MASTER OF SCIENCE PROGRAMS IN

BIOMEDICAL SCIENCES
CELL & DEVELOPMENTAL BIOLOGY
FORENSIC BIOLOGY
FORENSIC TOXICOLOGY
HUMAN GENETICS & GENETIC COUNSELING
MICROBIOLOGY & IMMUNOLOGY
NEUROSCIENCE
PHARMACOLOGY

CAPSTONE PROJECT THESIS GUIDELINES

Procedures for completion and Presentation

Release 4.1
Effective September 2023

THOMAS JEFFERSON UNIVERSITY
College Of Life Sciences
Philadelphia, PA 19107
215-503-5799

CAPSTONE GUIDELINES

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GUIDELINES FOR MASTER OF SCIENCE CAPSTONE PROJECT

The purpose of the Capstone Project Guidelines is to provide an academic procedural guide for the Master of Science student at Thomas Jefferson University College of Life Sciences who are participating in the Capstone Project (Non-Laboratory Capstone) Option. The described procedures will assist in preparation and approval of the Capstone proposal, committee meetings, preparation of the written report and the oral presentation and defense of the Capstone Project. All of the necessary forms and a Milestone Stage Contract and Checklist are provided with this document.

DESCRIPTION AND PHILOSOPHY

This new option is designed to benefit individuals with current positions or career goals in regulatory affairs, clinical research, industry, government, secondary education, and other professions who desire the didactic classroom exposure afforded by advanced graduate studies in the Life Sciences but for whom a traditional laboratory research-based Master's research Capstone may not be the most appropriate option to advance their career. The new Capstone option will still require 40 credits for completion.

Like the laboratory-based research Capstone option, the Non-Laboratory Capstone option still requires 6 (six) credits of Master's Capstone Research culminating in a Capstone Project that will result in a research Capstone. The Capstone Project is expected to result in a formal scholarly work reflecting integration of the scientific knowledge and technical and management skills learned in the program through didactic course work. The focus area is chosen jointly by the student and the Capstone Advisor with the approval of the student's Program Director. This Capstone Project will result in a scholarly paper that may represent a scientific policy discussion, an analysis and solution of a real life problem at the student's place of employment, program planning and evaluation perhaps in response to a changing regulatory environment, a strategic or tactical plan for implementation of an activity in the workplace, development of new science education materials at the K-12 level, or a detailed discussion of a specific scientific research topic of particular interest to the student.

Though the content of the final products will differ, all project proposals must include the aims of the project, background research including a literature search and assessment of current information in the area, problem definition and key determinants of the problem, a description of the methodologies to be used for analysis or development, and the conclusions or

recommendations with commentary on questions requiring further study. The Capstone Project Capstone will be presented formally and defended in a public forum in a manner similar to the defense of a traditional laboratory research-based Capstone. It is anticipated that the process of developing and completing the final Capstone Project Research Capstone will represent approximately 6-8 months of effort on the part of the student.

OBJECTIVES

The student will:

- Enroll in the Master's Capstone Research course appropriate for your program. As with the lab-based research Capstone, timing of enrollment for the Master's Capstone Research credits for the purposes of the Capstone Project Capstone Option is dependent upon many issues that the student should discuss with their Program Director. It would be anticipated that the student would enroll in Capstone Research at the initiation of the Capstone Project activity;

- With the assistance of their Program Director, identify a Capstone Project Advisor who is knowledgeable in the area(s) relevant to the suggested Capstone Proposal. The Capstone Project Advisor may be the Program Director, but this is not required. This process should be initiated at least 7-10 months prior to the expected date of program completion;

- Submit a signed copy of Capstone Contract and Checklist to the MS Admin Coordinator, alexandra.whitman@jefferson.edu. Keep the original for your records as a checklist of your progress and upcoming commitments (See Page #21). This form should be updated and resubmitted at various milestones during your program as a checklist of your progress as noted on the form;

- Select a final developed project topic. The student should develop the topic in consultation and discussion with the Capstone Project Advisor;

- Review the relevant literature;

- Identify members of the Capstone Project Committee (See Page #5) who will work with the student and the Capstone Project Advisor;

- Develop a formal proposal;

- Submit the written proposal and plan to the Capstone Project Committee explaining:

