BIOLOGY 246: COLLOQUIUM IN BIOMEDICAL SCIENCES
SPRING 2010
FRIDAYS from 2:00 p.m. to 3:50 p.m.
GMCS 324

GENERAL CLASS DYNAMICS

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Course Description: This one unit course is open to all SDSU students, in particular science majors, and community college students in the Bridges to the Future Program. The Colloquium this semester will focus on research projects ranging from cell biology to behavioral research to engineering research. The course will also provide information on unique opportunities for students who might enter research and medical career paths. Research investigators and administrators from the NIH, SDSU and UCSD, and medical and graduate students will present lectures in the above areas.

Learning Objectives: After completing this course, students will:
1) meet scientists from different disciplines and build their network
2) be able to identify what traits make up a good scientist
3) learn from current and former Ph.D. students about their research and their graduate school experiences
4) be exposed to current SDSU faculty and student research

Course Meetings: There will be several times during the semester when the class will not meet to accommodate the schedules of the various speakers. Because class will meet at irregular times throughout the semester, it is imperative that students pay close attention to the class schedule as well as their emails for any changes. All class meetings will be 2 hours long. All students are expected to attend the Student Research Symposium that will be held March 5-6, 2010.

Course Requirements: Students taking the course for credit are required to write a research paper that is no less than 5 pages long excluding the title page and the literature cited/reference page(s). This paper can discuss any one of the scientific presentations made in the colloquium (excluding presentations on fellowship or summer research opportunities), your individual research project or your idea for a future research interest. Papers are due by 12:00 p.m. on Monday, May 17, 2010. Turning in papers prior to that date is okay too and is encouraged.

Grading: Your grade will be determined by your paper, your attendance, your evaluations and your participation in class. Each class is worth 5 points (9 x 5 = 45 points total). Yes, that means attendance will be taken at each class. Each student will submit an evaluation of the presentations given. These evaluations are due one week following the day of the presentation unless the presentations were given by undergraduate students. Then the evaluations are due before you leave class. Each evaluation will be worth 10 points (9 x 10 = 90 points total). One (1) point will be deducted for each day the evaluation is late. Yes, this means the weekend counts. Should you fail to turn in evaluations for undergraduate student presentations on the day of the presentation, you will not receive points for doing them later. You will be asked to rate the overall presentation
and the assigned reading, the level of the presentation and the reading, what you thought of the speaker, if the topic was informative, what two things minimum you learned new from the presentation, did you ask any questions and what question you would have asked if given the opportunity. If it is believed that the sincerity of your answers is lacking, points will be deducted from your score. Yes, I know this is subjective. All students are expected to be active participants in the colloquium. Students are expected to have read the week’s assignments (when given) and to be prepared to discuss them at the presentations. One (1) point from attendance will be subtracted if called on to participate in the discussion of the paper and you are unprepared. Finally, your paper is worth **200 points**. A table showing the rubric for this paper can be found in this syllabus.

**This makes for a total of 335 points possible.** Your grade is based strictly on percentages (see below) using a 305 point scale. This allows you to miss two classes without having to give a reason for your absence. After that you will need to provide documentation before an absence will be approved. Determining legitimacy for absences will be on a case-by-case basis. If your absence is approved, a full one-page summary from an article related to the speaker’s presentation will be accepted in lieu of the missing evaluation. A copy of the article must also accompany the summary. **THERE ARE NO EXTRA CREDIT POINTS POSSIBLE.**

How many points will be needed to earn each grade is shown in the chart below. Pluses (+’s) and minuses (-’s) will not be given to grades. For students taking the class for credit/no credit, 75% of the points possible must be earned to receive a credit grade.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>90-100%</td>
<td>275-305 pts</td>
</tr>
<tr>
<td>B</td>
<td>80-89.99%</td>
<td>244-274.999 pts</td>
</tr>
<tr>
<td>C</td>
<td>70-79.99%</td>
<td>214-234.999 pts</td>
</tr>
<tr>
<td>D</td>
<td>60-69.99%</td>
<td>183-213.999 pts</td>
</tr>
<tr>
<td>F</td>
<td>0-59.99%</td>
<td>&lt; 183 points</td>
</tr>
</tbody>
</table>

**Communication:** All students must maintain active email accounts. Although not a course requirement per se, students must get into the habit of checking their email daily. Failure to do so may cause you to miss crucial course information.

