

STUDENT RESEARCH THESIS MANUAL
for
UNDERGRADUATE STUDENTS

SCHOOL OF ALLIED MEDICAL PROFESSIONS
THE OHIO STATE UNIVERSITY

2008-2009

Honors Information

Information about the Honors Program and the Research Thesis is available from several sources:

1. **Student Affairs Office:** General information and copies of forms are available from the Student Affairs Office in room 127 Atwell Hall.
2. **The SAMP website:** The School's website (http://amp.osu.edu/Honors_Program) has update information on the program
3. **Honors Representatives:** Each division within the School has a designated honors representative. You may work with this faculty member or your own advisor on the development of your research proposal. (See list in Appendix).
4. **The Honors and Research Committee:** The Honors and Research Committee is composed of faculty members who set the policy and procedures for the Honors and Research Program in the School. The current chair is Dr. Margaret Teaford in the Occupational Therapy Division. She may be reached at 292-8152 or Teaford.1@osu.edu. (See list of committee members in Appendix).
5. **Ohio State University Libraries:** Copies of research theses are now available electronically through the OSU Library system. <http://kb.osu.edu/dspace/community-list>. Scroll down to Honors theses, click on it, and then click on Allied Medical Professions.

Deadlines for 2008-09

1. Junior Year Deadlines for Thesis Option (to Graduate With Distinction):

- **March 20, 2009:** Students applying for the **Summer Research Internship** through the University Honors and Scholars Center must submit their proposal to the SAMP University Honors Committee. This application may be amended prior to the May deadline listed below.
- **May 8, 2009:** Application for Graduation with Distinction **and** the Undergraduate Research Scholarship.

2. Senior Year Deadlines for Thesis Option (to Graduate With Distinction):

- **October 3, 2008:** Application for Graduation with Distinction (no scholarship).
- **May 27, 2009:** Deadline to complete an oral defense of thesis.
- **June 14, 2009:** Spring Quarter graduation.

OVERVIEW OF THE REQUIREMENTS FOR GRADUATION WITH DISTINCTION

Because the Ohio State University is a major research institution, many students have opportunities to work with faculty on research during their undergraduate experience. One of those opportunities is to develop and write a research thesis usually during the senior year. Students who successfully complete the requirements for the research thesis will graduate with distinction in their major field.

REQUIREMENTS: The program leading to “Graduation with Distinction” requires the student to develop and implement an independent research project with help and guidance from a faculty advisory committee. The student is expected to complete the proposed research, write a completed research paper and defend the work orally before his/her advisory committee. This opportunity provides academic enrichment, accelerated learning, research opportunities, contact with faculty and appropriate recognition for advanced work.

ELIGIBILITY: Students need not be part of the Honors program in the School to participate in the senior research thesis. The student must be a full time student, have a minimum of a 3.2 point hour GPA on all coursework applied toward the Baccalaureate degree, and the student must maintain a 3.5 on all courses taken in SAMP. Certificate of Study students are not eligible; however, second baccalaureate students are eligible.

APPLICATION: Students must make a formal application to the Honors and Research Committee of SAMP by the established deadlines printed in the Student Research Thesis Manual and SAMP Undergraduate Student Handbook.(see Deadlines).

Normally, projects already completed prior to admission to candidacy are not approved. The final decision regarding eligibility for acceptance into candidacy is made by the Honors and Research Committee of the School of Allied Medical Professions.

HONORS DESIGNATION ON THE STUDENT DATABASE

Juniors who have been approved to do a Research Thesis will have the “H” designation for their senior year. This designation provides the student with priority registration for classes.

TIMETABLE FOR RESEARCH THESIS: A suggested quarter by quarter timetable for students working on a research thesis is found in Appendix B.

A. THE RESEARCH THESIS PROPOSAL

Deadlines: Students should submit their proposal for a research thesis in the spring quarter of their junior year or in the autumn quarter of their senior year (see Deadlines).

What to Submit: The following items should be submitted by students who wish to submit a research thesis proposal and to graduate with distinction.

