



Master of Science in Genetic Counseling
Master's Thesis Project Manual 2020-2021

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Project Introduction

The Master of Science, Genetic Counseling Program's mission: The Baylor College of Medicine Genetic Counseling Program provides students a transformative education in genomic medicine and the practice of genetic counseling. The outstanding clinical, laboratory, and research faculty will empower graduates to be empathic professionals with effective critical thinking skills.

The Master's Thesis Project is designed to develop the student's abilities to critically analyze and thoughtfully produce research in the field of genetic counseling. The project will contribute to evidence-based practice and best practices in genetic counseling and/or related field. Additionally, the project will prepare the graduate to participate in research while in clinical practice. The goal of the Master's candidate's thesis project is to produce a manuscript of publication quality for submission within a peer-reviewed journal although submission and publication is not a requirement for graduation.

Thesis project ideas are identified in the fall of the first year of the Program and must be approved by program leadership as well as the Thesis course directors in the spring of year one. The students will identify an area of interest, communicate with project mentors, design protocols, perform a literature search, conduct their research, collect and analyze data, produce a written manuscript, defend their thesis and present a poster to colleagues at Baylor College of Medicine. All data will need to be downloaded prior to graduation and archived in a secure location accessible to the student. After graduation you will no longer have access to data stored on the BCM network.

Students will defend their completed thesis and participate in a poster colloquium in the second year.

BCM Genetic Counseling Program

Thesis Timeline

Course	Assignment	Objective(s)
Research Methods in Genetic Counseling	Identify thesis project and committee	<ul style="list-style-type: none"> • Recognize regulatory components of the human subjects research process • Formulate research question • Demonstrate feasibility of proposed study design • Identify research collaborators
Thesis I	Design research study	<ul style="list-style-type: none"> • Develop research aims • Complete comprehensive literature review • Develop study design and procedures
Thesis I	Develop all necessary tools for study (surveys, interviews, consent advertisements, etc.)	<ul style="list-style-type: none"> • Formulate research instruments for data collection • Pilot survey/interview instruments • Design plan for data analysis
Thesis I	Complete full protocol	<ul style="list-style-type: none"> • Demonstrate principles of scientific writing • Operate the BCM BRAIN platform • Compose full research protocol
Thesis I	Seek all necessary institutional approvals, including IRB approval	<ul style="list-style-type: none"> • Submit protocol to the Thesis I course director and, if required for project, to IRB. • Address faculty and IRB reviewer comments • Obtain Program/IRB protocol approval
Thesis II	Begin study recruitment	<ul style="list-style-type: none"> • Coordinate recruitment/accrual process
Thesis II	Troubleshoot accrual issues with thesis chair/committee	<ul style="list-style-type: none"> • Assess progress of recruitment
Thesis II	Data collection	<ul style="list-style-type: none"> • Collect data in organized format (ex: RedCap, Excel, Box, etc.)

		<ul style="list-style-type: none"> • Maintain privacy standards as required by the IRB
Thesis II	Begin composing thesis	<ul style="list-style-type: none"> • Draft background, methods • Identify journal to which to submit final manuscript • Create manuscript outline, following the requirements of desired journal
Thesis II and Thesis III	Data analysis	<ul style="list-style-type: none"> • Analyze data • Interpret results • Consult with thesis committee
Thesis III	Complete thesis manuscript draft	<ul style="list-style-type: none"> • Submit thesis manuscript draft to committee • Request and schedule date for defense with full advisory committee
Thesis III	Complete mock NSGC abstract	<ul style="list-style-type: none"> • Create effective visual aid to summarize thesis project • Prepare to disseminate thesis conclusions to the professional community • Prepare for post-GCP professional development
Thesis III and GCP Graduation Requirement	Complete final manuscript and submit to the GCP	<ul style="list-style-type: none"> • Elicit final feedback from thesis committee • Make final revisions to manuscript • Submit final manuscript with completed form, "Application for Approval of Master's Thesis" • Format thesis for manuscript submission per journal requirements
GCP Graduation Requirement	Oral thesis defense	<ul style="list-style-type: none"> • Present thesis to full advisory committee, BCM faculty, and invited guests
GCP Graduation Requirement	Poster Presentation	<ul style="list-style-type: none"> • Create and present a poster as part of the graduation colloquium

BCM Genetic Counseling Program

Thesis Committee Composition Guidelines

Key Requirements:

1. The thesis committee consists of a minimum of 3 members and a maximum of 5 members total. One of the 3-5 members must be the Thesis Chair.
2. The Thesis Chair must be a BCM faculty member with ABGC certification (Certified Genetic Counselor) or a MD and/or PhD degree. A person with degrees/certifications not listed here can serve as chair with the approval of GCP leadership and Thesis course directors.
3. At least one member must have expertise in the student's thesis subject of interest.
4. At least one member must have experience on graduate student committees.
5. At least one member must be a Certified Genetic Counselor from an academic institution.
6. Any one person may satisfy one or more of the above criteria.
7. No more than 2 committee members may be non-BCM or non-BCM-affiliated (TCH) faculty. All non-BCM or non-BCM-affiliated committee members must submit to the GCP a NIH-format biosketch.

