooking utensils as being a specific concern to community health. Leaching of aluminum from a variety of aluminum utensils in a myriad of food solutions were tested using two precise analytical methods: weight loss measurement and inductively coupled plasma-mass spectrometry. Different solutions beginning with H₂O were also examined as well as different meat extract concentrations.

Rajwanshi, P., Singh, V., Gupta, M.K., Kumari, V., Shrivastav, R., Ramanamurthy, M., Dass, S. (1997, January). Studies on aluminium leaching from cookware in tea and coffee and estimation of aluminium content in toothpaste, baking powder and paan masala. *Science of The Total Environment*, 193(3), 243-249. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0048969796053478>

The article assesses the level of aluminum leaching from cookware that were present certain dishes and beverages. Using a sequential study of experimentation, researchers tested the varying amounts of leaching present in tea, coffee, toothpaste, mouth freshener and baking powder to ascertain which of the substances had the highest levels of aluminum. Ingestion patterns within individuals are also discussed in significant detail to better understand the toxicity of leaching in the body.

See, S. W., Balasubramanian, R. (2008, December). Chemical characteristics of fine particles emitted from different gas cooking methods. *Atmospheric Environment*, 42(39), 8852–8862. doi:10.1016/j.atmosenv.2008.09.011

Is there a difference in the types of cooking methods and the amount of metal leaching that can occur? The authors of this article experiment with gas cooking to investigate whether certain cooking methods impact the amount of metal leaching on cooking utensils and in food. Specific chemical constituents and their respective concentrations are measured in a controlled atmosphere. The scientists analyze boiling, pan-frying, stir-frying and steaming to understand whether gas cooking makes a difference in metal leaching.

Silicone Tally: How Hazardous Is the New Post-Teflon Rubberized Cookware. (2010, May 5). Scientific American, Retrieved from <http://www.scientificamerican.com/article.cfm?id=earth-talk-silicone-tally>

The article speaks of the health hazards associated with the usage of silicone bake ware and cooking utensils. The article notes that per the Food and Drug Administration and Canada's health agency, Health Canada, regulations have stated that food-grade silicone does not react with food or beverages or produce hazardous fumes as long as items are used at recommended temperatures. Studies have concluded for the most part that silicone is non-toxic; however, definitive research has to be conducted in order to ascertain whether or not there are harmful elements associated with leaching into cooked foods.

Smith, E. (2007, September). Choosing Healthy Cookware. The Educated Vegetable, 2. Retrieved from http://www.educatedvegetable.com/newsletter_9_07.pdf

This article informs on the healthiest types of cookware and do not react with food or have a nominal amount of impact with food. Through careful analysis, Smith points out that certain factors should go into a cookware decision to ensure that there is minimal amount of leaching. To provide the reader with a better understanding of reactivity of cookware with food, Smith, discusses the extent to which certain types of materials and metals are important in cookware selection. Describing the best and optimum choices, readers can gather a significant amount of information from his recommendations and make the best decision accordingly.

Stellpflug, C. (2012, May 31). Is your cookware killing you? Retrieved February 18, 2013, from Natural News Network website: http://www.naturalnews.com/036029_cookware_non-stick_chemicals.html

Stellpflug discusses the influence of cookware leaching on our health. Comparing the various types of cookware, the article mentions early studies on blood toxicity levels and the many diseases and illnesses that individuals have been diagnosed with that scientists can point to leaching of cookware as a result. The article goes on to point out that high temperatures should be used to minimize risks of disease and disorders as a result of leaching of cookware.

Verissimo, M.I.S., Olivera, J.A.B.P., Gomes, M. T. (2006, October 25). Leaching of aluminum from cooking pans and food containers. Sensors and Actuators B: Chemical, 118(1-2), 92–197. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0925400506002899>

While aluminum is not an essential element in the body, the toxicity levels of aluminum can be studied via commonly used cooking ware and utensils. Researchers can quantify the amount of metal leaching in certain recipes based on samples of cooked items with acidic additives placed on them. These samples are then understood through a variety of result mechanisms that help

researchers better understand how toxic aluminum leaching is to the body. The article describes in detail the processes by which red cabbage samples were used with three different additives to understand the effects of leaching in the body. The results were analyzed and gave scientists a more accurate view of the significance of aluminum leaching.

