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Introduction

The Unique Character of a PhD in Translational Health Sciences

The Doctor of Philosophy (PhD) in Translational Health Sciences (THS) is an interdisciplinary program that strives to educate individuals capable of analyzing, synthesizing and contributing to the science of translational health sciences. The program encourages students to integrate knowledge from three scientific disciplines (collaboration science, implementation science, and translational research) to build a scholarly community dedicated to advancing the knowledge base of translational health sciences. As such, the program values the diversity and integration of perspectives that students bring to the program and encourages students to work beyond their previous training.

General Information

The PhD in THS program is housed in the Department of Clinical Research and Leadership within The George Washington University (GW) School of Medicine and Health Sciences (SMHS). The program’s mission is aligned with that of the SMHS, which is dedicated to improving the health of our local, national, and global communities by:

- Educating a diverse workforce of tomorrow’s leaders in medicine, basic science, and health sciences.
- Healing through innovative and compassionate care.
- Advancing biomedical, translational, and health services delivery research with an emphasis on multidisciplinary collaboration.
- Promoting a culture of excellence through inclusion, service, and advocacy.

As a globally recognized academic medical center, GW SMHS embraces the challenge of eliminating health disparities and transforming health care to enrich and improve the lives of those we serve. The mission of the SMHS is reflected in the PhD program goals:

Program Goals.

1. Develop empirical, innovative, high quality, systems solutions to health problems grounded in translational and implementation concepts.
2. Use qualitative, quantitative, or mixed methods paradigms to ethically conduct rigorous research with implications for collaborative education, practice, science, and policy.
3. Apply principles of collaboration and team science to optimize practices and effect change in science, health, and education implementation and policy.
4. Develop strategies for implementation, evaluation and dissemination of programs to enhance existing and emerging processes for addressing complex health issues.
5. Design, complete and defend original research expanding the evidence-base of health sciences, with findings discussed from the perspectives of collaborative practice, implementation, and translational science.
About the Department of Clinical Research and Leadership. The Department of Clinical Research and Leadership offers programs for professionals who are interested in obtaining a quality education, working with experienced and knowledgeable faculty and practitioners, and contributing to the development of new knowledge and practice within their chosen clinical field of practice. Comprised of dedicated faculty and staff, our bachelor’s, master’s, certificate, and doctoral programs approach education and leadership development from an interdisciplinary perspective. In this way, we cultivate students’ skills in critical thinking and research while guiding important insights into students’ chosen field of study. We embrace the fundamental concepts of adult learning and encourage collaboration, experiential learning, creative thinking, and self-direction.

As a program within the Clinical Research and Leadership Department, the PhD in THS is dedicated to preparing informed, collaborative, reflective scientists that will contribute to the advancement of knowledge and practice in healthcare by synthesizing knowledge from applicable fields, translating knowledge to analyze and address systemic issues in health and health policy, informing practical change innovations, and investigating the processes and strategies that allow for effective and efficient program implementation to promote social benefit.

Program Overview. The primary purpose of the PhD in THS is to prepare informed, reflective translational scientists to contribute to the scientific knowledge base of translational health sciences.

Degree candidates are to demonstrate knowledge across selected fields, show mastery in the ability to synthesize information across disciplines and boundaries, use advanced research methods, and disseminate information effectively.

Learning at the advanced graduate level requires a program that enables students to pursue topics and ideas in depth. Such a program includes a required period of intensive study. In coordination with students, program faculty determine the plan of study most appropriate to help achieve the student’s agreed upon goals. The plan of study is based on the established curriculum followed by all students in the program.

Doctoral candidates will plan and execute a dissertation that reports original research and contributes to the development of theory, methods, and/or practice in translational health sciences.
Why Translational Health Sciences?