BCM Genetic Counseling Program

Biosketch Template

BCM School of Health Professions / Genetic Counseling Program

THESIS COMMITTEE MEMBER BIOGRAPHICAL SKETCH

Provide the following information for the individual, neither BCM-faculty nor BCM-affiliated faculty (TCH), who intends to serve on a Master's student research thesis committee. **DO NOT EXCEED FOUR PAGES.**

NAME:

ORGANIZATION / INSTITUTION:

POSITION TITLE:

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	Completion Date MM/YYYY	FIELD OF STUDY

- A. Personal Statement (Brief statement of expertise or skill set you offer to the student on whose research thesis committee you intend to serve.)

- B. Positions, Certification, and Honors (include dates)

- C. Contributions to Mentorship

- D. Research, Funded Grants, and/or Scholastic Endeavors (Please include only accomplishments from the past 5 years.)

BCM Genetic Counseling Program

Student Role & Responsibilities

Primary Role

The student will conduct scientific research in order to complete the requirements for the M.S. degree in Genetic Counseling.

Responsibilities

Academic Development

- Engage in creativity and critical thinking
- Develop research design, resources for conducting research, and collaborations with experts in order to enhance the selected project
- Analyze and interpret data and information with regard to selected project
- Conduct research within ethical and scientific guidelines (IRB completion as needed)
- Communicating findings in oral and written format

Research

- Develop research question, research methods and protocol, and research manuscript
- Complete research deliverables and manuscript according to deadlines
- Create mock NSGC abstract

Skill Development

- Demonstrate planning, time management, and organization of project
- Initiate collaboration and professional relationships to aid in completion of project
- Review and revise aspects of the research project in response to feedback from thesis committee

Communication

- Incorporate thesis chair's feedback and questions regarding project
- Demonstrate a professional and respectful attitude towards thesis chair, thesis committee members, collaborators, subjects, and project
- Respond to communication and be available for communication within reasonable and appropriate timeframes
- Check in with your thesis chair on a **weekly basis** to monitor work on the project (in person or by videoconference).
- During your first year, schedule and meet with your thesis chair as needed to develop the project. After the Thesis Chair Agreement form has been signed and submitted to the GCP at the end of the fall semester during year one, you will schedule and meet with your thesis chair on a **monthly basis** for a total of 16 times (in person or by videoconference) between January of the first year and May of the second year. Additional meetings may be added as recommended by the chair or GCP.
- Schedule of Monthly meeting requirements:
 - First year, Spring term = once during each month starting in January

- Summer between first and second year = once during each month June, July
- Second year, Fall term = once during each month August, September, October, November
- Second year, Spring term = once during each month starting in January
- During your first and second years, schedule and meet with the full advisory committee for 6 times total to discuss the project, monitor progress, and troubleshoot obstacles to meeting GCP benchmarks (in person or by videoconference). A full advisory committee comprises of the student and at least 3 thesis committee members which must include the chair. The PD and APD (GCP leadership) should be invited to all meetings, however, they are not required to be present. Any exceptions or modifications must be approved by GCP leadership.
 - Full advisory meeting #1 = First year, February
 - Full advisory meeting #2 = First year, April
 - Full advisory meeting #3 = Second year, August
 - Full advisory meeting #4 = Second year, October
 - Full advisory meeting #5 = Second year, January
 - Full advisory meeting #6 = Second year, March
- Schedule and complete an oral thesis defense during the Spring term of the second year. The full advisory committee will attend the defense.

BCM Genetic Counseling Program

Thesis Committee Members Roles & Responsibilities

Thesis Committee Member Eligibility

A GCP student's thesis committee member will have knowledge and expertise in the subject area in which the student seeks to conduct a research project.