- The topic to be addressed;
- The aims of the project to be undertaken;
- The methodology to be utilized;
- The outcome anticipated by the student;
- The members of the Capstone Committee (See Pages #5);

o Prepare and present an oral presentation of the Capstone Proposal to the Capstone Committee (This is Meeting #1:See below);

o Execute the Proposal;

o Meet with the Capstone Advisor and Capstone Committee as described below. These meetings should be documented on the Record of Committee Meetings form (See Page #9) and noted on the Milestone Stage Contract and Checklist form (See Page #21):
  ▪ Meeting #1: Proposal presentation to Capstone Committee

  ▪ Meeting #2: Interim progress report (more than one meeting may be required)
  ▪ Meeting #3: Oral presentation to the Capstone Committee of the final results for approval (*NOTE*: This is not the formal public Capstone Project Capstone presentation and defense).

o Submit a rough draft of the final project Capstone to the Capstone Committee for review and approval;
o Implement revisions to the final research Capstone as suggested by the Capstone Committee;

- Upon approval by the **Capstone Committee** and the **Capstone Advisor,** the student should, schedule a formal public Capstone presentation. Three such opportunities are available during the year in April, July and November (NOTE: This is distinct from Meeting #3). Check the College web page for the deadlines and dates: http://www.jefferson.edu/life_sciences/ or contact the MS Admin Coordinator, Alexandra Whitman at alexandra.whitman@jefferson.edu

o Present the Capstone Project Capstone and the results at a formal public JCLS forum;

o Submit a **final bound** copy of the Capstone research Capstone and the signature page, signed by the Capstone Committee to the MS Admin Coordinator at alexandra.whitman@jefferson.edu. This should be done on the day of the formal Capstone presentation and defense (See Page #18)

o Forms for use during the Capstone process are included in this document

THE CAPSTONE PROJECT COMMITTEE

MEMBERSHIP OF THE CAPSTONE PROJECT COMMITTEE

A student should have three persons on their **Capstone Committee including the Capstone Advisor**. As noted previously, the Capstone Advisor may also be the student's Program Director though this is not a requirement. The **Capstone Advisor** shall act as **Chair of the Committee**. The second committee member must be knowledgeable about the topic area, which will be the focus of the student project. The third committee member should have a background in the topic area, project type, or methodology related to the Capstone Project. However, regardless of the affiliations of the Committee, one member of the Committee must be of faculty rank at Thomas Jefferson University. All members of the Capstone Committee are expected to be fully engaged and active members of the committee.

PURPOSE OF THE CAPSTONE PROJECT COMMITTEE

The purpose of the Capstone Committee is to guide and advise the student in their project. The Capstone Advisor must be aware of the specific expertise that the proposed Capstone Committee members will contribute toward the student's growth and development as well as the students Capstone Project activity. The proposed Committee composition should have the necessary expertise in the area of the Capstone Project.

CAPSTONE PROPOSAL

The purpose of the proposal is to clearly and concisely answer the questions **WHAT**, **WHY**, and **HOW**. The proposal will be an outgrowth of the independent study, should explain the topic, the purpose or aims of the project, the plan for the project, and how the plan will be accomplished. It is expected that most proposals will be seven to eight double-spaced typed pages in length and should include a bibliography of the most relevant references on the topic. Format for the proposal is detailed on the following page (See Page #6).

Capstone Proposal Format

Proposed Capstone Title

This may be a provisional title, but it should be sufficient to orient the advisor and Committee to the topic of the students proposed research.

Introduction or Definition of the Problem

This section should answer the **WHAT** and **WHY**. It should describe the specific aims of the project. It should establish the rationale for the project by summarizing the previous work that has been done on the problem or topic, the available information, and any deficiencies in this information. It should also relate the significance of the proposed project.

Project Design and Scope

This section should describe **HOW** the problem will be addressed. An individual reading the proposal should be able to determine whether the project plan will adequately accomplish the project aims. The members of the Capstone Committee should be able to determine from this section whether the project is feasible with respect to time, resources, and expertise. The specific steps should be described and the methods of analysis and/or evaluation should be clearly stated.

Bibliography

A bibliography based on the current literature should be included. Pertinent journal articles and reference texts should be cited using the format of a major scientific journal. Most proposals will have 10-30 references (at least 10).

Students are encouraged to set-up a bibliography database at this point. It is easiest to utilize dedicated reference database programs, e.g. RefWorks and training courses are available through Scott Memorial Library.