- Application to Graduate with Distinction (see Appendix) signed by student and advisor
- Copy of unofficial academic record (advising report). Copies are available from the Student Affairs Office.
- Recommendation by Research Advisor (see Appendix)

- Research Thesis Proposal (see outline below)

Outline of Research Thesis Proposal: In preparing the research thesis proposal, students should use the outline below. In addition, a copy of the form used by the Honors and Research Committee to review research proposals is found in the Appendix.

1. Problem Statement

- Clearly state the problem to be investigated and its significance in your field.
- Is this problem one of importance at the state, national, or international levels?

2. Related Research

- Review and summarize the prior research around this problem.
- Show how this study will extend the body of knowledge in this area.
- Provide a theoretical base for the research and its relationship to the problem.
- Include a reference list.

3. Objectives of the Study

- The objectives, hypotheses, and research questions should be clearly stated and logically related to the problem statement.
- The relationship to an underlying research theory should be shown.
- The objectives should be measurable and testable so that you will know if they have been met.
- The section should contain one or two hypotheses stated in a form that shows what is expected to happen.

4. Procedures

a. Population and Sample

- Describe the group from which your sample will be drawn and the method for obtaining the sample.
- Estimate the size of your sample.
- Describe your plan for approval from the IRB. (Research with human subjects will probably require review by an OSU Human Subjects Review Committee. Please discuss this requirement with your advisor to determine if such a review is necessary. **If IRB approval is required, explain when this will occur.**)
- If research is in conjunction with another research project, clearly explain your role and responsibilities independent of the rest of the project. **Explain whether/how this research can be completed if other parts of the project are stalled.**

b. Design

- Describe how the research will be conducted.
- Include a timetable for the data collection

c. Instrumentation and data analysis

- Describe what survey instruments will be used and include copies of them

- Describe the reliability and validity of the instruments
- Describe the statistical tests that will be used to analyze the data

5. Facilities and/or Resources and Equipment Needed

- Describe the facilities and other resources that are needed to conduct this research
- Provide written evidence that any other departments or outside agencies will cooperate with the research project.

Notification: The Honors and Research Committee reviews the proposals and meets within two weeks of their submission. Students are notified in writing by June 1.

B. Student Responsibilities

Throughout the research project, you have a number of responsibilities which will be summarized in this section. You are responsible for:

1. **Identifying a research advisor** who is willing to provide direct guidance for the proposed project. Customarily this advisor is a faculty member from your division.
2. **Selecting a second faculty member** to serve on the research thesis advisory committee. This person may be from any department or division of the University. The third member will be a representative from the Honors and Research Committee and will be appointed by the Chair of the Committee.
3. **Identifying a research problem to be investigated** and designing a research strategy for studying this question. The proposal must be approved by the advisory committee and the written proposal should follow the general guidelines provided in this handbook. (see above)
4. **Working independently.**
5. **Scheduling regular meetings** with your advisory committee.
6. **Making a presentation** at a professional meeting or at the Denman Undergraduate Research Forum.
7. **Setting the time and place for the oral defense** no later than the date set forth in the handbook and distributing the final copy of the thesis to the committee members at least one week prior to the oral defense.
8. Completing all requirements of the program (see below).

D. The Research Thesis Advisory Committee

The purpose of the Research Thesis Advisory Committee is to guide the student's project, monitor progress and determine whether the student should graduate with distinction. The committee consists of:

- the research advisor,

- a second faculty advisor and
- a representative of the Honors and Research Committee.

The responsibilities of the committee members are as follows:

- **Research Advisor:** Any member of the regular teaching faculty of SAMP may serve as a research advisor.(Questions? Check with your Division’s Honors Rep).

The advisor is responsible for oversight of the student's entire research project, for providing support for the development of the written research paper and for participating in the final evaluation of the worth of the project. Because of this, it is advisable that this faculty member be knowledgeable in the area of research being pursued by the student.