Primary Role of Thesis Committee Members

- Together with the thesis chair, work with the student to develop a thesis project that is appropriate and adequate to meet the requirements of the thesis for a M.S. in Genetic Counseling at BCM.
- To guide the student through timely completion of a research thesis project

Primary Responsibilities of Thesis Committee Members

- Advise the student on study design, feasibility, question formulation, data analysis, and presentation.
- Review and provide feedback to the student about written components of the thesis project to be submitted to courses Thesis I-III, prior to submission of the final thesis manuscript.
- Review, provide feedback, and edit the student's final thesis manuscript prior to submission to the GCP.
- Prepare the student for their oral thesis defense.
- Meet with the student for a full advisory committee meeting for 6 times total to discuss the project, monitor progress, and troubleshoot obstacles to meeting GCP benchmarks (in person or by videoconference). A full advisory committee comprises of the student and at least 3 thesis committee members which must include the chair. The PD and APD (GCP leadership) should be invited to all meetings, however, they are not required to be present. Any exceptions or modifications must be approved by GCP leadership.
 - Full advisory meeting #1 = First year, February
 - Full advisory meeting #2 = First year, April
 - Full advisory meeting #3 = Second year, August
 - Full advisory meeting #4 = Second year, October
 - Full advisory meeting #5 = Second year, January
 - Full advisory meeting #6 = Second year, March
- During April of the student's second year, attends the oral thesis defense in person or by videoconference. The full advisory committee will attend the student's oral thesis defense.

BCM Genetic Counseling Program

Research Thesis Chair Roles & Responsibilities

Thesis Chair Eligibility

The GCP student thesis chair must be a BCM faculty member. Board certified genetic counselors, MDs or PhDs may serve as chair. A person with degrees/certifications not listed here can serve as chair with the approval of GCP leadership and Thesis course directors.

Primary Role of Thesis Chair

- To work with the student to develop a thesis project that is appropriate and adequate to meet the requirements of the thesis for a M.S. in Genetic Counseling at BCM.
- To supervise and guide the student through timely completion of a research thesis project, a requirement of Master's degree program in Genetic Counseling. The thesis project culminates in the student's submission ready manuscript and oral thesis defense.
- To serve as primary mentor about the student's project and to participate in the student's thesis defense (in person) as chair of the thesis committee.
- To serve as the primary liaison between the student conducting research activities and GCP leadership, the latter of whose role is to provide project oversight within the GCP.
- To interface with the student's other research committee members (2-4 members + 1 chair total)

Primary Responsibilities of Thesis Chair

- To serve as principal investigator (PI) of a research protocol requiring BCM IRB approval, if approval is needed for the GCP student to engage in research activities. All thesis committee members must have completed BCM BRAIN training. Non-BCM-affiliated principal investigators will help the student identify a BCM-affiliated individual who can sponsor/facilitate submissions to BCM IRB (this would be an uncommon occurrence).
- To assume responsibility for monitoring the student's work and reporting benchmarks to GCP leadership and thesis course directors.

Responsibilities of Thesis Chair by Didactic Domain

Academic Development

- Encourages both creativity and critical thinking.
- Assists with discovery of research methods, identification of resources for conducting research or developing a protocol, and collaboration with local experts to enhance selected project.
- Guides analytical interpretation of data pertaining to selected project.

- Guides student within a framework of ethical and scientific research and/or product development.
- Reviews and provides feedback on all components of the student's thesis written manuscript in a timely manner, as portions are due for submission to the Thesis II and III Course Directors in a stepwise manner prior to final submission (Background, Methods, etc).
- Maintains familiarity with project requirements set forth in the Thesis Project Manual.
- Identifies weaknesses and encourages training/education in areas relevant to the proposed project

Research

- Provides feedback to student about research protocol and methods.
- Assists student with refining hypothesis and/or product development.
- Provides constructive advice about research methods and the relationship between the research hypothesis and the protocol.

Skills Development

- Guides student through planning, time management, and organization of the project to ensure timely achievement of GCP benchmarks.
- Advises student about professional and scholarly communication, medical journal manuscript writing, scientific poster creation, and thesis presentation and defense.

Communication

- Listens to student concerns and questions regarding the project.
- Displays a professional and respectful attitude toward student and their project.
- Is available and responsive to student contact, within a reasonable time frame.
- Is available and responsive to GCP, within a reasonable time frame.
- Communicates progress, issues, and concerns to the Program Research Advisor.
- Is available for student check ins as needed (student should be updating the chair on a weekly basis with regards to project status).
- During student's first year, meets with the student as needed to develop the project. After the Thesis Chair Agreement form has been signed and submitted to the GCP at the end of the fall semester during year one, the chair will meet with the student on a **monthly basis** for a total of 16 times (in person or by videoconference) between January of the first year and May of the second year. Additional meetings may be added as recommended by the chair or GCP.
- Schedule of Monthly meeting requirements:
 - First year, Spring term = once during each month starting in January
 - Summer between first and second year = once during each month June, July
 - Second year, Fall term = once during each month August, September, October, November
 - Second year, Spring term = once during each month starting in January
- During the student's first and second years, meet with the student for a full advisory committee meeting for 6 times total to discuss the project, monitor progress, and troubleshoot obstacles to meeting GCP benchmarks (in person or by videoconference). A full advisory committee comprises of the student and at least 3 thesis committee members which must include the chair. The PD and APD (GCP leadership) should be invited to all meetings, however, they are not required to be present. Any exceptions or modifications must be approved by GCP leadership.