RESPONSIBILITIES OF THE CAPSTONE ADVISOR

To assist in the development of the proposal for approval by the Committee.
- o To ascertain adequacy of the literature search.
- o To assist the student in project design including suggestions for necessary revisions.
- o To instruct, demonstrate, or make available to the student space or other resources as needed for the completion of the project, to the extent possible.
- o To guide the student in application of methodology.
- o To provide guidance to the student in the preparation of illustrations, graphics presentations, etc.
    - ▪ Training courses in PowerPoint, Excel, Access, Word and Photoshop are available through Scott Memorial Library.
- o While it is ultimately the responsibility of the student to be motivated and reach closure on their project and writing of the final Capstone document, it is expected that the Capstone Advisor will exercise the supervision necessary for the student to complete the project. The student however has ultimate responsibility to make sure that all relevant forms are signed on time and that the Milestone Stage Contract and Checklist stays current; this includes both the student's original copy and the checklist copy in the student's files with MS Admin Coordinator
- o To collaborate with members of the Capstone Committee in the final evaluation of the project.

The **Capstone Advisor** is responsible for overseeing that an appropriate level of scholarship is exhibited by the Capstone Project Capstone. The Capstone Project Capstone must demonstrate a high degree of professional and methodological competence. The candidate's Capstone Committee can provide the student with the guidance and instruction necessary to achieve this competence. **The Capstone Committee should meet regularly.** At least three (3) meetings are required although the Committee may meet more frequently if necessary to evaluate progress during the student's period of project activity. Records of these meeting must be submitted to the Admin Coordinator, Ali Whitman in the MS Program Office (JAH M-46) or via email at alexanadra.whitman@jefferson.edu. Meeting records should consist of the signed meeting form (See Page #9) and a brief (less than one page) summary of the meeting prepared by the student.

RESEARCH CAPSTONE FORMAT

The final version of the Capstone should incorporate all necessary changes and corrections stipulated by the Capstone Committee. One bound copy of the Capstone Project containing original photographs and illustrations should be submitted to the MS Program Office, M-46 Jefferson Alumni Hall, on the day of the Capstone presentation. Various binding options are available at local commercial venues (FedEx, Staples or Creative Characters [minimum of 5 copies required for binding]) Acceptable types of binding are shown in the illustrations below:

| Thermal tape binding | Coil binding | Comb binding |
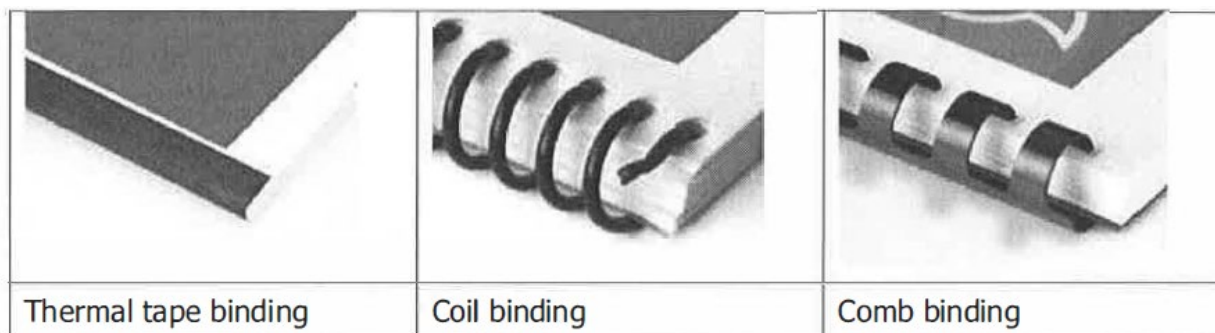
A copy of the final Capstone should be given to each Capstone Committee member. All text pages including footnotes, legends, figures, tables and the bibliography should be typed double-spaced on one side of 8.5" by 11" bond paper. Margins should be at least 1" on all sides. Any legible standard typeface or font is acceptable as long as it is consistent throughout the document. Suggested type fonts and pitches are: Times 12; Tahoma 10; Arial 10; and Verdana 10.

The general format is as follows:

TITLE PAGE

- o Include title, student's name, date, program and instructional affiliation, the Capstone Advisor's name and a listing of all Capstone Committee members.