*The gap between what we know and what we do in public health is lethal to Americans, if not the world.*
— David Satcher MD, PhD, Former U.S. Surgeon General

Translational Health Sciences (THS) is the study of processes and outcomes of multidirectional and multidisciplinary integration across basic research, patient-oriented research, and population-based research, with the long-term aim of improving the health of the public.¹ The GW program has a particular focus on training scientists in THS to study implementation gaps in healthcare by adopting dynamic, adaptive, transdisciplinary, and multi-scale approaches to generate knowledge in what has typically been a controlled and randomized process in health research fostering a one-size-fits-all health delivery. Graduates of this PhD will be able to analyze and diagnose healthcare issues from organizational and population health perspectives, thus creating unique context-specific implementation questions.² Developing capacity in these areas produces scientists with a collaborative worldview, an ability to manage and translate innovative research, and a profound focus on how discovery can be implemented in health systems through evidence generation and changes in science and organizational policy.

**The Translational Health Sciences Program.** Doctoral study in the PhD in THS is based on an understanding of how innovation in practice and research is achieved by the integration of knowledge in three key foundational disciplines – collaboration science, translational research, and implementation science. These three disciplines support innovations in health practices and research necessary to promote change at the organizational, group, team and individual levels. These three disciplines are reflected in the overall program goals and were used to inform the curriculum competencies.

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**Foundational Disciplines and Rationale.**

- **Collaboration and Team Science** forms the foundation by which research in translational health sciences is conducted, and informs practice and policy. Collaboration science focuses on issues of stakeholder involvement and knowledge exchange in shared goals, understanding different interfacing frames of thought and cultures, complex problem solving, resource management, ethical considerations unique to collaborative projects, and engaging scientists and non-scientists alike in decision-making.

  **Rationale:** Grounding doctoral health sciences studies in collaboration science prepares graduates to foster mutual engagement across potentially disparate stakeholder networks, including industry, research, practice and policy.

- **Translational Research** is a crosscutting approach that informs associations across a continuum of knowledge generation from basic biomedical discovery to rehabilitation interventions to global population health impact. Developed specifically for medicine and healthcare and championed by the National Institutes of Health (NIH) since 2003, a translational research paradigm requires conceptualizing key health problems broadly in terms of transitions between basic scientific discovery, clinical insights, implications for practice, implications for population health, and improved global health – these transitions are often referred to as the T0/T1-T4 spectrum.

  **Rationale:** Translational research supports integrating, applying and disseminating findings from basic science, applied clinical studies, and policy analysis, as related they relate to solving problems of human health. This integrating approach will help doctoral students develop skills required by scientists who lead research and healthcare in the 21st century.

- **Implementation Science** is the investigation of the dynamic influences in the translation of empirically-tested healthcare and prevention strategies or programs from the clinical or public health knowledge base into routine use. Implementation science reflects a taxonomy of outcomes at three interrelated levels – implementation (e.g., feasibility, costs, sustainability), service (e.g., efficacy, safety, effectiveness), and consumer (e.g., function, symptoms, satisfaction). The field is often referred to as Dissemination and Implementation Science in light of the important role information dissemination plays in the implementation process. Knowledge translation is used broadly to refer to information exchange at many levels, including consumers, students, providers, and policymakers. Underscoring the natural convergence of translational research and implementation science, the program will focus on emergent knowledge within the later phases of translation research, especially the gaps between T2-T3 and T3-T4, for rapid and sustained adoption of effective interventions in real world settings.
**Rationale:** The successful translation of discoveries into products, procedures, and innovations that impact society requires an in-depth understanding of “… the systemic uptake of clinical research findings and other empirically-tested practices to improve the quality (effectiveness, reliability, safety, appropriateness, equity, efficiency) of health care. It includes the study of influences on healthcare professional and organizational behavior.”