- Full advisory meeting #1 = First year, February
- Full advisory meeting #2 = First year, April
- Full advisory meeting #3 = Second year, August
- Full advisory meeting #4 = Second year, October
- Full advisory meeting #5 = Second year, January
- Full advisory meeting #6 = Second year, March
- During April of the student's second year, attends the oral thesis defense in person, participating as the chair of the thesis committee. The full advisory committee will attend the student's oral thesis defense.

BCM Genetic Counseling Program (GCP)

Thesis Chair Agreement Form

A research thesis project is a requirement of Master's degree program in Genetic Counseling. The thesis project culminates in the student's submission of a written manuscript to the GCP that serves as the thesis and an oral thesis defense.

This document is an agreement between the student, the Thesis Chair, and the BCM GCP.

A document called "Research Thesis Chair: Roles and Responsibilities" has been distributed and discussed. An agreement concerning the following roles and responsibilities has been reached. The main points are highlighted below. Please refer to the aforementioned document for a complete list.

Primary Role of Thesis Chair

- To work with the student to develop a thesis project that is appropriate and adequate to meet the requirements of the thesis for a M.S. in Genetic Counseling at BCM.
- To supervise and guide the student toward meeting calendar deadlines with timely completion of a research thesis project.
- To serve as primary mentor about the student's project and to participate in the student's thesis defense as chair of the thesis committee.
- To serve as the primary liaison between the student conducting research activities and GCP leadership.
- To interface with the student's other research committee members.

Primary Responsibilities of Thesis Chair

- To serve as principal investigator (PI) of a research protocol requiring BCM IRB approval, if approval is needed for the GCP student to engage in research activities.
- To assume responsibility for monitoring the student's work and reporting benchmarks to GCP leadership and thesis course directors.

Thesis Chair Communication Benchmarks

- Weekly check-ins with the student to monitor work on the research thesis project.
- Monthly meetings with the student during the Spring term (year one) and Fall and Spring terms (year two) to monitor progress.
- Attendance at a total of 6 full advisory committee meetings during the entirety of the student's enrollment in the GCP. A full advisory committee comprises of the student and at least 3 thesis committee members which must include the chair.
 - Full advisory meeting #1 = First year, February
 - Full advisory meeting #2 = First year, April
 - Full advisory meeting #3 = Second year, August
 - Full advisory meeting #4 = Second year, October
 - Full advisory meeting #5 = Second year, January
 - Full advisory meeting #6 = Second year, March

- Attendance in person at the student's oral thesis defense during the Spring term of the student's second year of the GCP, participating as the chair of the thesis committee. The full advisory committee will attend the student's oral thesis defense.

AGREEMENT

We, the undersigned, have discussed all points listed above and other related topics specific to the BCM GCP research thesis project. We have reviewed the "Research Thesis Chair: Roles and Responsibilities" document. We have reached a mutually satisfactory understanding. If there are issues pertaining to this agreement and not covered here, they will be documented on an additional page.

Student Signature	Name (Printed)	Date
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Research Thesis Chair Signature	Name (Printed)	Date
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Program Director Signature (will sign after submission to GCP)	Name (Printed)	Date
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Associate Program Director Signature (will sign after submission to GCP)	Name (Printed)	Date
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BCM Genetic Counseling Program (GCP)

Thesis Committee Members Agreement Form

Student Name: _____ Date Submitted: _____

Description of student's research interest: _____

a) Name, Degree: b) Dept & Institutional Affiliation & Position: c) BCM Faculty: Yes No d) Certified GC: Yes No	Member Signature*	Area of Expertise (key words)
Chair (Research Advisor) a) b) c) BCM Faculty: Yes <input type="checkbox"/> No <input type="checkbox"/> d) Certified GC: Yes <input type="checkbox"/> No <input type="checkbox"/>		
a) b) c) BCM Faculty: Yes <input type="checkbox"/> No <input type="checkbox"/> d) Certified GC: Yes <input type="checkbox"/> No <input type="checkbox"/>		
a) b) c) BCM Faculty: Yes <input type="checkbox"/> No <input type="checkbox"/> d) Certified GC: Yes <input type="checkbox"/> No <input type="checkbox"/>		
a) b) c) BCM Faculty: Yes <input type="checkbox"/> No <input type="checkbox"/> d) Certified GC: Yes <input type="checkbox"/> No <input type="checkbox"/>		
a) b) c) BCM Faculty: Yes <input type="checkbox"/> No <input type="checkbox"/> d) Certified GC: Yes <input type="checkbox"/> No <input type="checkbox"/>		