DEDICATION

- o Optional

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ACKNOWLEDGMENTS

o This page expresses appreciation for all those who assisted the student and mentions any permission obtained to quote copyrighted material

ABSTRACT

o The abstract should briefly describe: 1) the background and focus of project; 2) the methods utilized in the project; 3) a summary of the results of the project and; 4) conclusions. The abstract is limited to a maximum of 250 words. The abstract may also be used as the Capstone Project abstract for the oral presentation submission (See Page # 14).

INTRODUCTION

o The introduction should relate the background to the project, including a statement of the problem, and the aims of the project. The project should be presented so that it is related to an existing body of knowledge or work on the subject with a review of the relevant literature.

MATERIALS AND METHODS

o This section is an expansion of the same section in the proposal. After reading this section, someone in the field should be clear enough about the methods, e.g., planning techniques, statistical approaches, etc., that they should be able to replicate the work if that is appropriate. Previously published procedures should be referenced in the bibliography.

RESULTS

o This section is a presention the collected data and analysis. Tables and Figures should be included as necessary

DISCUSSION AND CONCLUSIONS

o This section presents conclusions drawn from the data and additional analysis. The discussion should accurately reflect the project findings and also discuss unexpected results. Findings should be related to existing knowledge on the topic. Difficulties or barriers to implementation encountered in the project and recommendations for further study should also be included.

BIBLIOGRAPHY OR LIST OF REFERENCES

o Every reference cited in the text must appear in the bibliography. Pertinent journal articles and reference texts should be cited using the format of a major scientific journal. If the project report will be submitted for publication in a journal use the format required by that journal.

CAPSTONE PROJECT EVALUATION

The final Capstone Project Thesis will be evaluated by the Capstone Committee. The final evaluation will be based upon:

- o Appropriateness of the project;
- o Adequacy of the literature search;
- o Organization and execution of the proposal plan;
- o Project scope and level of difficulty;
- o Validity of conclusions;
- o Quality and thoroughness of the written paper;
- o Adherence to deadlines

SUBMISSION OF WRITTEN PAPER AND ORAL PRESENTATION

A public research seminar is scheduled for the presentation of the Capstone Project Thesis by the candidate. This presentation is required for graduation and must be on the TJU campus. The candidate must demonstrate competence in his/her specific area of work. The Capstone Project is presented to the audience in an oral presentation with accompanying graphs, tables and other visuals. The candidate must display the ability to answer questions pertaining to the project for those in attendance. If however, there are proprietary information concerns involving the public presentation of the candidate's research, a closed seminar may be arranged.

Presentations are scheduled three times each year: April, July and November. Students who present in April and have completed all other requirements for graduation will be eligible to graduate in June of the same year. Students who present in July or November, for whom this is the last requirement to complete their program, will be invited to attend the graduation ceremony in May of the following year. Students presenting in July or November may request a letter from the Registrar indicating the completion of all program requirements for their respective Master of Science degree.

- o The student should present the Committee members a neatly typed "draft" version of their project **at least one (1) week prior to the final Committee meeting**. Photographs, graphs, illustrations, and tables need not be the originals for this final draft copy of the project but the draft must have sufficient content to allow the **Committee** to determine if the student will be able to complete all the requirements prior to submission of an abstract for presentation.
- o Students need to incorporate suggestions from the Capstone Committee into their written Capstone for the final version. Student may have to present more than one draft of the paper to their Capstone committee.

- o Only those students who have completed their Capstone Project and have had their rough draft approved by their Committee may apply to make the oral presentation.
- o The final Capstone Committee meeting should occur **prior** to submitting the abstract for the final oral presentation. The abstract should be approved by the Capstone committee. The Capstone committee may delegate approval of the final abstract to the Capstone advisor.
- o Approved abstracts should be submitted to the Admin Coordinator, Ali Whitman (Alexandra.whitman@jefferson.edu) 4 weeks prior to the scheduled Capstone presentation. The Program Office sends out instructions and abstract submission deadline for the Capstone presentations. The abstract is to be submitted online using the instructions below. The abstract must be provided to the MS Program Office prior to the presentation so that it may be posted on the web.