**Classroom Behavior:** We want you to feel relaxed in class, but we expect each of you to be respectful of all guest speakers, your instructors and to each other. We will not tolerate any type of behavior which is disruptive to guest speakers or panelists. No texting, use of cell phones, or checking your email accounts during class will be allowed. This includes leaving class to undertake these activities. Please turn them off or put them on silent while you are in class.

**Panel Discussions:** This semester we will have two panel discussions on topics relating to the graduate school experience. Students are to come prepared to class with questions, prior to each panel of speakers, in order to maximize the time students can interact with each guest or visiting scientist.

- **Current Graduate Students Panel:** Students currently enrolled in Ph.D. programs in various disciplines will share their experiences and challenges as pre-doctoral students, provide advice to the audience and answer questions.
- **Post-doctoral or Faculty Panel:** SDSU alumni who have completed their Ph.D. in various disciplines will share their experiences as post-doctoral scientists, faculty in academia or professionals in the fields of health care.
# BIOLOGY 246: COLLOQUIUM IN BIOMEDICAL SCIENCES

## TENTATIVE SCHEDULE OF PRESENTATIONS

<table>
<thead>
<tr>
<th>DATE</th>
<th>ACTIVITY</th>
<th>ASSIGNMENTS DUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 22</td>
<td>Overview of Syllabus&lt;br&gt;Collect all student email addresses</td>
<td></td>
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<tr>
<td>January 29</td>
<td><strong>NO CLASS</strong></td>
<td></td>
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<tr>
<td>February 5</td>
<td><strong>MBRS RESEARCH FORUM</strong>&lt;br&gt;Presenters TBA&lt;br&gt;<strong>EXTRA CREDIT OPPORTUNITY</strong>&lt;br&gt;NOTE: Ganhdi King Ikeda: A Legacy of Building Peace Exhibit&lt;br&gt;Feb 5-25 in Love Library&lt;br&gt;Opening Ceremony&lt;br&gt;5-7 pm in Casa Real, Aztec Center</td>
<td></td>
</tr>
<tr>
<td>February 12</td>
<td><strong>NO CLASS</strong></td>
<td>EVALS FROM 2/5 DUE BEFORE 3PM TODAY</td>
</tr>
<tr>
<td>February 19</td>
<td><strong>PhD Student Panel</strong>&lt;br&gt;Danielle Augustin, UC Berkeley, Microbiology&lt;br&gt;Cecile Browne, UCSD/Burnham Institute, Molecular Pathology&lt;br&gt;Patricia Castillo, UC Davis, Biology&lt;br&gt;Cecilia Larrosa, Stanford, Engineering&lt;br&gt;Allissa Marquez, Univ. of Nebraska, Psychology&lt;br&gt;Richard Virgen, UC Irvine, Biology</td>
<td>Pass out SRS evaluations</td>
</tr>
<tr>
<td>February 26</td>
<td><strong>EXTRA CREDIT OPPORTUNITY</strong>&lt;br&gt;Christina Campbell&lt;br&gt;Michigan State University&lt;br&gt;Community &amp; Ecological Health</td>
<td>EVAL FROM 2/19 DUE BEFORE 3PM TODAY</td>
</tr>
<tr>
<td>March 5</td>
<td>Student Research Symposium (SRS), Aztec Center</td>
<td>NO CLASS GO TO SRS</td>
</tr>
<tr>
<td>March 12</td>
<td><strong>Albert W. Johnson University Research Lecture</strong>&lt;br&gt;James F. Sallis, Distinguished Professor of Psychology</td>
<td>SRS Write Ups DUE Today before 3pm</td>
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<tr>
<td></td>
<td>2pm in Arts &amp; Letters (A&amp;L) 201</td>
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<tr>
<td>March 19</td>
<td><strong>NO CLASS</strong></td>
<td>EVAL FROM 2/12 DUE BEFORE 3PM TODAY</td>
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<tr>
<td>Date</td>
<td>Event Details</td>
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<td>-------------------------------------------------------------------------------</td>
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</table>
| March 26 | **EXTRA CREDIT OPPORTUNITY**  
   Gerardo Perez, Ph.D.  
   Post Doctoral Fellow  
   UCSD Cancer Center |
| April 2  | NO CLASS – SPRING BREAK                                                       |
| April 9  | April Weissmiller  
   Ph.D. Candidate, Neuroscience, UCSD  
   NSF Graduate Fellowship Recipient |
| April 16 | **Completed PhD Panel**  
   TBD  
   EVAL FROM 4/9 DUE BEFORE 3PM TODAY |
| April 23 | NO CLASS  
   EVALS FROM 4/16 DUE BEFORE 3PM TODAY |
| April 30 | NO CLASS |
| May 7    | MBRS RESEARCH FORUM  
   Presenters TBA  
   Papers due by Mon., May 17th by 4pm |
# RUBRIC FOR FINAL PAPER