**Curriculum Competencies.** The ten curriculum competencies listed below support achievement of the overall program goals and reflect an integration of knowledge across the three foundational disciplines:

1. Create new knowledge through cross-disciplinary inquiry including: 1) Conduct systematic reviews of the literature to describe the knowledge translation gap and 2) Utilize critical appraisals of the literature to inform translational research in health care.
2. Appraise barriers and facilitators to translating research in practice and policy
3. Communicate effectively across diverse setting and stakeholder groups to include 1) conflict management and resolving matters in dispute and 2) interpersonal relationship skills for team effectiveness
4. Engage in collaborative leadership including: 1) Demonstrate strategies for establishing a collaborative environment 2) Practice behaviors that facilitate adaptation to changing environments and expectations and 3) Apply strategies that facilitate goal attainment across the research team
5. Facilitate the development of shared mental models
6. Incorporate diverse perspectives within the planning and implementation of a translational research project in a way that accounts for diversity in all aspects of the research process.
7. Design an evidence based research proposal: 1) Formulate research questions that yield insights for health, clinical practice and/or policy innovation 2) Appraise how stakeholders will engage in translational research 3) Integrate appropriate regulatory and professional standards 4) Select valid study designs 5) Formulate an evaluation approach that integrates process and outcomes
8. Implement, manage and monitor a translational research project in a professional and ethical manner
9. Interpret the evaluation results to derive conclusions about intervention/innovation efficacy and effectiveness make recommendations that inform future research, practice and policy
10. Facilitate the dissemination of knowledge to future research, practice and policy using educational principles

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**Conceptual Model.** To facilitate shared understanding of the dynamics requisite in a PhD in Translational Health Sciences designed to extend traditional views of research, we created the following conceptual model. This conceptual model was informed by the foundational disciplines described above – collaboration science, implementation science, and translational research. The relationship between and among these disciplines, when considered in total, fashions a conceptual model for doctoral studies in translational health sciences that is: 1) dynamic; 2) grounded in collaboration, translation, and implementation; and 3) leads to student outcomes that prepare them as translational scientists.
The following description of several dimensions of the model further explicates and unpacks the tensions inherent in translational health sciences. These dimensions include but are not limited to epistemology, impact, credibility and relevance, dissemination, collaborative ecology, and pedagogy.

**Epistemology**
*The nature and grounds of knowledge especially with reference to its limits and validity*

- **Subjectivist/Post-Positivist** = Asserting validity as subjective experience and contextual. Less testing than exploring and creative; qualifying.

- **Objectivist/Positivist** = Asserting the validity of objective phenomena over subjective experience. Involves use of objective testing techniques, sometimes and often quantifiable.

  *(Problem Solving)*

  *(Hypothesis Testing)*

**Impact**
*The effect of an activity on one or more populations of a community and the well-being of individuals and groups*

- **“Social Impact”** = The effect of an activity on one or more populations of a community and the well-being of individuals and groups.

- **“Significance”** = Refers to the relevance of the particular research approach or focus to progress in the field.
Credibility and Relevance

*The significance of a particular research approach or focus to address a significant problem or critical barrier to progress*

“**Internal**” Validity = Identifying and controlling factors that may provide alternative explanations for the results, such as sources of bias or error.

“**External**” Validity = Real world applicability of research findings, usually in terms of feasibility of delivery to the targeted population. Requires reporting of factors that might influence external validity, such as dosage, time requirements, cost, training and certification, complexity.

Dissemination

*The means by which scholarship is distributed to stakeholders, researchers, policy makers, and those directly impacted by innovations*

“**Active**” Dissemination = An intentional process in which information is tailored and adapted to the needs of targeted end users, then actively communicated to them. Information is synthesized in practice guideline, consensus statements, and systematic reviews.

“**Passive**” Diffusion = An unplanned process that lacks targeted receivers - information is found by active seekers who are highly motivated to access information. Requires the end user to search, retrieve, appraise, and read primary sources in professional journals.

Doctoral students in the PhD in THS will be guided through the synthesis and integration of these (sometimes oppositional) approaches through collaborative learning principles and activities that explore the continuum represented by these viewpoints and their contributions to translational health sciences. Students will be exposed to increasingly higher levels of scholarly consideration as a result. Following are hierarchical typologies of thought and learning that make up the core of this type of scholarship development.
Collaborative Ecology
The nature in which a “collective” consideration impacts the pursuit of science and research

“Systems” Approach = Thinking and action that emphasizes the interdependence and interactive nature of elements within and external to an organization.

Cross-Disciplinary “Synthesis” = Translating across disciplines to arrive at novel approaches, methods, and/or outcomes.

