

Alabama A&M University Master's Research Report Guidelines



School of Graduate Studies

Alabama A&M University

Revised 2018

Overview

The fundamental purpose of a Master's Research Report involves cultivating an understanding a process for writing scholarly research that reflects and is a direct result of research conducted by the graduate student during his or her matriculation at Alabama A&M University. The Master's Research Report will contribute further knowledge and content that is useful to various fields of study, research development, and general audiences.

Graduate writing guidelines specifically outlined in this guide create a model for the overall format and design standards for all Master's Research Reports completed at Alabama A&M University. These standards must be met prior to receipt of final approval of all graduate requirements having been met and fulfilled.

As a graduate student at Alabama A&M University, you are writing a Master's Research Report in partial fulfillment of the requirements for an advanced degree. If there are conflicts between the styles or requirements set forth in this manual and those in your discipline's department guidelines, the current Master's Research Report guidelines manual takes precedence. If you have any questions concerning format requirements, do not hesitate to contact the Graduate Office.

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Introduction

Purpose of the Guidelines Manual

Part of the requirements for an advanced degree includes completion of a research report. The purpose of this manual is to serve as a guide for the preparation of research reports as required by the Graduate Office. The conventions and rules described within these guidelines ensure that research reports produced and completed will be uniform in regards to general appearance and section sequences within the document. Specific effort has been made to simplify this manual in order to maximize its applicability across disciplines and to improve its usefulness to the student. Additional resources that provide assistance in the use of format style are listed in the Appendices.

Ethical Responsibilities of the Graduate Student Involving Plagiarism

Completing a research report is a scholarly achievement that reflects not only the student's depth of knowledge, but also his or her professional integrity. Particular care must be exercised to properly acknowledge all cited works and copyrighted materials.

Plagiarism and Self-Plagiarism is an unacceptable ethical violation and can be grounds for dismissal from academic study at Alabama A&M University.

When a writer uses the ideas or words of others, the source of those ideas must be cited. Plagiarism is the act of copying the language, structure, idea, and/or thoughts of another and passing it off as one's own work. Self-plagiarism is the act of producing one's work as if new for the first time. Use of one's own words should be restricted to one paragraph with an accompanying citation.

When the candidate submits a proposal for format approval, he or she is asserting that his or her work is original and has not been plagiarized in any form. In addition, by signing the student's cover page, members of the advisory committee are also stating that they believe the student's work is original and that the integrity of the university has been maintained. Penalties for plagiarism, a serious academic offense, are specified in the graduate school catalog.

If a student extensively uses copyrighted material, permission must be obtained from the owner of the material. If the copyrighted material used is only a very small part of the total work, for example, a few lines out of an entire novel, generally, permission need not be obtained. Material intended to be consumable such as survey forms, tests, activities, or handouts used for teaching, etc. may not be used without permission. Once permission has been obtained, source(s) of material should be properly cited.

Preparing the Research Report

Responsibilities

Role of the Student

It is the objective of the student to identify and analyze the components of a research project and to produce a profound Master's Research Report. The student must be in frequent communication with his/her Advisor providing drafts of the document for review and analysis. The exchange with the Advisor should result in the approval of each step of the writing process. The student must not should wait until the last month prior to graduation to begin or complete this process. The student should start the process early in the semester in order to meet the published deadline in the Calendar-At-A-Glance for the graduation term. The student should consult with the AAMU Reviewer staff on a regular basis for assistance with grammatical and formatting standards. Each semester workshops will be facilitated to provide guidance in the writing, formatting, and ethical ramifications each semester. The student is required to attend at least two of the workshops.

Role of the Major Advisor

It is the responsibility of the Advisor to meet with the student to advise, assist and edit his/her research to completion. This would entail ensuring that the document has met the professional competences through organization, quality of analysis, and has successfully communicated its findings. All revisions must be made before the document is submitted to the research Advisor for critical assessment of the content, style of writing, technical quality and appropriate formatting in accordance with the AAMU Master's Research Report Guidelines prior to submitting to the AAMU Reviewer. The review and approval of the students' Master's Research Report is an electronic process. The advisor/chairperson must submit your document to aamu.reviewer@aamu.edu for consideration of approval.