## IF WRITING ABOUT YOUR RESEARCH PROJECT

### TITLE PAGE
- Title
- By line
- Date

**8 POINTS TOTAL**
- 4 points
- 2 point
- 2 point

### ABSTRACT – 360 words – on a separate page
- Introductory Statement
- Summary of major material and methods (including sample size and statistical approaches)
- Summary of major results
- Brief interpretation of results, conclusions

This should be self-explanatory without reference to the text.

**32 POINTS TOTAL**
- 8 points
- 8 points
- 8 points
- 8 points

### INTRODUCTION
- Length 1-2 pages
- Brief summary of relevant background as relates to health disparities
- Purpose
- Support statement with references

This should clearly and concisely review the rational for the study and identify what issues were going to be addressed. It should clearly place the report within the area being studied. It should not describe the outcome of the study (in any detail).

**28 POINTS TOTAL**
- 4 points
- 8 points
- 8 points
- 8 points

### MATERIALS AND METHODS
- Write in past tense
- Write what you did – description of methods
  - a) what were your experimental subjects
  - b) what was your experimental variables (dependent and independent)
  - c) method of collecting data
  - d) what were your controls

This section should carefully describe the methods and materials used including sample size and statistical approaches. It should include details for unique experiments and appropriate references for commonly used techniques. The sources of materials should be shown by supplier, but geographical origin is not required.

**36 POINTS TOTAL**
- 4 points
- 8 points
- 8 points
- 8 points
- 8 points

### RESULTS/DATA
- Write in the past tense
- Figures with legends /Tables with titles
- Text to briefly describe the data
  - major observations and key trends

This section should succinctly state the results without any lengthy discussion or interpretation of individual data. Conclusions presented as declarative headings are not preferred. Extensive conclusions do not belong in the Results section.

Where possible data should be presented in graphical rather than tabular format. Small tables may best be incorporated into the text. Tabular data should not repeat that shown in the graphs. Graphs should start the y-axis at 0 or show a clear scale break in those cases where starting at 0 would be difficult. The numerals on graph scales should be sufficiently large and clear enough and spaced to allow the data to be interpreted and the nature of the scale, e.g. linear or log, readily appreciated. The scale numerals should be

**34 POINTS TOTAL**
- 4 points
- 20 points
- 10 points
easily readable.

Statistical tests should be clearly defined and statistical significance should be shown in both figures and tables by superscripts of a, b, c.