Collaborative “Ecology” = Rediscovering or creating common ground: shared experiences and/or values, intentions, visions.

Pedagogy
The type of teaching and learning that organizes the fundamental ways in which future researchers are educated for new professional identities

Transformational Learning = Perspective transformation, a change in worldview or conceptualization of self, facilitated through accessing and analyzing underlying assumptions.

Integrative Learning = Making connections across concepts, experiences, courses, even disciplines so that learners can apply knowledge and skills to novel and complex situations.

Collaborative Learning = Construction of knowledge through interaction and meaning negotiation with peers and instructors
Active Learning = Construction of knowledge through active engagement in the learning process
Taken all together, these six dimensions form a dynamic system that allows translational health scientists to flexibly pose and address socially valid research questions that have potentially significant impact on health, healthcare, health policy, and research. That dynamic system is illustrated in the program conceptual model shown previously and replicated here.
Pre-Candidacy

Overview: Pre-candidacy Phase of the PhD in Translational Health Sciences

The PhD in THS program is organized as two phases:

1. *Pre-candidacy* – includes successfully completing coursework, comprehensive examinations, and defense of the dissertation proposal
2. *Candidacy* – includes successfully completing research in the approved dissertation proposal, and dissertation defense.

As shown in the figure labeled “Phases of the PhD Program in Translational Health Sciences”, successful completion of phases 1 and 2 result in graduation.

**Phases of the PhD Program in Translational Health Sciences**

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**Advising and Mentoring**
The advising and mentoring system developed for the PhD program in THS is an important component of student success. As adult learners it is each student’s individual responsibility to fully engage in the advising and mentoring system by taking initiative, fully engaging in the advising and mentoring process, maintaining good communication, and completing work in a timely fashion.

For the purposes of the PhD in THS, there is a clear distinction between the roles of academic advising and research mentoring in the doctoral program. The role of an academic advisor is to provide coaching and guidance throughout the pre-candidacy phase of the doctoral program as students find and engage with a broader network of potential research mentors. Students will be assigned one faculty member in an official role of academic advisor. In contrast, it is the student’s responsibility to form a network of both formal and informal research mentors, with the support of the academic advisor. The role of a research mentor can take several forms, ranging from a short-term research immersion or consultation to a longer-term relationship as a member of the dissertation committee. Forming a research mentor network requires support and input to the student from both the academic advisor and the Director of Doctoral Research.

**Academic Advisor**

The academic advisor will be assigned by the program immediately prior to orientation. Academic advisors facilitate doctoral students’ access to needed resources, support adjustments to the demands of doctoral education, and guide individual development plans. The faculty advisor is responsible to:

1. Monitor progress in the program
2. Assist in identifying student’s specific learning needs.
3. Support students in developing and updating an individualized development plan
4. Encourage advisee to use available educational and research resources.
5. Advise the student in the selection of electives.
6. Assist the student in understanding the unique characteristics of translational research questions.

In addition to these advising responsibilities, advisors may be active in doctoral courses, serving as course directors, course coordinators, and/or content experts. The academic advisor may also serve as a member of the dissertation committee, including the dissertation chair, as long as other eligibility requirements are met.

After a student has begun the program, a change in advisor will be considered on a case-by-case basis in consultation with the Program Director.

**Research Mentors.** Mentoring is a process involving continuous and dynamic feedback between two (or more) persons with the goal of establishing a relationship through which the mentor imparts knowledge, skills, information, and perspective to foster the personal and professional growth of the mentee. Research mentors work with doctoral students on doctorate-related research projects of mutual interest. Mentorship is a key component in several aspects of the program. Research mentors will be invited into the student’s network for myriad reasons, ranging from providing content expertise to offering unique perspective in an area of professional development. Research mentors may be pursued because they have expertise in a particular research methodology or statistical analysis or can provide professional or context-specific
insight. Often, research mentors will be invited as needed to serve as 1) dissertation chairs or committee members, 2) participants in planned learning activities, and/or 3) instructors for independent studies, didactic coursework or research immersion experiences (either short or longer-term). Research mentoring is viewed as a critical component for successful progress towards the doctoral degree. Students are strongly encouraged to assemble a multidisciplinary, multifaceted research mentoring team. Identification of mentors should begin early in the program, even if early mentors only serve a short-term purpose of helping to solidify the student’s ideas. There is no limit to the number of mentors a student may have. The academic advisor, program director, and Director of Doctoral Research will assist in identifying research mentors depending on the student’s professional or research needs. However, building a research mentor network is ultimately the student’s responsibility.