**signature indicates that you have reviewed the "Research Thesis Committee Members: Roles and Responsibilities" document and agree to serve on the student's committee.*

Approved (will sign after submission to GCP):

Abstract and Poster Presentation Guidelines

- Prior to graduation each student will create a poster to be presented as part of the graduation colloquium. The student will follow NSGC guidelines for creation of the poster.
- **As part of Thesis III, each student will create and submit a mock abstract summarizing their thesis project.** Students are not required to submit the abstract to the NSGC Annual Conference, but are encouraged to do so (or to an equivalent conference). NSGC requires that abstracts submitted for presentation (poster or platform) at an AC discuss original work and make a single clear point. A character limit of 2,100, including spacing, (or about 300 words) is recommended.
- Completion of the mock abstract assignment is intended to help the student: (1) in the creation of an effective visual aid to summarize their thesis project, (2) prepare to disseminate their thesis conclusions to the professional community, and (3) prepare for post-GCP professional development.
- To provide the student with more guidance, the GCP recommends that the mock abstract adhere to the following guidelines:

Preparing an Abstract for Submission

Contact Information

- Your name, degree, institution, address, phone number, and email address must be provided. The submitting author should be the first author (presenter) of the abstract, unless otherwise noted.

Co-Authors

- Names of co-authors and institutions must be provided.

Abstract Title

- The abstract title should be brief and clearly indicate the nature of the abstract.
- The abstract title must be in title case. Capitalize all nouns, pronouns, adjectives, verbs, adverbs, and subordinate conjunctions (i.e., as, because, although). Except for the first word of the title, lowercase all articles, coordinate conjunctions (i.e., and, or, nor), and prepositions, regardless of length. Also, lowercase "to" when used as an infinitive.
- Additionally, keep letters lowercase if the lowercase letters have a specific meaning, such as aCGH or NIPT.
- Do not put a period at the end of the title.
- For example: Cancer Genetics: Translation of New Concepts to Clinical Care

Use of Product Names

- Non-proprietary (generic/scientific) names should be used and should be lowercase.
- If necessary, you may include a proprietary name in parentheses directly following the generic name after its first mention in the body of the abstract; the first letter of the name of a proprietary drug should be capitalized.

Abbreviations

- Use standard abbreviations. Place abbreviations in parentheses immediately after the first mention of a term or phrase; the abbreviation can then be used throughout the abstract.

Abstract Body, Tables, and Figures

- The abstract may be structured (i.e., abstracts divided into sections using terms such as Introduction, Methods, Results, Conclusions, etc.) or unstructured.
- Do not use bold type or underline formatting. Italic type is acceptable.
- Text may be in multiple paragraphs.
- Special Greek and mathematical symbols are available in a character map within the submission system.
- Use numerals to indicate numbers, except when beginning sentences.
- Simple tables and graphs may be included.
- Any references should be noted as citations within the text and not as footnotes at the end.

Additional tips:

- All illustrations (graphs, pictures, figures, and/or tables) should be large enough for easy observation. Expand the view on your computer screen to at least 150% to make sure images are not blurry.
- Use matte finish on graphs or pictures to reduce glare.
- All figures and tables should have brief captions.

BCM Genetic Counseling Program (GCP)

Summary Checklist for Thesis Completion

The checklist below may be used to track each step toward completion of the manuscript and Master's thesis. Be sure to ask for guidance and/or assistance and anticipate problems to avoid issues that could threaten the success of the research. It is also recommended that copies be made of references, data, results, surveys, paper drafts, and computer files, to avoid having to re-enter and re-analyze data due to computer malfunction:

- Y Potential research topic(s) identified and submitted to Genetic Counseling Research Methods course director (October, see research methods in GC syllabus for due date, Fall 1)
- Y Thesis chair identified and approved. Thesis Chair Agreement form signed and submitted (November, see research methods in GC syllabus for due date, Fall 1)
- Y Thesis committee members identified and approved. Thesis Committee Members Agreement form signed and submitted (November, see research methods in GC syllabus for due date, Fall 1)
- Y Submit annotated bibliography for the selected project to Thesis I course director (January, see thesis I syllabus for due date, Spring 1)
- Y Submit purpose and objectives for the selected project to Thesis I course director (January, see thesis I syllabus for due date, Spring 1)
- Y Meet with Thesis Chair and Submit Monthly Log (January, Spring 1)
- Y Meet with Thesis Chair and Submit Monthly Log (February, Spring 1)
- Y Submit study design and procedures for the selected project to Thesis I course director (February, see thesis I syllabus for due date, Spring 1)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (February, Spring 1)
- Y Thesis status report #1 submitted to GCP (February, Spring 1)
- Y Potential research topic identified and project draft proposal submitted to Thesis I course director (February/March, see thesis I syllabus for due date, Spring 1).
- Y Meet with Thesis Chair and Submit Monthly Log (March, Spring 1)
- Y Thesis Project Approval Form version 2 submitted to Thesis I course director (April, see thesis I syllabus for template and due date, Spring 1)
- Y Present project to thesis course directors, chair, and GCP leadership as (April, see thesis I syllabus for template and due date, Spring 1)
- Y Meet with Thesis Chair and Submit Monthly Log (April, Spring 1)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (April, Spring 1)
- Y Thesis status report #2 submitted to GCP (April, Spring 1)
- Y Final Project Approval Form submitted to Thesis I course director (April, see thesis I syllabus for template and due date, Spring 1)
- Y Meet with Thesis Chair and Submit Monthly Log (May, Spring 1)
- Y BRAIN application submitted for IRB review and approval (May, see thesis I syllabus for template and due date, Spring 1)
- Y Meet with Thesis Chair and Submit Monthly Log (June)

- Y Meet with Thesis Chair and Submit Monthly Log (July)
- Y Submission of Final Protocol to thesis II course directors (August, see thesis II syllabus for due date, Fall 2)
- Y Submission of IRB-approved protocol (human subject report with protocol number, expiration date) to GCP (August, Fall 2) * due to COVID, penalties will not be enforced for the 2020-2021 academic year
- Y Meet with Thesis Chair and Submit Monthly Log (August, Fall 2)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (August, Fall 2)
- Y Thesis status report #3 submitted to GCP (August, Fall 2)
- Y Updated annotated bibliography to thesis II course directors (August, see thesis II syllabus for due date, Fall 2)
- Y Data collection begun (Fall 2)
- Y Meet with Thesis Chair and Submit Monthly Log (September, Fall 2)
- Y Meet with Thesis Chair and Submit Monthly Log (October, Fall 2)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (October, Fall 2)
- Y Submit first draft of Background to thesis II course directors (October, see thesis II syllabus for due date, Fall 2)
- Y Submit final Background to thesis II course directors (October, see thesis II syllabus for due date, Fall 2)
- Y Thesis status report #4 submitted to GCP (October, Fall 2)
- Y Data analysis begun (Fall 2).
- Y Submit first draft of Methods to thesis II course directors (November, see thesis II syllabus for due date, Fall 2)
- Y Submit Methods to thesis II course directors (November, see thesis II syllabus for due date, Fall 2)
- Y Meet with Thesis Chair and Submit Monthly Log (November, Fall 2)
- Y Schedule meeting with Phil Lupo and Michael Scheurer for January (November, see thesis II syllabus for due date, Fall 2)
- Y Meet with Thesis Chair and Submit Monthly Log (January, Spring 2)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (January, Spring 2)
- Y Thesis status report #5 submitted to GCP (January, Spring 2).
- Y Scheduled date/time in April of oral defense of thesis (By end of January, Spring 1).
- Y Data analysis finalized and writing of results section begun (February and March, Spring 1 and 2)
- Y Meet with Thesis Chair and Submit Monthly Log (February, Spring 2)
- Y Meet with Thesis Chair and Submit Monthly Log (March, Spring 2)
- Y Full Thesis Committee meeting- must include chair and at least two members of the committee (March, Spring 2)
- Y Thesis status report #6 submitted to GCP (March, Spring 2).
- Y Submit Results to thesis III course directors (March, see thesis III syllabus for due date, Spring 2)
- Y Submit Discussion to thesis III course directors (March, see thesis III syllabus for due date, Spring 2)

- Y Mock NSGC abstract submitted to Thesis III course directors (April, see thesis III syllabus for due date, Spring 2)
- Y Oral thesis defense completed (April, Spring 2)
- Y Draft of final thesis manuscript submitted to thesis committee for review. This iterative process repeated, as needed to incorporate feedback (1 week before defense, Spring 2)
- Y Meet with Thesis Chair and Submit Monthly Log (May, Spring 2)
- Y NSGC poster submitted to Thesis III course directors (April, see thesis III syllabus for due date, Spring 2)
- Y Submit Final thesis manuscript to thesis III course directors (May, see thesis III syllabus for due date, Spring 2)
- Y Final thesis manuscript, together with completed form "Application for Approval of Master's Thesis," submitted to GCP (May, Spring 2)
- Y Poster for graduation Colloquium submitted to the GCP (May, Spring 2)

Each step requires time. Do not wait until the last minute to prepare the written document. Allow a minimum of two weeks for thesis chairs to review and critique the paper in its comprehensive draft form. Faculty and administration availability and accessibility to read and approve papers may be impacted by outside faculty commitments, so the approval process should be timely to assure completion of all requirements by the date of graduation.

