



**GRAND VALLEY  
STATE UNIVERSITY**  

---

**ATHLETIC TRAINING**

**Master of Athletic Training (MAT) Program**

**Student Research Project Handbook**

## Table of Contents

<b>Acknowledgement .....</b>	<b>3</b>
<b>Introduction .....</b>	<b>3</b>
<i>Project Credits .....</i>	3
<i>Grading of Project for ATH 693 .....</i>	4
<i>Responsible Conduct of Research (RCR) Training.....</i>	4
<b>Roles and Responsibilities .....</b>	<b>4</b>
<i>Student .....</i>	4
<i>AT Faculty Advisor/Committee Chair .....</i>	5
<i>Additional Committee Member(s).....</i>	5
<b>Selecting a Research Topic.....</b>	<b>5</b>
<b>Authorship Guidelines.....</b>	<b>6</b>
<b>Deadlines .....</b>	<b>6</b>
<b>Formatting the Manuscript.....</b>	<b>7</b>
<i>Plagiarism.....</i>	7
<b>Research Project Proposal Defense.....</b>	<b>7</b>
<b>Research Project Final Defense.....</b>	<b>7</b>
<b>Final Approval Form.....</b>	<b>8</b>
<b>ScholarWorks Submission.....</b>	<b>8</b>
<b>Research Resources .....</b>	<b>8</b>
<i>Webpages.....</i>	8
<i>GVSU Campus Resources.....</i>	9
<i>Applications .....</i>	9
<i>Internal GVSU Grants for Graduate Students .....</i>	9
<i>External Professional Organization Grants for Graduate Students .....</i>	9
<b>Appendices.....</b>	<b>10</b>
<i>Appendix A: Original Research Grading Rubric .....</i>	11
<i>Appendix B: Systematic Review Manuscript Grading Rubric .....</i>	13
<i>Appendix C: Project Contributions &amp; Authorship Form .....</i>	16
<i>Appendix D: Project Final Approval Form.....</i>	17

## Acknowledgement

The Master of Athletic Training Student Research Handbook is based on an adaptation of “Guidelines - Preparation of Projects used as Culminating Experiences” which can be found on [The Graduate School](#) website.

## Introduction

The Master’s Research Project course (ATH 693) is a requirement for all MAT students, as it allows students to directly engage in scholarly activity, making them more well-rounded consumers of information and future practitioners. Students begin the project at conception of a research idea and progress the project to completion under the guidance of their advisors, ultimately creating a product for dissemination. Ideally, students will use their ATH 523 research interest work as a foundation in exploring the area further through the Master’s Research Project.

Your research project should significantly contribute to existing knowledge and be an original contribution to the profession. Adhering to the guidelines in this document will help you avoid delays in completion. It is crucial to maintain open lines of communication with your faculty advisor, committee and/or group members to ensure clarity and progress. Your final manuscript will become part of the GVSU’s permanent collection. Therefore, your manuscript should demonstrate professional writing, free of grammatical errors. To have your degree conferred, your manuscript must be approved by your project committee, program director, and department chair. You, the student, are responsible for knowing the MAT program specific requirements for research projects.

## Project Credits

Students must enroll in ATH 693 – Project in Athletic Training for a total of 4-credit hours broken up over the course of the second year in the program, when the project will be completed. There are multiple combinations in which the credits may be taken (see below chart for possible options), however this should ultimately be discussed and decided in collaboration with your AT faculty research advisor who is knowledgeable about the research process and can help you create an obtainable timeline for project completion. For reference, **1 credit hour is equivalent to 3-6 clock hours per week or 45-90 clock hours per semester.**

ATH 693 - Credit Combination Options (must total 4 credits minimum)		
Spring/Summer	Fall	Winter
0	2	2
1	1	2
1	2	1
2	1	1

#### NOTE:

- Students are required to be *continuously* enrolled in ATH 693 for a minimum of 1 credit hour once the project is started (first enroll in ATH 693) until the end of the semester of graduation *and* project completion.
- If the research project is not completed by the planned graduation date, students must pay for additional credit hours at the applicable graduate tuition rate in order to finish the research project.