Annotated Bibliography

Articles (Be sure to number entries)

Citation (APA format)	Source/ Keywords	Category (Research, Commentary, Theoretical)	Problem/Issue/ Research Questions	Method- ology	Conclusions

Books/Dissertations (number entries accordingly)

Citation (APA Format)	Source/ Keywords	Category (Research, Commentary, Theoretical)	Problem/Issue/ Research Questions	Method- ology	Conclusions

A List of unusual Chemistry Term Paper Topics

Chemistry papers can be challenging, not because of the topic, but because of choosing the topic. Most chemistry papers are written in a formulaic style, so whatever topic you write about will be written in the same way. One of the toughest parts of writing the chemistry paper is making the choice of what topic to write about, especially since it seems that chemistry topics are very similar to each other.

If you want to write a unique paper, it is all about the topic. You can set yourself apart from the other students in your classes by using topics like these:

- The chemistry of diet sodas and the effect on bone structure
- Acid rain in your neighborhood and the effects on plants
- The power of fluoride in community water
- Plastics packaging and its effects on food stuffs
- Turning yeast into a biofuel
- Using sugar for batteries
- Organic food vs. Pesticides
- Chemical signals from medications
- Chemicals that trigger food allergies
- The differences between skim, 2%, and whole milk
- Vitamin deficiencies in humans
- The chemistry of MDMA
- Biomass to Ethanol
- Biology of hydrothermal vents
- How chemistry changes the world
- The chemistry of aging
- Pesticides and their effects on run-off soil
- Capturing and using carbon dioxide
- Chemistry related to a religion, history, literature, math, electronics, etc...
- Chemistry-based careers
- Ossification
- Chemical makeup of different types of magma and lava rocks
- Why generic medicines are less expensive (what chemistry is involved)
- Chemistry behind liquid bandages

- Chemistry behind dental fillings
- Chemistry behind different types of makeup
- Why is radon so dangerous
- Pheromones in humans
- Chemistry of baking: baking soda vs. baking powder
- Replacing eggs in baking
- The role of Marie Curie in modern chemistry
- Chemistry in forensics
- Chemicals used in shipping food long distances
- What goes into “natural flavors”
- Chemistry in ink pens (Sharpies vs traditional pens and markers)

Fighting rust formation with
graphene and nanostructured
magnesium

Ideas

- Bioinorganic chemistry in human health and energy production
- Tuning surface interactions to control friction and wear of materials
- Characterization of enzymes involved in vitamin metabolism
- Green chemistry with functional polyolefins
- Homogeneous catalysts immobilized on oxide supports by optimized linkers for improved activities and lifetimes
- Design of molecules to perturb protein-protein interactions
- Surface functionalization of layered zirconium phosphate materials
- Biodegradable polymer synthesis from renewable resources
- Synthetic analogues of hydrogenase active sites and dinitrosyl

iron complexes (DNICs)

- Coordination chemistry as a platform for new materials and biological activity
- Synthesis of conjugated ladder polymers for organic solar cells
- Fluoride anion binding by molecular receptors. Applications in water analysis and fluorine-18 positron emission tomography
- Werner complexes: a new class of earth abundant metal catalysts
- Biophysical probes of iron metabolism in eukaryotic cells
- Pyrrolysine incorporation machinery as a genetic code expansion device
- Synthetic optimization of quantum dot luminescence for use in solar cell optical concentrators and optical diodes
- Molecular Approaches to Energy Conversion
- Optical measurements of trace atmospheric species
- Pincer complexes of transition metals for synthesis of new materials
- Storing solar energy with small organic molecules
- The discovery and characterization of new enzymes and metabolic pathways
- Synthetic studies of bioactive natural products at the chemistry/biology interface
- Mechanistic studies of green reactions

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- Photophysical properties of 2-dimensional layered nanomaterials and their applications in catalysis
- Biosynthesis of the anti-tumor agent Azinomycin B
- Computational design of transition-metal free catalysts for asymmetric alkylation reactions
- Functionally-sophisticated Polymer Materials
- Searching for ultra-stable metal-organic frameworks (MOFs) or porous polymer networks (PPNs) for potential applications such as hydrogen storage, carbon capture, and green catalysis