Mentors who do not serve on the dissertation committee do not have to adhere to any strict university or departmental criteria. Mentors can come from outside GW and may be identified by the doctoral student. However, mentors who serve on dissertation committees will have to meet established criteria (see Mentors Serving on Dissertation Committees).

Mentors Serving on Dissertation Committees help to define the student’s research idea/question, provide feedback throughout the development of the research proposal, and approve the research proposal. They also assist in determining the quality of the dissertation.

Composition and Roles of Dissertation Committee.

The Dissertation Chair: Students are expected to have informal conversations with their academic advisor about possible dissertation topics and dissertation committee members throughout the first year of PhD in Translational Health Sciences Doctoral Handbook

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the program. It is important that these discussions include a focus on the translational nature of the problem definition and the research question. Following completion of their first year in the program, students with the assistance of their advisor and the Director of Doctoral Research, will begin the process of designating their dissertation chair. However, we do not recommend that you formalize an agreement to designate a dissertation chair before the end of semester 4. To adopt a more informal parlance - “date” as many potential chairs as you can from semester 1-4, but don’t get “engaged” until after you have completed all your research methods courses.

The academic advisor may serve as chair or another faculty member may assume the role. When the dissertation chair has been identified and has agreed to serve in this capacity, the student should inform the Director of Doctoral Research who will confirm the appointment of the dissertation chair to the student’s committee. The student will then submit the form entitled Proposed Dissertation Committee Member Approval and complete the section relevant to the proposed dissertation chair. The form can be found on the program website, and approval/submission requirements are provided on the form. The program uses Docusign for the purposes of routing approvals on all forms.

Chair of the Dissertation Committee: The role of the dissertation chair is to facilitate:

- Preparation of the dissertation proposal, including specification of the research problem, the literature review that provides the basis for the research, the translational questions or hypotheses for investigation, and the methodology.
- Selection of two additional committee members.
- Guidance on the research proposal structure and content.
- Clear expectations for timely completion, and a high level of quality (technical and ethical) in the dissertation research and document.
- Selection of examiners for the oral defense of the dissertation in consultation with the student, advisor, and potentially the Program Director.
- Preparation of the student for the defense process.
- Dissemination of the completed dissertation by the graduate after successful completion.

The dissertation chair must have the following qualifications:

- Hold an earned doctorate.
- Hold a SMHS regular status (non-visiting) faculty appointment, either full- or part-time (research faculty appointments are acceptable). Selection of dissertation chairs outside the SMHS is not encouraged and requires agreement of both the student’s primary advisor and Program Director. In this case, a member of the candidate’s program faculty should participate as either a member of the research committee or the examining committee at the point of defense.
- Have expertise that aligns with the candidate’s topic area.
- Either (a) have experience serving as a member in one dissertation committee, including the defense of the dissertation, or (b) in the absence of such experience, be mentored by an SMHS faculty experienced as a dissertation chair and selected by the Department Chair.
- Have an active research agenda as characterized by the departmental guidelines.
Emeritus and departing faculty may continue to serve as the dissertation chair, assuming the student has an approved proposal.

**The Dissertation Committee:** As soon as feasible following identification of the dissertation chair, the dissertation committee must be established. The dissertation committee consists of a minimum of three (3) members who hold terminal degrees, one of whom is the dissertation chair. The advisor may be one member of the committee and may or may not be the dissertation chair. The dissertation committee members must meet the criteria listed above. One member of the committee may be from outside GW.