#### Grading of Project for ATH 693

In ATH 693, a grade of “X” will be awarded to the student each semester leading up until the semester of project completion. In the final semester, one of four grades will be issued: PD (pass with distinction), PS (pass), W (withdrawal), or NC (no credit). Your grade will be determined based on score on the rubric associated with your project type. See [Appendix A](#) for original research & [Appendix B](#) for systematic review rubrics.

#### Responsible Conduct of Research (RCR) Training

All GVSU graduate students are required to complete RCR training prior to engaging in any research activities. GVSU uses the [CITI \(Collaborative Institutional Training Initiative\) Program](#) to administer all online RCR training and certification. Within the MAT program, students are required to complete the RCR – Athletic Training Graduate Students course which includes modules in the areas of Human Subjects Research, Information Privacy & Security, and Responsible Conduct of Research. This course can be found and selected under Question #1 on the “Add a Course” screen. Students will complete RCR training as part of ATH 523 coursework in preparation for their project.

### Roles and Responsibilities

#### Student

As a graduate student, it is your responsibility to know the program requirements related to the culminating experience for your degree. These are detailed in the program requirements of the MAT Student Research Project Handbook. During the ATH 523 course taken Winter semester of the first year in program, students will be connected with an AT faculty member who will serve as their research advisor and committee chair. Students will be assigned to faculty advisors based on mutual research interests. You will work with your research advisor to identify additional committee members who could make meaningful contributions to your research project. While it is *highly recommended*, an additional faculty member to serve on the project committee is not required. This will most likely depend on the project type and students should consult their AT faculty research advisor concerning adding an additional committee member.

Throughout the research project, it is your responsibility to fulfill the research committee’s expectations in regard to meeting deadlines, responsible conduct of scholarly or creative work, and academic integrity. You must maintain regular communication with all committee members throughout the research process. You will be heading the project and will facilitate setting up meetings as necessary. Additionally, you are responsible for obtaining support from

other university resources (e.g., statistics department, librarian, etc.) to guide you in methodology and analysis as needed. You are expected to credibly defend all decisions made related to the research process (e.g., purpose of the study, methodology, interpretation of results and conclusions), during a public oral defense presentation with your research committee.

### AT Faculty Advisor/Committee Chair

The primary responsibilities of the research advisor are to be the chairperson of the research committee, principal investigator (PI) of the project (if submitting to IRB), and mentor to the research student(s). The research advisor will guide you through the project steps, ensure you are completing work in a timely manner, and offer constructive criticism throughout in order to give your final product the best chance at a successful outcome. In addition, the research advisor will ensure the project challenges you to develop skills of critical inquiry and evidenced-based decision making. Finally, the research mentor is responsible for working to ensure a successful outcome for both you and the research project.

### Additional Committee Member(s)

Research project committee members are responsible for using their knowledge and expertise to make active contributions to your research project. Members of project committees must be tenure-track faculty members that hold graduate faculty status but can be from any department as makes sense for your project topic. If non-graduate faculty, then they must be approved by Associate Vice-Provost for The Graduate School to serve as committee member. Committee members are expected to critically read and evaluate the initial proposal and final documents, provide constructive feedback and suggestions for improvement, and attend the project defense. Once the committee member(s) signs the project approval form following the project defense, this concludes their responsibilities to the project.

### Selecting a Research Topic

The MAT faculty will provide research area topics or options for you to review and select from. Your ATH 523 professor will then assign you to one of the topic areas of interest. You will proceed in this area of research either individually or in a group of 2 students, depending on project, under the guidance of your AT faculty advisor.

#### NOTE:

- If your research project involves original/human subjects research, you must gain approval from the Institutional Review Board (IRB) prior to any subject recruitment or data collection. This process can take time and should be accounted for. The formal project cannot begin until you have received written approval from the IRB.

## Authorship Guidelines

Proper guidelines of authorship, authorship order, and non-author contributions should be an integral part of any collaborative scholarly product. Appropriately assigning recognition for contributions to any scholarly product is an essential step, so the following guidelines should be considered carefully to provide a consistent method of identifying contributions and giving proper acknowledgment.