Selecting a Research Topic

In conjunction with the Project Major Advisor or instructor, the student will select a research topic studied in one of his or her courses. This topic must be relevant to the student's area of study.

Writing Style

The writer of the research report should convey his or her content and ideas in a clear, unified, and precise manner. Writing should be free of bias, linguistic features that detract from the content, and must include accurate usage of grammar conventions.

All research reports must conform to an accepted style manual, APA, approved by the Graduate School, which sets guidelines for references, tables, figures, margins, page numbering, quotations, etc. Research reports not using the approved style or using more than one style will not be accepted and will be returned to the student.

The following style manual is available at most local bookstores: *Publication Manual of the American Psychological Association*, (6th ed.) published by the American Psychological Association, Washington, D.C., 2010. APA is the style most frequently used in the sciences, engineering, and social sciences.

Format for the Master's Research Report

What Font Type is Appropriate to Use?

The choice of font type has a significant effect on the overall appearance of the finished research report. Per APA, a 12-point, general font like Times New Roman, should be used consistently throughout the document. All pages including the text, tables, figure captions, page numbers, and appendices must all be in the same font for consistency.

Parts of a figure may be in a different font. A smaller font size such as 10-point, no smaller than 8-point and no larger than 14-point, may be used in the tables if its use enables the positioning of a table onto one page. A 14-point font may be used for the chapter numbers and title. A larger font size such as 14-point may also be used to emphasize the title on the title page.

What is a Widow?

Care should be taken to observe the customary rules about widow, orphan, and headers. A “widow” is part of a line from the end of a paragraph that is carried to the next page. Adjust the text to eliminate these. A header should not be put at the bottom of a page unless there is room for the header and at least two lines of text. If there is insufficient room, place the header on the next page.

Margins

The margins for each page of the research report (preliminary pages, text, references) – must meet the following specifications, measured from the edge of the paper to the text:

Left	1 ½ inch
Right	1 inch
Top	1 inch
Bottom	1 inch

This margin is inviolable. The final lines of a paragraph or a table or the page number must be accommodated without violating the minimum margin of one inch of white space at the bottom.

Holes or perforations are not permitted in any of the margins. Some reproduction or photocopying processes magnify or spread the material, which may necessitate more careful attention to the margin spacing. The text may be either “justified” or “left justified” as long as it is used consistently throughout the entire thesis. However, when using justify students are responsible for ensuring that the spacing between words and letters conform to the style guide selected by their department of study. Tabs should be used for a consistent offset at the beginning of each paragraph and must be of a uniform spacing (five spaces).

Pagination

Starting with the body and continuing through the manuscript, each page must be accounted for and numbered using Arabic numbers. Although the title page is counted, a number is not placed on the title page itself. Numbers on all pages including the first page of every major division of the research report are placed one inch above the bottom edge of the sheet and centered.

Numbering Tables, Figures, and Appendices

Each table and figure used within the report must be given a unique number and a title. Arabic numbers are used for both tables and figures. Tables and figures are numbered independently of each other. See Appendix C and D.

Organizing the Research Report

Most research reports include the definition of a problem, a hypothesis, experiments conducted, and conclusions drawn. While variations in the order of the content may depend on the discipline, the following features should be included in the overall format of the manuscript. **Title, Abstract, Introduction, Body, Results, Conclusions/Summary/Discussion, and References.**

Title

The title serves as a guide for others who wish to gain more information about what has been done in your research. Therefore, it is doubly important to select a title that is a meaningful and concise description of the contents of the research report.