By becoming the student’s research advisor, the faculty member agrees to assist the student in identifying a suitable research question and developing an appropriate research design.

The advisor serves as the **coordinator of the final oral examination**, and, with the help of the Honors and Research Representative, is responsible for the final certification of eligibility for distinction.

The Research Advisor is to complete the Advisor’s form (see Appendix) and sign it. It should be submitted with the research proposal.

- **Second Faculty Advisor:** Any member of the regular teaching faculty at the University or a member of the clinical/adjunct faculty may serve on the committee. He/she must be named when the application to graduate with distinction is made.

Students may want to include someone not associated with the University. Such cases may be handled by petition to the Honors and Research Committee at the time of application.

- **Honors and Research Committee Representative**

A member of the Honors and Research Committee will be assigned to each Research Thesis Advisory Committee when the Committee approves of the Research Thesis proposal. The duties of this individual are the same as other faculty serving on the Research Thesis Committee. In addition, the Honors and Research Committee representative is expected to provide clarification of policies and procedures of the program as necessary and to keep the Honors and Research Committee informed regarding implementation of the proposed research. This is the person responsible for all required documentation and should be included in all committee meetings.

C. Requirements for Graduation with Distinction

- **Research coursework:** A minimum of three quarters in research with at least 8 credit hours of collateral reading, research and writing.
 - Students enroll for AM H680.01 which is graded A-E. **It is highly recommended that potential Honors students enroll in AM H680.01 (research class) in Autumn or Winter Quarter of the junior year if possible.**
 - During their junior and senior years, students enroll in independent study (AM

H693) as they work on their research. AM H693 is graded S/U. P may be used during the initial one or two quarters of research; however, the final quarter must be graded S/U. When the final S/U is awarded all previous P grades will convert to S or U.

iii. If the student's work is evaluated as satisfactory, but not distinguished, the student will not be certified for graduation with distinction, but may be graded S in AM H693 and receive credit for these hours which are applied toward graduation.

- **Research Thesis: An outline for a completed thesis is found in Appendix B.** Students should begin writing the research thesis during winter quarter of their senior year. It is to be completed early in spring quarter. Students graduating in other quarters should confer with the chair of the Honors and Research Committee for deadlines.

All theses will follow the format of the **Guidelines for Preparing Theses and Dissertations** published by The Ohio State University Graduate School. Go to http://gradsch.osu.edu/Depo/PDF/Handbook/Section_III.pdf.

You should pay particular attention to pages 4 to 13 of this 60 page manual. The thesis template in Microsoft word is useful for this purpose. It will create list of figures, a table of contents, and maintain the appropriate formatting.

- **Oral Defense (Examination):** In the student's final quarter, an oral examination will be administered that will certify the student for graduation with distinction. The examination must include at least a one hour defense of the research thesis. The student's advisory committee will administer the examination. **The oral defense must be held no later than May 27, 2008.**

Note: A copy of guidelines for faculty to use in reviewing the completed research thesis is found in Appendix B.

In the event the decision of the committee is not unanimous, the matter will be referred for adjudication to at least two members of the Honors and Research Committee (excluding the current committee representative). These arbitrators must reach consensus.

- **Formal Research Presentation:** The student must present the research in slide or poster format at a formal research meeting. The presentation may be made at a professional meeting within the student's discipline, at the campus-wide Denman Undergraduate Research Forum or at a school-wide research symposium. **Students are also expected to present their poster at the SAMP Research Day in early June.**

The student must submit to the Honors and Research Committee, no later than **May 27, 2009**, information on where, when and to whom the presentation was made. If the student fails to make a formal presentation, he/she will not be certified for graduation with distinction. Any extenuating circumstances must be presented to the Honors and Research Committee in writing by **May 1, 2009**.

SCHOLARSHIP AND FINANCIAL AID OPPORTUNITIES FOR STUDENTS PLANNING TO GRADUATE WITH DISTINCTION

A. The SAMP Undergraduate Research Scholarship

All students planning to *graduate with distinction* are encouraged to apply for a SAMP Undergraduate Research Scholarship. Scholarships will be awarded at the end of the spring quarter based on funding available and the numbers of approved projects. These scholarships are awarded by the School of Allied Medical Professions and application must be made to the SAMP Honors Committee. This money provides tuition for one or more quarters depending on the size of the award.