MAT guidelines for order of authorship are as follows:

- a. The list should reflect descending order of contribution to the product.
- b. The person who took the lead in writing the manuscript and/or developing the product should be considered the first author.

Use the chart found in [Appendix C](#) to discuss and plan authorship for your project with your research contributors. This will assist with providing an understanding of what everyone's contributions will look like for the project. In the case of an authorship disagreement, the APA Authorship Determination Scorecard will be used to settle the dispute.

NOTE: If upon graduation or leaving of the institution, the student no longer wishes to continue work to finish the project or pursue publication, authorship may be revised as follows:

- The remaining project members will meet to revise pre-established authorship to account for those continuing to contribute to project completion and/or manuscript revisions.
- The student will be moved down in authorship as deemed appropriate if they wish to remain on the manuscript submission without further contribution towards project completion/manuscript revision.
- If the student ceases to respond to all forms of correspondence by the other project members attempting to gather necessary author information for submission, he/she may be removed from authorship so that publication can still be pursued by the remaining project members.

## Deadlines

Students should work with their project committee to establish a schedule for completion of their research project. The project committee understands timelines for completing research projects and will try to set you up for success. Therefore, deviation from any established or suggested deadlines set by your project committee may prolong completion of the research project, potentially beyond date of projected graduation – delaying graduation. Therefore, students should work closely with their project committee on establishing task deadlines to keep the project progressing for timely completion. It is up to the student to schedule themselves adequate time each week to work on their project, so progress is made regularly. Submission of your final manuscript must occur at least three weeks prior to the last day of the semester you intend to graduate.

## Formatting the Manuscript

Students must use an approved format for structuring their written product. Options include either following the style guide of a journal in the area of study or using the format found in Section V of the “Guidelines - Preparation of Projects used as Culminating Experiences” document provided by The Graduate School. The format should be determined in consultation with your AT faculty advisor.

### Plagiarism

According to the GVSU Student Code ([policy number STU 5.1.5](#)) plagiarism is defined as: Appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source without any indication or citation of the original source, including words, sentences, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program, course, or degree requirements.

Properly citing your sources can help you to avoid plagiarism. Any student who fails to give credit in written or oral work for ideas or materials taken from another source is guilty of plagiarism and will undergo academic misconduct procedures. For additional information about plagiarism and how to avoid it, consult the [GVSU Library plagiarism guide](#).

## Research Project Proposal Defense

In the Fall semester, your project committee may require you to develop a research proposal defense. This proposal defense will encompass your research project rationale and plan, including introduction, background, study design, participants/population, study procedures/tools, and statistical analysis. The student may be asked to present this formally to the project committee and outside audience, or informally to the project committee alone. This should be discussed with your project committee early on to establish expectations.

## Research Project Final Defense

In the Winter semester, you will be required to complete a formal research project final defense - a culminating event illustrating your project work. The research project final defense will be a one hour scheduled presentation, advertised within the department (minimum 7 days prior to defense date), open to the public, and at minimum attended by your project committee. At the final defense the student(s) will have 30 minutes to give an overarching presentation of their project including introduction, background, study design, participants/population, study procedures/tools, statistical analysis, results, discussion, clinical implications, limitations, area of future research, conclusions, and references. This will be followed by a 30-minute open question period from the audience. After the open question period, the audience will leave, and the student(s) will be asked to step outside the room while the project committee meets to discuss the project outcomes and student(s) work. The student(s) will be invited back into the room and the project committee will review what

revisions need to be made or final steps completed before the project will be approved by the committee and awarded a grade of “pass”. Committee members will attest to the acceptability of the manuscript when they complete and sign the final grading rubric ([Appendix A](#) or [Appendix B](#)) after successful defense of the research project.

## Final Approval Form

The Final Approval Form for your research project is the final step signifying project requirements have been met by the student. A Final Approval Form must be filled out for every student even if the project was completed as a group. Signatures must be gained from the students Project Advisor, the MAT Program Director, and the Department of Physical Therapy & Athletic Training Unit Head. A template of the Final Approval Form can be found in [Appendix D](#) for students to print out and gain signatures at the conclusion of the project.