Data in text or tables should be shown to numbers of significant digits consistent with the accuracy of each individual measurement and biological relevance. For example, weight, usually measured to the nearest 0.5 kg, should be shown in mean and SD to at most one significant digit after the decimal point.

**DISCUSSION**
- What did you expect to find and why
- How did your results compare with those expected
- How do you explain any unexpected results
- How might you test potential explanations
- What’s your next experiment

This should summarize but not repeat the Results and should distinguish between logical explanations of the results reported and extrapolations or hypotheses drawn from the results.

The discussion should end with a succinct summary of the data and conclusions AND should put the findings into the context of the reason for the study as outlined in the Introduction. Where possible and reasonable, some conclusions should be made about the wider implications of the study findings.

**LITERATURE CITED/REFERENCES**
- Full citations for any references cited in your paper
- No less than 10 references

Do not list references in alphabetical order, but list and number them as they appear in the paper. No et al. citations are allowed in the references. All authors must be listed in the references. If it is necessary to cite an abstract, this should be designated.

**WAYS TO LOSE POINTS (This is not an exclusive list)**
- Abstract too long
- Misspelling of words (no matter how many times the same word is misspelled)
- Poor sentence structure
  - Run on sentences, incomplete sentences, sentences that make no sense
- Have references in bibliography that are not cited in the text
- Have references in paper not cited in bibliography
- Figures (including charts) without legends and titles and/or not noted in the text of the paper

<table>
<thead>
<tr>
<th>Points Total</th>
<th>40</th>
<th>20</th>
</tr>
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<tbody>
<tr>
<td><strong>DISCUSSION</strong></td>
<td>8 points</td>
<td>8 points</td>
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</table>

<table>
<thead>
<tr>
<th>Points Total</th>
<th>0.5 point/1-5 words over</th>
<th>0.5 points per word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract too long</td>
<td>1 point/sentence</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Misspelling of words</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Poor sentence structure</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Run on sentences, incomplete sentences</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Have references in bibliography</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Have references in paper</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
<tr>
<td>Figures (including charts) without legends and titles</td>
<td>1 point/infradiction</td>
<td>1 point/infradiction</td>
</tr>
</tbody>
</table>
RUBRIC FOR FINAL PAPER

IF YOU ARE WRITING A RESEARCH PAPER

This is going to be a paper about a subject you are interested in researching in the future using ten (10) other papers regarding this subject matter.

<table>
<thead>
<tr>
<th>TITLE PAGE</th>
<th>8 POINTS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>4 points</td>
</tr>
<tr>
<td>By line</td>
<td>2 point</td>
</tr>
<tr>
<td>Date</td>
<td>2 point</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUMMARY – 360 words – on a separate page</th>
<th>32 POINTS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introductory Statement – what is this proposed project</td>
<td>12 points</td>
</tr>
<tr>
<td>Summary of why this project will be beneficial to society</td>
<td>12 points</td>
</tr>
<tr>
<td>Summary of major material and methods you would probably use</td>
<td>12 points</td>
</tr>
</tbody>
</table>

This should be self-explanatory without reference to the text and should not be a duplicate of the abstracts from the paper you are going to discuss in length. It should be written in your own words.

<table>
<thead>
<tr>
<th>INTRODUCTION</th>
<th>28 POINTS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length 2-3 pages minimum</td>
<td>4 points</td>
</tr>
<tr>
<td>Brief summary of relevant background with references as it relates to your project</td>
<td>8 points</td>
</tr>
<tr>
<td>Purpose</td>
<td>8 points</td>
</tr>
<tr>
<td>Hypothesis</td>
<td>8 points</td>
</tr>
</tbody>
</table>

This should clearly and concisely review the rational for the study and identify what issues are going to be addressed. It should clearly place the report within the area being studied. It should not describe the outcome of any studies (in any detail) that will be discussed in the paper.