GUIDELINES FOR PREPARING A CAPSTONE PRESENTATION ABSTRACT

By convention, scientific abstracts have a precise format. This makes it easier for the reader to quickly and efficiently grasp the complex scientific contact of these short summaries. In preparation the abstract, single-spaced all items. Use the Tahoma 11-point font for the document. Do not indent or otherwise format any part of the abstract. Please be aware that the abstract will be published on the Thomas Jefferson University College of Life Sciences web page prior to your formal oral presentation of your Capstone. According to the Jefferson Office of Technology Transfer, publication of your abstract on the TJU webpage constitutes disclosure of your research

You must notify us if you and your Advisor **do not** wish your abstract to be posted on the TJU webpage.

Obtaining a Capstone Presentation Abstract Template

1) The abstract form is available on the JCLS website under POLICIES AND GUIDELINES (https://www.jefferson.edu/academics/colleges-schools-institutes/life-sciences/student-resources/policies-guidelines.html) and can be downloaded. The template will be called "MS Basic Sciences Capstone Abstract Form" and is in MS Word format. The document will be set as "read only," which means that you can open the file but cannot modify it.
2) To work with the file, open it. Once it is open save it under a different name on your computer. In other words, use the "File|Save as" function from the toolbar. When prompted, give the file a new name. It will be saved on your computer without read/wrote restrictions. **Do not** change any settings on their file expect for its name.

3) If you thing you have done something to "ruin" your working copy of the template file, simply repeat No. 2 above to generate a new copy.

Title Information

- o Capitalize the entire title.
- o List the Authors' names: Use initials without periods for the first and middle names, not the full names.
- o The **only names** on the abstract should be your name (underlined), and your Capstone advisor.
- o Provide department and institutional affiliations for you and your advisor as per the example of **Page #15.**

Abstract Proper (Body of the Abstract)

- o Organize the body of the abstract in this fashion;
- o A statement of the study's space (one sentence);
- o A statement of the methods used;
- o A summary of the results obtained, presented in sufficient detail to support your conclusions;
- o A statement of the conclusions reached. Note that it is **not** satisfactory to state, for example, that "the results will be discussed," or that "other data will be presented."
- o The entire body of the abstract, i.e., the entire abstract except the Title Information, **must** be in a single paragraph. DO NOT separate "methods," "results," or "conclusions" into separate paragraphs. Figures and tables are not permitted in the abstract.
- o See the example on **Page #15.**
- o The entire abstract (Title Information and Body of the Abstract) **MUST** fit into a space 4.5" wide and 7.0" deep when formatted with the 11 point Tahoma font. If your material does not fit, **you** must shorten it. The MS Program Office **will not** edit your abstract to make it fit the template. You **may not** use a smaller font or a different font in order to make the abstract fit the template.

Submitting the Abstract

Your abstract must be submitted as a computer file in Microsoft Word. You may submit it *via* e-mail or in person *via* a flash drive. Send the file as a file attachment in an e-mail directed to Ali Whitman; Alexandra.whitman@jefferson.edu. To ensure that we properly file and assign your abstract to the correct program, please submit your abstract with your last and then first name and finally the program name and abbreviation as the actual file name in the following format:

FILE NAME FORMAT FOR FINAL ABSTRACT SUBMISSION

LAST_FIRST_BS.doc   Biomedical Sciences

LAST_FIRST_CB.doc   Cell & Developmental Biology

LAST_FIRST_FB.doc   Forensic Biology

LAST_FIRST_FT.doc   Forensic Toxicology

LAST_FIRST_HG.doc   Human Genetics & Genetic
                         Counseling

LAST_FIRST_MI.doc   Microbiology & Immunology

LAST_FIRST_NS.doc   Neuroscience

LAST_FIRST_PR.doc   Pharmacology

SAMPLE ABSTRACT

DIAGNOSTIC POWER OF CIRCULATING TUMOR PROTEINS AND PHYSIOLOGICAL PARAMETERS TESTED IN AN IMMUNODEFICIENT RAT ORTHOTOPIC HUMAN LUNG CANCER

MODEL. HJ Millar-Ouinn[1] , E Wickstrom[2]

[1]Discovery Research, Centocor R&D, Inc., Radnor PA. [2]Department of Biochemistry and Molecular Biology, Thomas Jefferson University, Philadelphia PA.