The title should be uppercase and double-spaced. The name of the student should be uppercase and must appear in the same form as he or she is registered at the University. A statement that the document is submitted in partial fulfillment of the requirements for the degree of (name of degree program) in the (name of Department) in the School of Graduate Studies, should appear in lowercase. Followed by Alabama A&M University, Normal, AL 35762. The date on the title page must indicate the month and year that the student will actually receive the degree. **See Appendix A.**

Abstract and Key Words

The ABSTRACT should contain a rationale or justification for the study. Generally, a brief account of the purpose, need, and significance of the investigation is given. The objectives must be clear and concise. A brief account of the methodology is provided, particularly those parts that are unique. The results and principal conclusions are also provided. The abstract should not merely repeat the title, nor contain illustrations or tables, use abbreviations, or cite references. It should be an accurate reflection of the original findings reported in the body of the master's report and should be between 150 and 250 words.

The abstract with attendant key words should be placed on its own page in the master's report. The title of the document is repeated about the abstract. Two lines, down, the author of the document is indicated, followed by the degree sought (abbreviated), institution, year, number of pages in the master's research report manuscript and the major advisor. The abstract must be doubled-spaced beginning two lines beneath the author line.

Two lines beneath the abstract, identify the key words that have been selected to augment those used in the title. A key word is a word that others would search for if they were trying to locate your work using a search strategy. Usually three to five key words are selected. Do not use the same words again that have been used in the title since those words are indexed already as a function of being in the title. **See Appendix B** for the format of the Abstract and Key Words.

Introduction

The introduction is the first chapter of the master's research report. The word INTRODUCTION is the title of the first chapter (or major division) and its placement is consistent with that of the other chapter titles. Items such as background information, the definition of the problem, imitations and delimitations of the study, hypothesis or research questions, significance of the study, and a brief forecast of what the remaining parts of the report will include are typically included in this section.

Body

This section of the document includes a discussion of the research conducted. It should include the work done, topic explored, experiment completed, and procedures explored as related to the research report. Each report must be divided in some manner of logical organization. Each chapter must be numbered consecutively using Arabic numerals, beginning with number 1 on a new page. The chapter number and title (or section number and title) must be in all capital letters. A chapter or section title, which required more than one line, is to be double-spaced and centered.

Any logical means of subdivision within the chapter or section is permissible, but the scheme used must be consistent throughout a chapter (or a section). Some chapters may not require subdivisions, while others may require one or more levels for clear organization. The preferred form for first order subdivision is left justified, bold, and underlined; for second order subdivisions, a centered heading; and for a third order subdivision, an italicized paragraph heading.

Preparation of Tables

A table is an array of information presented in columns and consists of numbers and/or words. In the text, a table should appear as closely as possible to the point where it is first discussed, usually no farther than the page following. Table captions should be placed above the table, should be numbered using Arabic numbers, and end with a period.

Tables can be arranged either vertically or horizontally on a page. With a table whose size or format requires horizontal placement, the bottom of the table faces the outside (or unbound) edge of the page. The table, table number, and caption should be oriented so that they can be read when the page is rotated 90° clockwise. Proper margins must still be maintained with particular attention paid to the 1 and ½ inch margin of the binding edge. The page number should appear in the usual position at the bottom of the page. If more than one-half page in length, an individual table should be put on a separate page. More than one table can be put on an individual page if captions can be placed in their proper positions and if adequate space (at least ½ inch) is provided between tables. **See Appendix C.**

A table can be incorporated directly in the text if it is small (less than one half of the page in length), it can be confined to one page, and it occurs in numerical order after its first mention in the text. The table must be offset by a double space preceding and following it.

If a table is very long and must be typed on more than one page, show the table number on the additional page(s) with a notation of continuation. Show all column headings as necessary on the additional page and footnote on each page where the information applies.

Preparation of Figures

Some general guidelines for the production of figures are listed below:

- Use line graphs for continuous data and bar graphs for discontinuous data
- Use consistent symbols throughout
- Designate the curves with individual labels or use an inserted legend to differentiate between treatments.
- Avoid wasted space.

In the text, a figure should appear as closely as possible to the point where it is first discussed, usually no farther than the page following. Figure captions should be placed outside and at the bottom of the figure two-line spaces below it and followed by a period. **See Appendix D.**

If placed horizontally on the page, the bottom of the figure should be at the right side of the page, with allowances for the proper margins. The caption must be oriented to be read with the figure. The page number should appear in the usual position at the bottom of the page.