The Application is due by May 8, 2009 along with the Research Thesis Proposal.

The application must be accompanied by

- a research thesis proposal,
- a copy of the student's unofficial academic record, and
- the advisor's recommendation.

B. University Honors Summer Research Internships

The purpose of the University Honors Summer Research Internships is to provide promising **junior rank candidates** for *graduation with distinction* by supporting their research during the summer between their junior and senior years. Students are awarded a scholarship for the summer and will spend approximately 40 hours per week doing research over the quarter. Because extensive faculty supervision is expected over the summer, applicants will need to be sure that their faculty advisor is available during that quarter to help supervise their work. **A report to the Honors and Research Committee on the progress of the project is required by the end of summer quarter**

To be eligible, applicants have junior standing in the spring quarter, must be enrolled as an Ohio State University student during the summer of the award year, and be approved for candidacy for *graduation with distinction* during the senior year.

Applications for the summer research scholarships are due on March 20, 2009.

The application must be accompanied by

- a research thesis proposal,
- a copy of the student's unofficial academic record, and
- the advisor's recommendation.

The applications will be reviewed by the Honors and Research Committee which will then forward them on to the University Honors and Scholars Program for selection.

Selection will be based on

- the student's research proposal,
- the student's academic performance and promise, and

- the advisor's recommendation

Students will be informed about the summer award during spring quarter.

C. Assistance with Research

1. Pressey Honors Grants: (\$300.00 Maximum)

The purpose of the Pressey Honors Grants Program is to assist students who are candidates for graduation with distinction and who are **not** receiving other aid specifically designated for undergraduate research.

The grant money must be used for budgeted items specifically related to the research project. For example, laboratory expenses, computer time, books, photocopying, and mailing costs are appropriate, while tuition and living expenses are not.

The maximum amount for which students may apply is \$300.00. Students must be enrolled during the quarter for which they are awarded funding.

Applications should be submitted to the SAMP Honors and Research Committee for their review. Applications are available on the OSU Honors website http://honors.osu.edu/honors_index.html.

2. Rosita Schiller Awards (\$350.00 maximum)

Modest funding is also available from the School of Allied Medical Professions to support the expenses of doing undergraduate research. These funds are available to support the cost of performing the research for the Research Thesis and are intended to help defray the costs of equipment, supplies, mailing costs, and postage. Application for these funds should be made at the time of the submission of the honor's proposal.

Applications are available on the SAMP website (www.amp.osu.edu) The rationale for the request should be clearly stated. The advisor's signature is required.

APPENDIX A

FORMS FOR RESEARCH THESIS AND SCHOLARSHIP ASSISTANCE

APPLICATION TO GRADUATE WITH DISTINCTION 2008-09

**SCHOOL OF ALLIED MEDICAL PROFESSIONS
THE OHIO STATE UNIVERSITY**

() Graduation with Distinction Date _____
() Undergraduate Research Scholarship

Name: _____ Major: _____

GPA _____ (must be 3.2) Quarters completed _____ GPA in SAMP: _____ (must be 3.5)

Expected quarter of graduation: (circle one) Au Wi Sp Su year: 20____

Project advisor: _____ E-mail: _____

Address: _____ Phone: _____

Additional Advisory Comm. Member: _____ E-mail: _____

Address: _____ Phone: _____

TITLE OF PROJECT: _____

If applying for Research Scholarship, are you receiving any other scholarship award? Yes ____ No ____ If yes, please list awards and amount per quarter you are receiving. _____

(Use back if necessary)

Necessary Attachments:

- Copy of **unofficial academic record** (advising report). This is available from the Student Affairs Office.
- **Research Proposal** describing proposed project including problem statement, objectives, methods and procedures, resources available, etc.
- **Recommendation of Research Project Advisor** form is required.