Please note, if one or more program related thesis project benchmarks are not submitted by the published deadline, the student will be withheld from their clinical rotation until they complete the respective benchmark. Upon completion of the benchmark, the student will be responsible for making up any missed time in the clinic that would be necessary to satisfy the requirements of the clinical rotation. This may include spending time in clinic over winter break or utilizing the time previously planned for the elective rotation in the spring of year two to remediate.

BCM Genetic Counseling Program

Timeline of Oral Defense

1. In Fall of the students' second year, the GCP will notify students in Thesis II to begin planning for their oral defense. (End of November, Fall 2 term)
2. Students are expected to hold their oral defense in April of their second year. (Spring 2 term)
3. Students will independently coordinate with their thesis committees a date and time for the oral defense to be held in April. The full thesis committee must attend. The oral defense will be 90 minutes in duration.
4. By end of January of the student's second year, students must inform the GCP of the date and time of the oral defense in April, based on full committee availability. Identification of this date and time will be a graded milestone in Thesis III. (End of January, Spring 1 term)
5. The GCP reserves a meeting room for the oral defense, and sends an Outlook appointment to the student and the full thesis committee. **The full thesis committee must attend the oral defense; the thesis chair is required to attend in person.** A portion of the oral defense is open to the public, and the GCP will advertise the event.
6. One week (7 days) prior to the date of the oral defense, the student will submit a draft of their completed written thesis manuscript to the GCP. The draft will be distributed to the full thesis committee and GCP leadership to read in advance of the defense. Submission of the draft will be a graded milestone in Thesis III. Please note this is a draft only. The student will have time to revise the draft, based on committee feedback, prior to submission to the GCP in May.
7. On the date of the oral defense in April, the event will be formatted as indicated in the table below.

Duration (min)	Description	Session	Attended by
45	Presentation of thesis project	OPEN	Student, Full thesis committee, GCP Leadership, BCM Faculty, Invited guests
15	Q&A	OPEN	Student, Full thesis committee, GCP Leadership, public, BCM Faculty, Invited guests
30	Thesis committee meeting	CLOSED	Student, Full thesis committee only, GCP representative (for monitoring)
90	Total time		

8. Immediately following the open session, the public will leave the room (or the student, thesis committee, and GCP representative will move to another reserved meeting room). The next 30 minutes will be a closed session, during which the student meets privately with their full thesis committee. During the closed session, the full thesis committee will review the presentation with the student, asking additional questions. **A pass/fail grading form will be provided to the full thesis committee, and the thesis chair is responsible for submitting a completed form to the GCP. The pass/fail grade is based on 1) the written manuscript and 2) the oral defense.**

BCM Genetic Counseling Program
Application for Approval of Master's Thesis

This form must be submitted to the GCP prior to graduation at the time of final manuscript submission.

Project Title: _____

Student Investigator: _____

E-Mail Address: _____

Faculty Mentors: _____

(Type Name of Mentor Here)
Thesis Chair

Date

Signature
Daniel Riconda, MS, CGC
Program Director

Date

Signature
Robert J. McLaughlin, PhD
Dean, School of Health Professions

Date

BCM Genetic Counseling Program
Request for Extension of the Completion Date for the
Master's Thesis Project

In the event that an extension is needed, the following form must be submitted to the GCP for approval.

Name: _____

Project Title: _____

Primary Mentor/Thesis Chair: _____

Committee Members: _____

Briefly state the reason for your request for an extension including the factors that have contributed to a delay in completing your project. Please also clearly outline the steps that remain to be completed in your project.

I request a 30-day extension on the completion date of my Master's Thesis from _____ to _____.
(date) (date)

Student Signature

Date

Thesis Chair Signature

Date

Program Director Signature

Date

BCM Genetic Counseling Program

Contributor and Authorship Standard

School of Health Professions

Introduction

The extent to which a faculty member and graduate student contribute to a scholarly project will be used to determine authorship on any poster, presentation or manuscript submitted for publication. As a contributor, each participant accepts, at the outset, a certain portion of the effort needed to bring a research project, poster, presentation and manuscript to fruition. As the work progresses, the actual work performed may be compared to that intended and adjustments made as needed. At the conclusion of the work, each contributor is given either authorship credit or acknowledgement. Approached in this fashion, “contributorship” is intended to be a fair and transparent system that should improve the allocation of credit and responsibility for published work. Those who have done a major portion of the work on a paper will receive—if permitted by the editors of the journal in which it is published—credit for both general authorship and for their specific contributions to the research.