Clinically relevant animal models of human cancer that allow tumor growth and metastasis to closely mimic that of human disease are necessary for the evaluation of putative therapeutics. Presently, there are no animal models for human lung cancer that both mimic human disease and show clinically relevant protein biomarker activity. It is hypothesized that circulating levels of lung cancer-associated proteins will correlate with physiological measurements from an orthotopic H460 human non-small cell lung carcinoma (NSCLC) model in immunodeficient rats. An orthotopic lung cancer model was developed in the nude rat, using intratracheal instillation of H460 cells. In-life measurements, blood gas, and blood analytes from na·ive and tumor-bearing animals were measured over time. Serum samples were collected from these animals to quantitate circulating human IL-8, p53, VEGF, and MMP-9, which were correlated with in-life measurements to track disease progress. MMP-9 and p53 were not significantly detectable in the serum. Circulating human VEGF was detected at high levels on the day of death in some of the tumor-bearing animals. Human IL-8 was detectable in all tumor-bearing animals and showed correlations with markers of respiratory acidosis (pH, P=0.012; TCO2, P=0.024; PCO2, P=0.007; and

HCO3, P=0.029), and with surface body temperature

(P=0.001). IL-8 significantly correlated with survival (P<0.001), indicating an association with tumor burden. Circulating IL-8 may be a useful clinically-relevant tumor protein marker, due to its correlation with multiple physiological parameters associated with disease progression, which is consistent with the original hypoCapstone.

The final bound copy & PDF of the Research Capstone must be submitted by the day of the presentation to the MS Admin Coordinator, alexandra.whitman@jefferson.edu.

GUIDELINES FOR PREPARING FOR THE MS ORAL CAPSTONE PRESENTATION

The Jefferson College of Life Sciences will provide a computer, laser pointer and digital projector for your MS Capstone presentations. You must adhere to the following guidelines:

1. Presentations must be done in Microsoft PowerPoint. The computer provided runs the Office 2010 version of PowerPoint and is backward compatible to previous versions.

2. PowerPoint files should be submitted as an attachment in an e-mail addressed to: Alexandra.whitman@jefferson.edu

3. If the files are too large for e-mail you may submit your presentation on a flash drive in person at the MS Program Office (JAH M-46).

4. PowerPoint files must be emailed prior to the presentation. You will also need to bring a copy the day of your presentation

5. If you generated your PowerPoint presentation on a Mac please load it on a Windows-based machine, convert it to the Windows version of PowerPoint and make sure the fonts, tables and graphs have all converted properly. This is especially important for special characters and symbols.

6. If you are presenting movies embedded in your PowerPoint slides please make sure we have the same software program and version available on the presentation computer, e.g, *Windows Media Player, Quicktime, etc.*

7. Your presentation should be a maximum of thirty (30) minutes in duration: 20 minutes for the presentation and approximately 10 minutes for questions and discussion. If you go over your allotted time, you will be asked to stop so we can move on to the next presenter.

TIPS FOR EFFECTIVE PRESENTATIONS USING FOUR IMPORTANT DESIGN CONCEPTS:

BIG
SIMPLE
CLEAR
CONSISTENT

If you pay attention to these four concepts as you put the visuals together, the end products will be effective

1. Make it **BIG**

    Test: can you read everything for the back row?

2. Keep in **SIMPLE**

    Guidelines for text on visuals
    - No more than 6 lines of text per slide
    - No more than 7 words for line of text

    We all tend to put too many words on our slides at first. Use the above guidelines to get rid of unnecessary texts. Your audience can read faster than you can talk; you don't want their attention spilt between the slide and you (using 'builds' in PowerPoint can help control the audience's attention).

3. Make it **CLEAR**

    Choose fonts, font sizes and colors that enhance readability of your slides. Most of PowerPoints default font sizes and color schemes work well; if you decide to experiment with your own, be sure not reduce readability in the process.

4. Be **CONSISTENT**

    Your goa should be to educate and inform your audience. Make sure the stages of your presentation, and the visual aid you use, follow a logical sequence. Use transitions to help the audience understand how successive stages are related to each other, and to the big picture.

A final word of advice:

1. Begin preparing your visuals early
   - o Allow enough time to make any necessary changes
   - o Project the visuals to verify content, spelling, sizes and colors
   - o Practice the presentation with the visuals
   - o Take the time to reconsider the presentation as a whole

2. When using the computer, make frequent back-up copies of your PowerPoint presentation.

3. Practice your presentation. A lot. You want to be able to speak it, not read it.

4. Two cardinal rules of public speaker:
   - o Never turn your back on an audience
   - o Always maintain eye contact with your audience

5. Know your environment
   - o Check out the lighting and plan ow you (or someone else) will control it:
   - o Do you need a pointer? A podium? White board? An internet connection? Arrange for these in advance.