## ScholarWorks Submission

All research projects and theses must be electronically filed in the GVSU electronic repository [ScholarWorks @GVSU](#). After your project committee has approved your research project, students will submit their project to ScholarWorks by completing the appropriate form found [here](#). The inclusion of your work in ScholarWorks will make it openly available on the internet. If you have submitted your manuscript for publication (or plan to), you may submit your manuscript and completed ScholarWorks form under the condition that it will not be published online (e.g., embargo) for a specified period of time. If you do not submit for publication, you may submit the manuscript and ScholarWorks form without the embargo. You also have the option of submitting your abstract without the full manuscript.

## Research Resources

### Webpages

#### **GVSU AT Library Guide**

<https://libguides.gvsu.edu/AT>

#### **GVSU University Libraries - MASTER'S/DOCTORAL PROJECTS FOR OST, PT, RT, AND AT**

<https://libguides.gvsu.edu/libraryresearch>

#### **GVSU University Libraries - Systematic/Scoping Reviews (Master's/Doctoral)**

[https://libguides.gvsu.edu/reviews\\_grad\\_level/home](https://libguides.gvsu.edu/reviews_grad_level/home)

#### **GVSU College of Health Professions (CHP) IRB Resources**

<https://www.gvsu.edu/shp/irb-resources-101.htm>

#### **GVSU Graduate Writing Resources**

<https://www.gvsu.edu/gw/graduate-writing-resources-96.htm>



GVSU Campus Resources

**Library Liaison - Emily Metcalf**

<https://libguides.gvsu.edu/prf.php?id=627bede0-7cdb-11ed-9922-0ad758b798c3>

**Statistical Consulting Center**

<https://www.gvsu.edu/scc/>

Applications

**Zotero Reference Manager**

Free, easy-to-use tool to help you collect, organize, annotate, cite, and share research.

Download: <https://www.zotero.org/>;

Basics: [https://www.zotero.org/support/quick\\_start\\_guide](https://www.zotero.org/support/quick_start_guide)

Internal GVSU Grants for Graduate Students

**Presidential Research Grant**

Awards up to \$1,500 are available to support the research projects of graduate students.

<https://www.gvsu.edu/gs/presidential-research-grants-33.htm>

**Academic Conference Fund Grant**

Awards of up to \$600.00 (up to \$800.00 for international travel) will be given to those invited to present or perform at a conference/meeting.

<https://www.gvsu.edu/gs/academic-conference-fund-29.htm>

External Professional Organization Grants for Graduate Students

**MATS Research Assistance Grant**

Several applications with total direct costs up to a maximum of \$500 for Athletic Training students will be funded. There are two funding cycles each calendar year. Applications are due by 5:00 pm EST on the last Friday in September and February.

<https://www.michiganatsociety.org/research-assistance>

**GLATA Research Assistance Grant**

Master's students funded \$1,000. Applications are due August 1<sup>st</sup> of each year.

<https://www.glata.org/committees/research-assistance/glata-research-assistance-grants/glata-research-assistance-grants-information/profile/funding>

**NATA Masters Student Grant**

Master's students funded \$1,000. Applications are due August 1<sup>st</sup> of each year. Must be a NATA member to apply.