General Consideration

This standard is intended to apply to all scholarship conducted by faculty and students within the GCP offered through the School of Health Professions of Baylor College of Medicine, as well as program faculty who collaborate with investigators from other departments or institutions. We hope the standard will lead to fewer disputes over authorship and fairer treatment of junior researchers.

Purposes of Standard

The purposes of these standards are specifically intended to: [1] enhance scholarly collaboration and promote academic integrity; [2] protect the academic future of learners within the program; and [3] prepare faculty members of the GCP for the increasingly stringent requirements of journals for the disclosure of the actual work performed by coauthors. This standard is intended to reduce disputes over authorship and the inappropriate designation of non-contributing persons as authors. It is no panacea, and it will not prevent abuse of credit for publications. Sound policy can promote but cannot ensure academic integrity.

Planning Collaboration at the Outset

Any mechanism for the allocation of credit for academic work is most useful when the individuals involved in a research project plan their collaboration effectively from the beginning. This serves as a way to negotiate both work and authorship at the same time; those who want authorship need to agree to do more work. So the first step is to agree on who contributes what. The second step, which may occur at the same meeting, is to agree on whose contributions merit authorship. Some journals may not list authors as such but list all of the contributors together with a description of what each did. Most journals still have authorship bylines, and the contributor list needs to be separated into those whose work merits authorship and those whose work will simply be acknowledged. For these journals, contributorship is not an end in itself but a step toward determining authorship.

Establish the Order of Authors

The preliminary order of authorship should be established during the earliest of meetings between the investigators involved. This standard makes no stipulations about the recommended order of authorship and leaves this decision to the authors themselves. However, the Baylor Faculty Appointments and Promotions Committee assumes that credit for published work is in approximately this order: First author - receives primary credit; Second author - shares in the next level, Third up to last authors - receive progressively less credit, and Last author is seen as the senior person whose laboratory, database, or intellect is the key driver for the work. In terms of student research, the primary mentor becomes second author and the secondary mentor is third author.

Evolution Over Time

Thesis projects change and new people join the team, which should be noted and their participation and level of credit planned. People also fail to perform their duties, in which case their status should be altered. In this regard, it is helpful to reflect on what has actually been done, and by whom, at the end of the study, as opposed to considering only the intended roles of the participants in the planning stages. Should the project be prepared for publication, order of authorship may change in reflection of work contributed to bring the project to publication.

Responsibility for Standard Implementation

Primary responsibility for the implementation of this standard rests with the project's lead author. More junior researchers, such as students, residents, and fellows, are encouraged to consult with their mentors to ensure that their scholarly efforts are properly planned and credited. Faculty members who are not involved in the project in question are usually in a good position to provide an outside perspective.

Dispute Resolution

Determination of authorship can lead to significant disputes. For example, faculty members of the GCP may collaborate with members of other departments who may have different beliefs about what level of participation warrants authorship. The administration of the GCP encourages collaborators to resolve potential disputes by negotiation among themselves at the earliest practical time.

BCM Genetic Counseling Program

IRB Information

The Institutional Review Board (IRB) is a committee comprised of physicians, statisticians, researchers, community advocates, and individuals from both inside and outside the Baylor College of Medicine community that ensures that research protocols involving human subjects are conducted ethically, and that the rights and safety of study participants are protected. All research protocols conducted by Baylor College of Medicine faculty that involve human subjects must be approved by the BCM IRB before they begin.

Every institution that conducts or supports biomedical or behavioral research involving humans as subjects must, by federal regulations, have an IRB that initially approves and periodically reviews the research to protect the rights of the research subjects. The College has established six IRBs and an IRB Office.

Each student will be required to submit a research protocol for approval or exemption by the Baylor College of Medicine IRB, if an IRB approval is not already in place. Additionally, each student, thesis chair, and committee member will need to complete online CITI training. Students will complete this training in the Thesis I Course in the Spring of the didactic year. Mentors will need to complete the training individually.

Additional Information regarding the IRB can be found here:

<http://intranet.bcm.edu/?tmp=/research/oor/human/irb/home>

The Human Research Protections Manual can be found here:

http://intranet.bcm.edu/apps/research/oor/a_c/document/irb_manual.pdf

Access to the BRAIN platform for submission of a research protocol to the IRB can be found here:

<https://brain.bcm.edu/brainlogin.asp>

BCM Genetic Counseling Program

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