6. Other things: Room temperature, noise, seating arrangement:

If there is unfamiliar equipment, ask to have someone demonstrate it for you, or ask to have them operate it for you during the talk. Don't fiddle during the talk.

Backup: Electronic equipment sometimes fails. Be mentally prepared to cover yourself for 5-10 minutes while equipment problems are resolved or the equipment is replaced.

Source: Columbia University Department of Psychology

FORMS APPENDIX

RESEARCH PROPOSAL APPROVAL FORM

The attached Master's Capstone proposal has been submitted by

_____
Print your name in the space above

_____   _____
Student Signature   Date

A student in the Master of Science Program in

_____
Print the name of your program in the space above

The following persons have agreed to serve as members of the Capstone Committee and have found that the student has sufficient knowledge in the field to proceed with the proposed study toward completion if the Master's Capstone Project Thesis requirement.

SIGNATURES OF CAPSTONE COMMITTEE MEMBERS

_____   _____
Print name above   Affiliation

_____   _____
Signature   Date

_____   _____
Print name above   Affiliation

_____   _____
Signature   Date

_____   _____
Print name above   Affiliation

_____   _____
Signature   Date

_____   _____
Print name above   Affiliation

_____   _____
Signature   Date

RECORD OF CAPSTONE COMMITTEE MEETING

☐ Meeting 1   ☐ Meeting 2   ☐ Meeting 3   ☐ Meeting __

Student _____   Program _____

To the student:
- Have your committee members sign this form after the meeting
- After the meeting, prepare a 1 page summary including recommendations from your committee members. Have your Capstone advisor initial the report
- Send this form, the initialed summary attachment, and your PowerPoint slide file to the MS Admin. Coordinator, alexandra.whitman@jefferson.edu

Date of Committee Meeting: _____

_____
Student Signature

_____
Capstone Advisor's Signature

SIGNATURES OF CAPSTONE COMMITTEE MEMBERS

_____
Capstone Committee Member

_____
Capstone Committee Member

_____
Capstone Committee Member

JEFFERSON COLLEGE OF LIFE SCIENCES

THOMAS JEFFERSON UNIVERSITY

SIGNATURE SHEET

STUDENT _____

Candidate for the degree of

Master of Science

Has successfully completed the final copy of the Master's Capstone in the field of

	Biomedical Sciences
	Cell & Developmental Biology
	Forensic Biology
	Forensic Toxicology
	Human Genetics & Genetic Counseling
	Microbiology & Immunology
	Neuroscience
	Pharmacology

We have found that the candidate has successfully completed the requirements for the Master of Science Capstone Project thereby demonstrating knowledge of the skills needed to contribute to the scientific validation of their practice.

Name   **Date**

_____   _____

_____   _____

_____   _____

MILESTONE STAGE CONTRACT AND CHECKLIST

NAME: _____ Campus Key _____ Program _____

ACTIVITY	DATE	STUDENT INITIALS	ADVISOR INITIALS
Identify capstone advisor. NAME: _____ Affiliation: _____			
Identify members of the Capstone Committee 1. Capstone Advisor 2. _____ 3. _____			
Submit written proposal for Capstone project			
Oral presentation of capstone proposal to Capstone Committee			
Approval of Capstone proposal			
Capstone Committee Meetings: (Email Capstone documents to your Program director and MS Admin. Coordinator - alexandra.whitman@jefferson.edu immediately following each meeting)			
Meeting #1			
Meeting #2			
Meeting #3 (Defense of Capstone)			
Additional meeting date(s) as needed: _____			
Write Capstone and rewrite Capstone with advisor's help			
Revisions if necessary and Final Approval of Capstone by Committee			
Schedule Appointment MS Admin. Coordinator alexandra.whitman@jefferson.edu to insure all records are current and all course requirements have been fulfilled			
Schedule date for final public capstone presentation (April, July, November)			
Submit abstract to MS Admin. Coordinator alexandra.whitman@jefferson.edu (March 15th, June15th, October 15th)			
Final Public Capstone Presentation			
Submit a final bound copy & PDF copy of the thesis along with a signature page to MS Admin. Coordinator, alexandra.whitman@jefferson.edu			

9-8-21