<https://www.natafoundation.org/research/grant-opportunities/>

# Appendices

## Appendix A: Original Research Grading Rubric

	<b>Exceeds Expectations (Pass with Distinction)</b>	<b>Meets Expectations (Pass)</b>	<b>Does not meet Expectations (Not Pass)</b>
<b>Abstract</b>	<ul style="list-style-type: none"> <li>Abstract easily understood by professional audience</li> <li>Writing is clear and concise</li> </ul>	<ul style="list-style-type: none"> <li>Abstract is understandable to professional audience</li> <li>Writing is generally complete</li> </ul>	<ul style="list-style-type: none"> <li>Abstract not easily understood by professional audience</li> <li>Writing is incomplete</li> </ul>
<b>Research inquiry presented within larger context of literature (Introduction/Literature Review)</b>	<ul style="list-style-type: none"> <li>Research question/issue/problem specifically identified and well summarized</li> <li>Goals/objectives/hypothesis is clear</li> <li>Intro/Review situated clearly within discipline-specific academic framework</li> </ul>	<ul style="list-style-type: none"> <li>Research question/issue/problem generally identified and summarized</li> <li>Goals/objectives/hypothesis presented</li> <li>Intro/Review presented within discipline-specific academic framework</li> </ul>	<ul style="list-style-type: none"> <li>Research question/issue/problem not identified, or inaccurately/inadequately represented</li> <li>Goals/objectives/hypothesis is vague or incomplete</li> <li>Intro/Review not presented/inadequately presented within discipline-specific academic framework</li> </ul>
<b>Methodology &amp; Research Methods</b>	<ul style="list-style-type: none"> <li>Methodology is clear and appropriate for this type of project</li> <li>Provides accurate, thorough description of collection, sources</li> <li>Planned analysis is appropriate</li> <li>Acceptable for publication with little to no refinement</li> </ul>	<ul style="list-style-type: none"> <li>Methodology is appropriate and adequately described</li> <li>Provides accurate, acceptable description of collection, sources</li> <li>Planned analysis is appropriate</li> <li>Publication would need refinement</li> </ul>	<ul style="list-style-type: none"> <li>Methodology is missing, incomplete, insufficiently detailed, or inappropriate</li> <li>Provides inaccurate, description of collection, sources</li> <li>Planned analysis is inappropriate</li> <li>Publication is not an option</li> </ul>
<b>Findings/Results</b>	<ul style="list-style-type: none"> <li>Results are clearly explained in a comprehensive level of detail and are well-organized</li> <li>Tables/figures clearly and concisely convey the data</li> <li>Statistical analyses (if used) are appropriate tests and are accurately interpreted</li> </ul>	<ul style="list-style-type: none"> <li>Results are explained but not as clearly, level of detail is less, and there are some organizational issues</li> <li>Tables/figures are not as clear/concise in conveying the data</li> <li>Statistical analyses (if used) are appropriate tests but are not accurately interpreted</li> </ul>	<ul style="list-style-type: none"> <li>Results are not clearly explained, level of detail is severely insufficient, and there are serious organizational issues</li> <li>Tables/figures are not clear/concise in conveying the data</li> <li>Statistical analyses (if used) are inappropriate tests and/or are not accurately interpreted</li> </ul>
<b>Conclusions, Implications, &amp; Consequences</b>	<ul style="list-style-type: none"> <li>Interpretations/analysis of results are thoughtful and insightful, are clearly informed by the study's</li> </ul>	<ul style="list-style-type: none"> <li>Interpretations/analysis of results are sufficient but lack some thoughtfulness or insight, are not as clearly</li> </ul>	<ul style="list-style-type: none"> <li>Interpretations/analysis of results are lacking are not clearly informed by the study's results, and do not address how they</li> </ul>

	<p>results, and thoroughly address how they supported, refuted, and/or informed the hypotheses/propositions</p> <ul style="list-style-type: none"> <li>• Insightful discussion of how the study relates to and/or enhances the present scholarship in this area</li> <li>• Key findings are specifically related to previous research</li> <li>• Implications of work are presented clearly and discussed thoroughly</li> <li>• Is appropriate for publication or presentation with little or no revision</li> <li>• Suggestions for further research in this area are insightful and thoughtful</li> </ul>	<p>informed by the study's results, and do not as thoroughly address how they supported, refuted, and/or informed the hypotheses/propositions</p> <ul style="list-style-type: none"> <li>• Some discussion of how the study relates to and/or enhances the present scholarship in this area</li> <li>• Findings are related to previous research.</li> <li>• Implications of work are presented</li> <li>• Is appropriate for publication or presentation with some revision.</li> <li>• Suggestions for further research in this area mentioned</li> </ul>	<p>supported, refuted, and/or informed the hypotheses/propositions</p> <ul style="list-style-type: none"> <li>• Lacking discussion of how the study relates to and/or enhances the present scholarship in this area</li> <li>• Findings are not related to previous research.</li> <li>• Implications of work are not presented</li> <li>• Is inappropriate for publication/presentation</li> <li>• Suggestions for further research in this area not mentioned</li> </ul>
<b>Writing</b>	<ul style="list-style-type: none"> <li>• Language clearly and effectively communicates ideas</li> <li>• No grammar and mechanic errors</li> <li>• Language is appropriately nuanced and eloquent</li> <li>• Organization is clear and effective and utilized to best effect</li> </ul>	<ul style="list-style-type: none"> <li>• Language communicates ideas adequately</li> <li>• A few grammar and mechanic errors</li> <li>• Language use meets expectations for graduate student</li> <li>• Organization is sound/good</li> </ul>	<ul style="list-style-type: none"> <li>• Language obscures meaning/unclear in places</li> <li>• Grammatical, spelling, or punctuation errors are distracting and/or repeated</li> <li>• Work is unfocused</li> <li>• Organization is clumsy or mechanical</li> </ul>
<b>Documentation &amp; Quality of Sources</b>	<ul style="list-style-type: none"> <li>• Cites all data obtained from other sources</li> <li>• Citation style is accurately used in both text and bibliography</li> <li>• Sources are all scholarly and clearly relate to research focus</li> </ul>	<ul style="list-style-type: none"> <li>• Cites most data obtained from other sources</li> <li>• Citation style is used in both text and bibliography.</li> <li>• Sources are primarily scholarly and relate to research focus</li> </ul>	<ul style="list-style-type: none"> <li>• Does not cite sources</li> <li>• Citation style is inconsistent/nonexistent</li> <li>• Sources are disproportionately nonscholarly and do not relate to research focus</li> </ul>