Student signature: _____ E-mail: _____

Advisor's signature: _____

Approved: _____ Date: _____

Chairperson, Honors and Research Committee

SAMP UNDERGRADUATE RESEARCH THESIS PROPOSAL
RECOMMENDATION BY RESEARCH PROJECT ADVISOR

STUDENT NAME: _____

Deadline for application and recommendation: **May8, 2009.**

Research Advisor: Your careful assessment of the significance and feasibility of this project and of the student's ability to carry it out is very important to the success of his application.

What is the significance of the proposed project?

Given a time period of one academic year and resources available or to be obtained with the project stipend, is the project feasible?

How well prepared is the student to undertake the project?

Are you willing to commit yourself to, and does your schedule permit, supervision of the project throughout the scholarship period?

Comments:

Name: _____

Signature: _____

Campus address: _____

Phone: _____ E-mail: _____

Explanation of Items	Dollar amount requested (no cents)
Equipment (e.g. evaluation kits, Recording equipment, cameras)	
Materials and Supplies (e.g. laboratory supplies, film, supplies needed for the project)	
Subject payments (include number of subjects and total payment to each participant)	
Mailing costs	
Other expenses (e.g. testing costs such as duplication or printing)	
TOTAL	

Budget Justification: Provide a rationale for requested funds.

Student Signature

E-mail address

APPROVAL OF THESIS ADVISER:

I support the application of _____ for the Rosita Schiller Award.

Name of Advisor

Signature of Advisor

DATE

e-mail address

Student's Name _____

Date _____

Major: _____

Reviewer: _____

SAMP HONORS THESIS PROPOSAL EVALUATION	Unsatisfactory 1	Fair 2	Good 3	Excellent 4
PROBLEM STATEMENT Comments:				
RELATED RESEARCH Comments:				
OBJECTIVES OF THE STUDY Comments:				
PROCEDURE: POPULATION AND SAMPLE Comments:				
DESIGN Comments:				
INSTRUMENTATION AND DATA ANALYSIS Comments:				
FACILITIES AND/OR RESOURCES EQUIPMENT NEEDED Comments:				
MECHANICS OF PRESENTATION: readability, language, use, organization of material, grammar, spelling				
Relative Score				

CERTIFICATE OF COMPLETION OF RESEARCH THESIS

**THE OHIO STATE UNIVERSITY
SCHOOL OF ALLIED MEDICAL PROFESSIONS
HONORS AND RESEARCH COMMITTEE**

This is to certify that _____

has undergone the required examination* for graduation with distinction and that the quality of both the written and oral work is such that he/she (should) (should not) be graduated with distinction in:

Advisor

Committee Member

Honors and Research Committee Representative

Date

*The final honors examination may be both written and oral but must include an one-hour oral examination before three members of the teaching faculty, one of whom is a representative of the Honors and Research Committee. All must sign this report form. The form should be returned to the Student Affairs Office at SAMP.

Title of Research Thesis: _____

Research Thesis has been submitted to Knowledge Bank: ____ Date: _____

APPENDIX B

Timetable for Research Thesis Candidates

Autumn/Winter Quarter of Junior Year

- **Honors students should enroll in Allied Med H680.01**
- **Honors students should also enroll in AM H693 (under the call number of the student's Honors adviser).**
- Review the Guidelines for Graduation with Distinction in the School of Allied Medical Professions' Thesis manual
- Make notes of the application deadlines for the honors program and honors scholarships.
- Enlist the help of a project advisor and begin to identify possible research problems you may wish to study.
- Review other honors projects completed by students in the School to get a concept of the scope of these studies. Completed Honors projects are available on-line through the OSU Libraries. (<http://library.osu.edu/sites/kbinfo/honors.html>).
- Attend informational meetings on the research thesis in SAMP.