<table>
<thead>
<tr>
<th>MATERIALS AND METHODS</th>
<th>32 POINTS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write in future tense</td>
<td>8 points</td>
</tr>
<tr>
<td>Compare and contrast what you want to do and how it will differ from what has been done in the past by others—description of methods in general terms</td>
<td>8 points</td>
</tr>
<tr>
<td>a) what will be your experimental subjects</td>
<td>8 points</td>
</tr>
<tr>
<td>b) what will be your experimental variables (dependent and independent)</td>
<td>8 points</td>
</tr>
<tr>
<td>c) what will be your method of collecting data</td>
<td>8 points</td>
</tr>
<tr>
<td>d) what will be your controls</td>
<td>8 points</td>
</tr>
</tbody>
</table>

This section should include how your methods and materials will differ from those of others including sample size and statistical approaches. It should include details for unique experiments and appropriate references for commonly used techniques.

<table>
<thead>
<tr>
<th>ANNOTATED BIBLIOGRAPHY OF YOUR REFERENCES</th>
<th>100 POINTS TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full citations for any references cited in your paper</td>
<td>4 points per reference</td>
</tr>
<tr>
<td>No less than 10 papers should be used in this paper</td>
<td></td>
</tr>
</tbody>
</table>

This section should list each reference you used and include a brief 1-2 paragraph summary of the research that has been presented within it.

Do not list references in alphabetical order, but list and number them as they appear in they paper. No et al. citations are allowed in the references. All authors must be listed in the references. No abstracts can be used as one of the five papers discussed.
WAYS TO LOSE POINTS (this is not an exclusive list)

Abstract too long  
Misspelling of words – no matter how many times the same word is misspelled  
Poor sentence structure and not writing in the correct tense  
Run on sentences, incomplete sentences, sentences that make no sense, etc.  
Have references in bibliography that are not cited in the text  
Have references in paper not cited in bibliography  
Figures (including charts) without legends and titles and/or not noted in the text of  
the paper  

0.5 point/5 words over  
0.5 points per word  
1 point/sentence  
1 point/infraction  
1 point/infraction  
0.5 point/infraction

OTHER NOTES FOR ALL PAPERS

Page limitations: The paper should be 5 pages minimum and no more than 10 pages long. Text should be double-spaced on 8 1/2  x 11 inch paper, font size = 12 point, font = Times

Figures and Tables: Tables and illustrations should complement and not reiterate the text. Tables/illustrations should not include data that can be given in the text in one or two sentences. Figures/illustrations/tables and the literature cited page will not be counted as part of the page. In other words, actual text count when counting pages. Use Arabic numerals on number tables. Multi-part figures must be labeled. Please use small non-bold, non-italic capital letters when using figure headings/labelings.

Each table must contain all necessary information in the caption and the table itself must be understandable independently of the text. Details of experimental conditions should be included in the table footnotes, although this should not unnecessarily repeat information in the Methods.

Figure Legends: Figure legends should be brief and should not restate information already in the Materials and Methods section.

Literature Cited: References should be presented in the following style:

1. Journal Articles:  

2. Articles in books:  

3. Online journal:  

4. Online reference (website information, not journal related):  
Annotated bibliographies
The following information was retrieved form http://www.library.cornell.edu/olinuris/ref/research/skill26.htm

How to Prepare an Annotated Bibliography

WHAT IS AN ANNOTATED BIBLIOGRAPHY?

An annotated bibliography is a list of citations to books, articles, and documents. Each citation is followed by a brief (usually about 150 words) descriptive and evaluative paragraph, the annotation. The purpose of the annotation is to inform the reader of the relevance, accuracy, and quality of the sources cited.

ANNOTATIONS VS. ABSTRACTS

Abstracts are the purely descriptive summaries often found at the beginning of scholarly journal articles or in periodical indexes. Annotations are descriptive and critical; they expose the author's point of view, clarity and appropriateness of expression, and authority.