Figures less than one-half in length (including caption) may be placed within the text. The figure should be set off with two lines preceding the following its placement in the text. If more than one-half page in length, an individual figure should be put on a separate page. More than one figure can be put on an individual page if captions can be placed in their proper positions and if adequate spaced is provided between the figures (at least ½ inch apart). Figures with component parts may be titled as one figure, with the alphabetical designation placed below and to the right of the individual part and caption placed below the entire group.

Results and Discussion

Relevant data, observations, and findings should be included in this section as results of the research. The student may make use of tables, figures, charts, etc., to display research findings appropriately and effectively. Results and a discussion of the results are intertwined and can be addressed in this same section. Provide information about the meaning of the results and how they relate to the significance of the research report. For example, has a solution to the study problem surfaced and to what extent?

Conclusions and Summary

This section should include all primary conclusions of the research project and directions for future research in reference to the research topic based on conclusions drawn. This includes a summary of the research report objectives and findings.

References

Any research report, which makes use of other works, either in direct quotation or by reference, must contain a references page. The heading, REFERENCES, is centered, without punctuation, two inches from the top of the page. The first entry begins four line spaces below it. References are double-spaced between entries and single-spaced within each entry. Reference entries should conform to APA and should be in alphabetical order throughout.

A

APPENDIX A
SAMPLE TITLE PAGE

This page (shown at 60% of normal size) illustrates the format to be used for the Master's Research Report title page.

**PATHOGEN CROSSING PLACENTAL BARRIER FROM MOTHER TO
FETUS: ZIKA VIRUS CAUSING MICROBIOLOGY**

by
KRISTEN J. BYRD

A MASTER'S RESEARCH REPORT

**Submitted in partial fulfillment of the requirements for the degree of
Master of Science in Biology
in the Department of Biological and Environmental Sciences
in the School of Graduate Studies**

Alabama A&M University

Normal, Alabama 35762

December 2017

Source: Kristen J. Byrd, "Pathogen Crossing Placental Barrier from Mother to Fetus: Zika Virus Causing Microbiology" Master of Science/Biology, Department of Biological and Environmental Sciences, Alabama A&M University, Normal, AL, December 2017.

B

APPENDIX B

SAMPLE ABSTRACT AND KEY WORDS

This page (shown at 60% of normal size) illustrates the format to be used for the page containing the abstract and keywords. Notice that key words are identified and do not duplicate words already used in the title.

PATHOGEN CROSSING PLACENTAL BARRIER FROM MOTHER TO FETUS:
ZIKA VIRUS CAUSING MICROBIOLOGY

Kristen J. Byrd, M.S., Alabama A&M University, 2017. 30 pp.

Major Advisor: Dr. Florence Okafor

This paper follows the studies of a few published articles that all reach to study further into questions about a flavivirus crossing the placental barrier and the birth defects caused by the pathogen. There lies a strong possibility of an infectious pathogen, Zika Virus (ZIKV), crossing the placental barrier causing a congenital defect, microcephaly. The analysis displays the infection ZIKV in primary human placental macrophages, referred as Hofbauer cells (HBC), and in placental villous fibroblasts. The researchers also observe the Hofbauer cells infection of Zika virus, or placental villous explant. The movement activity of the HBC may help dissemination and spread the ZIKA, possibly across the placental barrier causing a defect to the fetal brain, such as microcephaly. The understanding of the relationship between the two can clarify the position and how they affect one another. Further work and tests will assist the association of the ZIKA virus disease and a brain defect and can even discover preventions, treatments, and possibly cures as well.

KEY WORDS: Zika virus, macrophages, microcephaly

Source: Kristen J. Byrd, "Pathogen Crossing Placental Barrier from Mother to Fetus: Zika Virus Causing Microbiology" Master of Science/Biology, Department of Biological and Environmental Sciences, Alabama A&M University, Normal, AL, December 2017.

Sample Page with Table Integrated into text

This page (shown at 60% of normal size) illustrates the format to be used for integrating tables into the text. This method is used only for small tables, which constitute less than one half of the page in length.

twice as high as that in leaves of seedlings grown in the growth chamber.