Winter Quarter Junior Year

- **Identify the problem that you would like to study.** This is the appropriate time for you to become familiar with the literature in the area of your research
- With the help of your advisor, **find another faculty member** to serve on your committee. Continue to refine your research project with the help of your committee members.
- Work closely with your committee members as you develop the written research proposal.

Spring Quarter of the Junior Year

You have two opportunities to submit your Application for Graduation with Distinction which includes your proposal for the research thesis.

1. **Summer Research Internship:**

- You may wish to work on your research during the summer between your junior and senior years. You may apply for support with the Summer Research Internship through the OSU University Honors and Scholars Center.
- Applications for summer support are due by **March 20, 2009**. Students who meet this early deadline are free to revise their proposal for submission in May for the Undergraduate Research Scholarship.
- If you wish to apply for funding to cover your research expenses, you may apply for funding up to \$350 from the Rosita Schiller Fund.

2. **The Undergraduate Research Scholarship**

- You may wish to apply for an Undergraduate Research Scholarship which you may use during your senior year. The application and research proposal must be submitted by **May 8, 2009**.
- If you wish to apply for funding to cover your research expenses, you may apply for funding up to \$350 from the Rosita Schiller Fund.

Note: Off quarter graduates must meet the Spring Quarter deadline if they wish to receive scholarship funding.

Autumn Quarter of Senior Year

- If you wish to apply for Graduation with Distinction without the scholarship assistance, you may apply as late as the autumn quarter of your senior year. You follow the same procedure for developing your research proposal.
- Your application must be submitted to the Student Affairs Office by **Friday, October 3, 2008**.

Time Table for Senior Year

Autumn Quarter

- During this quarter, you are expected to complete your literature review and prepare for your data collection.
- If you received summer scholarship assistance, please send a short report to the honors and Research Committee on your progress.
- Please keep in touch with your advisor and the other faculty member on your committee. Do not let problems get out of hand.

Winter Quarter

- During this quarter, you are usually collecting and analyzing your data. You may begin to write up your results.
- Again keep in touch with your advisor.
- Register to present your research at the annual Denman Undergraduate Research Forum or a professional meeting.

Spring Quarter

- Complete the research project by writing your research thesis.
- Make a formal scientific presentation at a professional meeting or at the Denman Undergraduate Research Forum.
- **You must schedule an oral defense no later than May 27, 2009.** Check with your advisor, the other faculty member on your committee, and the representative from the Honors and Research Committee. **You** are responsible for reserving the room for the oral defense and securing AV equipment for the presentation. Rooms in Atwell Hall are scheduled in Rm. 127 (292-1706). AV equipment may be scheduled through Bruce Noskowiak in SAMP (688-5487).
- The completed thesis must be distributed to the committee **no later than one week preceding the oral defense.**

Guidelines for Preparing a Complete Research Thesis

All research theses must follow the format of the **Guidelines for Preparing Theses and Dissertations** published by The Ohio State University Graduate College. The completed thesis should include the following sections. Use the questions below to check that you have covered all of the information issues in each section.

Title Page

A brief statement which best expresses the main considerations of your research question.

Abstract and Vita

An Abstract and Vita are not required for the proposal. An Abstract is required at the time of the defense.

Table of Contents

Follow the guidelines in the manual. List the major sections with their page number.

Chapter 1

- a. Problem Statement

- b. Review of Literature

- c. Objectives (purpose)

Chapter 2

- a. Methodology
- b. Population and sample
- c. Design
- d. Data and Instrumentation
 - Include copies of instruments in text or Appendix.

Chapter 3

- a. Results
 - Use APA style for all tables, charts, and figures.
- b. Discussion
 - Include limitations and application to practice

Reference list

For Members of Thesis Committee:

Guidelines for Reviewing Completed Thesis Prior to Oral Defense

Below are some suggestions of points to consider as you review the completed thesis prior to the oral defense.