THE PROCESS

Creating an annotated bibliography calls for the application of a variety of intellectual skills: concise exposition, succinct analysis, and informed library research.

First, locate and record citations to books, periodicals, and documents that may contain useful information and ideas on your topic. Briefly examine and review the actual items. Then choose those works that provide a variety of perspectives on your topic.

Cite the book, article, or document using the appropriate style.

Write a concise annotation that summarizes the central theme and scope of the book or article. Include one or more sentences that (a) evaluate the authority or background of the author, (b) comment on the intended audience, (c) compare or contrast this work with another you have cited, or (d) explain how this work illuminates your bibliography topic.

CRITICALLY APPRAISING THE BOOK, ARTICLE, OR DOCUMENT

For guidance in critically appraising and analyzing the sources for your bibliography, see How to Critically Analyze Information Sources. For information on the author's background and views, ask at the reference desk for help finding appropriate biographical reference materials and book review sources.

CHOOSING THE CORRECT FORMAT FOR THE CITATIONS

Check with your instructor to find out which style is preferred for your class. Online citation guides for both the Modern Language Association (MLA) and the American Psychological Association (APA) styles are linked from the Library's Citation Management page.
SAMPLE ANNOTATED BIBLIOGRAPHY ENTRY FOR A JOURNAL ARTICLE

The following example uses the APA format for the journal citation. NOTE: APA requires double spacing within citations.


The authors, researchers at the Rand Corporation and Brown University, use data from the National Longitudinal Surveys of Young Women and Young Men to test their hypothesis that nonfamily living by young adults alters their attitudes, values, plans, and expectations, moving them away from their belief in traditional sex roles. They find their hypothesis strongly supported in young females, while the effects were fewer in studies of young males. Increasing the time away from parents before marrying increased individualism, self-sufficiency, and changes in attitudes about families. In contrast, an earlier study by Williams cited below shows no significant gender differences in sex role attitudes as a result of nonfamily living.

This example uses the MLA format for the journal citation. NOTE: Standard MLA practice requires double spacing within citations.


The authors, researchers at the Rand Corporation and Brown University, use data from the National Longitudinal Surveys of Young Women and Young Men to test their hypothesis that nonfamily living by young adults alters their attitudes, values, plans, and expectations, moving them away from their belief in traditional sex roles. They find their hypothesis strongly supported in young females, while the effects were fewer in studies of young males. Increasing the time away from parents before marrying increased individualism, self-sufficiency, and changes in attitudes about families. In contrast, an earlier study by Williams cited below shows no significant gender differences in sex role attitudes as a result of nonfamily living.
Critically Analyzing Information Sources

INTRODUCTION
You can begin evaluating a physical information source (a book or an article for instance) even before you have the physical item in hand. Appraise a source by first examining the bibliographic citation. The bibliographic citation is the written description of a book, journal article, essay, or some other published material that appears in a catalog or index. Bibliographic citations characteristically have three main components: author, title, and publication information. These components can help you determine the usefulness of this source for your paper. (In the same way, you can appraise a Web site by examining the home page carefully.)

I. INITIAL APPRAISAL

A. Author

1. What are the author's credentials--institutional affiliation (where he or she works), educational background, past writings, or experience? Is the book or article written on a topic in the author's area of expertise? You can use the various Who's Who publications for the U.S. and other countries and for specific subjects and the biographical information located in the publication itself to help determine the author's affiliation and credentials.

2. Has your instructor mentioned this author? Have you seen the author's name cited in other sources or bibliographies? Respected authors are cited frequently by other scholars. For this reason, always note those names that appear in many different sources.

3. Is the author associated with a reputable institution or organization? What are the basic values or goals of the organization or institution?

B. Date of Publication

1. When was the source published? This date is often located on the face of the title page below the name of the publisher. If it is not there, look for the copyright date on the reverse of the title page. On Web pages, the date of the last revision is usually at the bottom of the home page, sometimes every page.