Since stomata basically are confined to the abaxial surface, we only used the abaxial surface in density counts. Stomatal densities were significantly higher in the IBA control than in the PAC-treated leaves (Table 5-3). The stomatal density of UNI-treated leaves was lower than the control but not significantly (Table 5-4).

Table 5-4. Stomatal density and conductance means*. Source

IBA	Stomatal Density No./square cm	Stomatal Conductance cm ² /sec
Uniconazole	507.34 a	0.64 a
Paclobutrazol	526.67 b	0.57 a

* Each mean represents 6 replications.

The stomatal density of Line #4 leaves also was significantly lower than Line #2. Perhaps PAC affects water loss during the stressful acclimatization phase in part by decreasing the density and conductance of stomata normally altered by the in vitro environment. UNI is less mobile than PAC through xylem translocation (Sterrett, 1987) and therefore a slightly higher concentration of UNI applied in vitro could possibly significantly affect stomatal density favorably without overly retarding in vitro growth.

Stomata (guard cells and aperture) on leaves of the IBA control were slightly more circular in shape than either the triazole-treated or the greenhouse seedling stomata. In control plants sampled immediately after removal from culture, 90-95% of the stomata were open as determined by SEM. This contrasts with both the triazole-treated and the greenhouse-grown plants at 50-55% (Figure 5-9 and 5-10).

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Source: Marybeth Knust Eliasson, "Intro to Acclimatization of Genotypes of *Prunus serotina* using Triazole Growth Retardant Pretreatments." Master of Science Thesis, Department of Plant and Soil Science, Alabama A&M University, Normal, AL, July 1992.

SAMPLE PAGE WITH FIGURE INTGRATED INTO TEXT

This page (shown at 60% of normal size) illustrates the format to be used for integrating figures into text. This method is only used with small figures that constitute less than one half of the page in length.

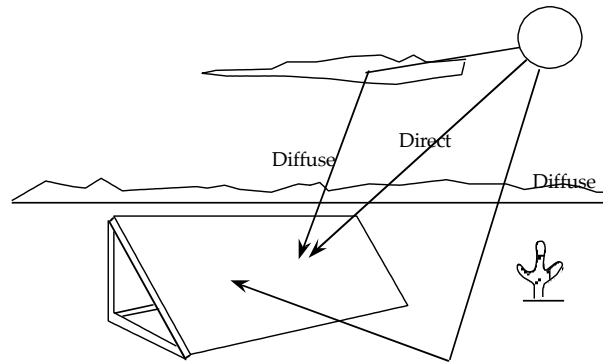


Figure 1.9. Distinction between direct and diffuse radiation.

The difference between direct and diffuse sunlight is important in one sense. Many of the existing concentration PV systems simply cannot use diffuse light. Most conventional optical equipment such as lenses can carry out their concentration function only when the light comes in at normal incidence to the surface of the lenses. If light is not normally incident (or is diffuse), then these lenses simply cannot focus the light in the direction and distance desired. See Figure 1.9.

Furthermore, diffuse light occupies a sizable portion of the total (or global) sunlight, reaching anywhere between 20% to 60% at different regions of the earth. Hence a PV design made with circumspection should never overlook the need to successfully tap into diffuse radiation. Holograms are devices that possess some angular tolerance; i.e. they can use diffuse radiation to a certain

Source: William Sheng-Te Tang, "The Investigation of a Cost-Conscious Holographic Solar Concentrator." Master of Science Thesis, Department of Physics, Alabama A&M University, Normal, AL, May 1995.

This page (shown at 60% of normal size) illustrates the format for preparing the references section at the end of the Master's Research Report.

Note that the references are single-spaced within each entry but double-spaced in between entries.

REFERENCES

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Source: Bin Pan, "Effect of Peanut Flour Supplementation of Textural and Rheological Changes of Wheat Dough during Microwave Baking." Master of Science Thesis, Department of Food Science and Animal Industries, Alabama A&M University, Normal, AL, July, 1994.

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