Chapter 1

This chapter is the Introduction to the thesis. It describes the problem to be investigated, review of literature, purpose of the study, and hypotheses to be tested. Below are some guidelines to ensure that the student addresses these important components of Chapter 1.

a. Problem Statement

- Does it explain the problem and its significance for the field?
- Does your problem statement convince the reviewer of the importance and need of the proposal?
- Is the problem one that has generality beyond the local scene?
- Is it complete, but brief and to the point?

b. Review of Literature

- Does this section review and summarize the pertinent research and include sources of special importance?
- Does the section discuss the proposed study in relation to previous and on-going research, and indicate how the study extends the body of knowledge about the area.
- Does the section demonstrate a knowledge of the literature and make clear the theoretical base for the study if there is one.
- Have those materials been carefully selected which most directly bear on the problem? Do they include the recent literature in both content and method?
- Have they been summarized so that the reviewer need not know the articles to sense their significance?
- Does this study test a theory or contribute to its extension in some way?
- If there is no literature bearing on the problem, has the writer indicated the studies closest to the problem and indicated why they fall short, if it is not self-evident? Is there evidence that the writer has made a scholarly attempt to find his predecessors in the field?
- Are the references listed clearly used in the development of the research?

c. Objectives (purpose)

- Is the relation of this section to the problem statement clear?
- Do the hypotheses or questions clearly flow from the problem statement? Is material provided which makes this relation clear?

- Are the objectives, questions, and/or hypotheses listed in order of importance or potential contribution?
- Is the relationship of the objectives to underlying theory shown?
- Are the objectives clean-cut, specific, and achievable and do they lend themselves to operational definitions?
- Are these statements consistent with the procedure section? Is more claimed here than the procedures will support? Are there aspects of the procedure and analysis that are not reflected here?
- Are the hypotheses and questions testable? Are value judgments which may have crept into treatment of the problem separated from the researchable questions which data can answer?
- Are the hypotheses stated in a form which indicates what is expected to happen? Are hypotheses used where there is a basis for predictions? Are questions used where there is no such basis (exploratory or some survey studies)?

Chapter 2

c. Methodology

- Are the methods in concert with the type of research proposed?
- Did the methods allow the goals of the study to be accomplished?

b. Population and sample

- Does this section describe the group from which the sample was drawn, the method of sampling and the rationale for the sampling method?
- Does it indicate what controls by stratification or other means were employed? Does it indicate the method by which individuals were assigned to any groups involved in the study, and the rationale for the assignment method if other than random?
- Does the section indicate whether there were experimental and control groups, and the types of data to be collected on each?
- Is the basis for stratification or other controls given? Why were certain factors chosen for control, and certain others omitted?
- Is the unit of sampling used consistent with that implied by the hypotheses?
- Is the basis for sample size indicated? Was the sample size consistent with the methods to be employed (e.g., so that follow-up of drop-outs and non-returns was practical)?
- Is the sampling plan consistent with the statistical model used for analysis of the data?
- If there is no formal sampling plan but a convenient sample is being used, is there an indication of how this is justified and how the results are expected to generalize?

Design

- Are all hypotheses or research questions accounted for in the design plans? Do all aspects of the design plans have a counterpart in the objectives section?
- Have some of the common design errors been avoided:
 - provide for a control group if one is needed?
 - take into account the Hawthorne effect?
 - choose under- and over-achievers correctly?
 - look for the effect of pre-testing subjects?
 - watch for growth or maturation effects in a long-term study?
 - look for practice effect in retests?
 - look for potential selective loss of cases?
 - look for factors resulting in biased assignments to the experimental and control group?
 - make sure that the control group is given all aspects of the treatment but the experimental one?

Data and Instrumentation

- Does the section tell how the data was gathered and the collection methods used?
- Are operational definitions given for all variables in the hypotheses or questions?
- Have the copies of instruments (tests, questionnaires, etc.) been included?
- Is information on the reliability and validity of the instruments been included?

Results

- Do all charts, figures, and graphs follow APA style and are they easy to read?
- Are all results shown in table form or where relevant described in the text?
- Are all results related to the hypotheses listed above?

Discussion

Reference list

- Are all references cited in the text listed on the reference list?
- Do all references follow APA style?