2. Is the source current or out-of-date for your topic? Topic areas of continuing and rapid development, such as the sciences, demand more current information. On the other hand, topics in the humanities often require material that was written many years ago. At the other extreme, some news sources on the Web now note the hour and minute that articles are posted on their site.

C. Edition or Revision

Is this a first edition of this publication or not? Further editions indicate a source has been revised and updated to reflect changes in knowledge, include omissions, and harmonize with its intended reader's needs. Also, many printings or editions may indicate that the work has become a standard source in the area and is reliable. If you are using a Web source, do the pages indicate revision dates?

D. Publisher

Note the publisher. If the source is published by a university press, it is likely to be scholarly. Although the fact that the publisher is reputable does not necessarily guarantee quality, it does show that the
publisher may have high regard for the source being published.

E. Title of Journal

Is this a scholarly or a popular journal? This distinction is important because it indicates different levels of complexity in conveying ideas. If you need help in determining the type of journal, see *Distinguishing Scholarly from Non-Scholarly Periodicals*. Or you may wish to check your journal title in the latest edition of *Katz's Magazines for Libraries* (Olin Ref Z 6941 .K21, shelved at the reference desk) for a brief evaluative description.

II. CONTENT ANALYSIS

Having made an initial appraisal, you should now examine the body of the source. Read the preface to determine the author's intentions for the book. Scan the table of contents and the index to get a broad overview of the material it covers. Note whether bibliographies are included. Read the chapters that specifically address your topic. Scanning the table of contents of a journal or magazine issue is also useful. As with books, the presence and quality of a bibliography at the end of the article may reflect the care with which the authors have prepared their work.

A. Intended Audience

What type of audience is the author addressing? Is the publication aimed at a specialized or a general audience? Is this source too elementary, too technical, too advanced, or just right for your needs?

B. Objective Reasoning

1. Is the information covered fact, opinion, or propaganda? It is not always easy to separate fact from opinion. Facts can usually be verified; opinions, though they may be based on factual information, evolve from the interpretation of facts. Skilled writers can make you think their interpretations are facts.

2. Does the information appear to be valid and well-researched, or is it questionable and unsupported by evidence? Assumptions should be reasonable. Note errors or omissions.

3. Are the ideas and arguments advanced more or less in line with other works you have read on the same topic? The more radically an author departs from the views of others in the same field, the more carefully and critically you should scrutinize his or her ideas.

4. Is the author's point of view objective and impartial? Is the language free of emotion-arousing words and bias?

C. Coverage

1. Does the work update other sources, substantiate other materials you have read, or add new information? Does it extensively or marginally cover your topic? You should explore enough sources to obtain a variety of viewpoints.

2. Is the material primary or secondary in nature? Primary sources are the raw material of the research process. Secondary sources are based on primary sources. For example, if you were researching Konrad Adenauer's role in rebuilding West Germany after World War II, Adenauer's own writings would be one
of many primary sources available on this topic. Others might include relevant government documents and contemporary German newspaper articles. Scholars use this primary material to help generate historical interpretations—a secondary source. Books, encyclopedia articles, and scholarly journal articles about Adenauer’s role are considered secondary sources. In the sciences, journal articles and conference proceedings written by experimenters reporting the results of their research are primary documents. Choose both primary and secondary sources when you have the opportunity.

D. Writing Style

Is the publication organized logically? Are the main points clearly presented? Do you find the text easy to read, or is it stilted or choppy? Is the author's argument repetitive?

E. Evaluative Reviews

1. Locate critical reviews of books in a reviewing source, such as Book Review Index, Book Review Digest, OR Periodical Abstracts. Is the review positive? Is the book under review considered a valuable contribution to the field? Does the reviewer mention other books that might be better? If so, locate these sources for more information on your topic.

2. Do the various reviewers agree on the value or attributes of the book or has it aroused controversy among the critics?

3. For Web sites, consider consulting one of the evaluation and reviewing sources on the Internet.