**Overall Evaluation:** *(Please check one)*

**Exceeds expectations** (only if 6 of the 7 categories are met at this level)

**Meets expectations**

**Does not meet expectations**

## Appendix B: Systematic Review Manuscript Grading Rubric

Section and Topic	Item #	Checklist item	Location where item is reported
<b>TITLE</b>			
Title	1	Identify the report as a systematic review.	
<b>ABSTRACT</b>			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
<b>INTRODUCTION</b>			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	
<b>METHODS</b>			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	
Information sources	6	Specify all databases, registers, websites, organizations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	
Study risk of bias assessment	11	Specify methods used to assess risk of bias in the included studies, including details of any tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in process.	
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	

Section and Topic	Item #	Checklist item	Location where item is reported
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	
<b>RESULTS</b>			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study characteristics	17	Cite each included study and present its characteristics.	
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
<b>DISCUSSION</b>			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	
	23b	Discuss any limitations of the evidence included in the review.	
	23c	Discuss any limitations of the review processes used.	
	23d	Discuss implications of the results for practice, policy, and future research.	
<b>OTHER INFORMATION</b>			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	

## Appendix C: Project Contributions & Authorship Form

Use the below chart to discuss and plan authorship for your project with your research contributors. Place an “X” in the corresponding box or boxes for each task. This will assist with providing an understanding of what everyone’s contributions will look like for the project.

Task	Student	Faculty Advisor	Committee Member	Other: _____	N/A
Conception and design/methods					
Recruitment and/or acquisition of data					
Analysis and interpretation of data					
Drafting of manuscript					
Critical revision of manuscript					
Final approval of manuscript					
Administrative, technical, or logistic support					

Therefore, the order of authorship for the manuscript entitled:

---

[First Author] \_\_\_\_\_ (Student)

[Second Author] \_\_\_\_\_

[Third Author] \_\_\_\_\_

[Fourth Author] \_\_\_\_\_ (if applicable)

This has been discussed and agreed upon. It is understood that this is a working document that may need revision if circumstances change over the lifespan of the project.

---

Student Signature \_\_\_\_\_ Date \_\_\_\_\_

---

Student Signature (if applicable) \_\_\_\_\_ Date \_\_\_\_\_

---

AT Faculty Advisor Signature \_\_\_\_\_ Date \_\_\_\_\_

---

Committee Member Signature (if applicable) \_\_\_\_\_ Date \_\_\_\_\_



Appendix D: Project Final Approval Form



The signatures of the individuals below indicate that they have read and approved the project of **<full legal name>** in partial fulfillment of the requirements for the degree of Master of Athletic Training.

---

**<name of project advisor>**, Project Advisor Date

---

Shari Bartz-Smith, Graduate Program Director Date

---

Todd Sander, Unit Head Date