A dissertation committee is established when the chair secures the agreement of two qualified persons to serve on the committee. The student should submit a *Proposed Dissertation Committee Member Approval* form to the Director of Doctoral Research for each new member of the committee and a CV for members who are not GW faculty (up to one non-GW faculty member is allowed). The committee is formally constituted after dissertation proposal defense when the *Designation of Dissertation Committee Form* has been routed as indicated on the form. The form can be found on the program website, and approval/submission requirements are provided on the form. The program uses Docusign for the purposes of routing approvals on all forms.

**List of Forms Relevant to the Pre-Candidacy Phase (in order of completion)**

1. Proposed Dissertation Committee Member Approval (“Proposed Committee Form”)
2. Designation of Dissertation Committee Form
3. Dissertation Proposal Approval Form
4. PhD in Translational Health Sciences Change in Doctoral Dissertation Committee Approval Form
5. PhD in Translational Health Sciences Change in Doctoral Dissertation Chair Approval Form
Figure 1: Overview of Process Leading up to Proposal Defense (Semesters 4-6) (One form should be completed and a CV should be submitted for each proposed committee member, including the committee chair)

- Identify mentors
- Identify Chair
- Narrow down research topic

Advisor meetings

Verbal Agreement with Chair

- Discuss Chair with Dir Research
- Dir of Research will formally invite Chair and confirm appointment
- Select Committee Members
- Complete/Submit Proposed Committee Form & CV
- Discuss research topic

Verbal Agreement with Committee Members

- Discuss Forms with Chair and committee member
- Hone research topic and question
Additional requirements related to the committee include the following:

- Among the chair and the two other committee members, at least one is to be knowledgeable about the:
  - Main methodologies to be used in the dissertation research and designated as taking responsibility for guiding the research methodology.
  - Primary content area of the dissertation proposal and designated as taking responsibility for guiding the literature review and conclusions relative to that content area.
- It is highly recommended that one committee member should come from outside the PhD program; he or she may come from outside of SMHS, and even outside of GW.
- Committee members must not have a relationship with the candidate that poses a potential conflict of interest (e.g. serving as the candidate’s job supervisor, family member, friend, or colleague).

GW sets certain requirements for the dissertation proposal and dissertation defense that will be described elsewhere in this handbook. In addition, the dissertation chair establishes procedures regarding proposal development and dissertation draft review.
It is the student’s responsibility to initiate a discussion with the dissertation committee about their expectations for submitting drafts of the dissertation and negotiate the amount of time the committee members will need to review the document and provide feedback. These discussions must be documented as an Agreement of Expectations and routed as indicated on the form. Keep in mind that conventionally, faculty members require a minimum of 21 to 28 business days to review documents. More time may be needed if they receive a draft just as the Semester begins, as it is ending, during Winter Break, or throughout the summer. It is advisable to notify committee members in advance when drafts will be submitted for review and feedback.

All decisions of the dissertation committee are by majority vote of its members.

**Change in Dissertation Committee:** Once the dissertation committee is approved, the committee must be kept at its full complement throughout the dissertation process. In the event of a vacancy on the committee (occasioned by resignation, faculty leave, or inability to serve), an appropriate replacement must be made prior to any subsequent committee decisions. After consultation with, and verbal agreement by the Program Director and the potential committee member replacement, the student shall make changes to the dissertation committee by routing the *Change in Doctoral Dissertation Committee Approval Form*. If the proposed change is the dissertation chair, additional overview is required so students should use the *Change in Doctoral Dissertation Chair Approval Form* and route/submit as indicated on the form.

The decision to request a change in the dissertation chair should be very carefully considered. It is likely that a change of dissertation chair will result in extra time required to establish a working relationship and good communication. In addition, the new chair can be expected to require revisions to your dissertation in response to the new chair’s training, experience and perspectives. The decision should also take into account the effect on the entire committee, which is led by the chair. Although a change in the dissertation chair is sometimes unavoidable, it is best to try and resolve conflicts with the current chair first.

**Program of Study**

The PhD in THS is a blended, low-residency program, meaning the program of study combines two formats: online and in-person learning activities. These formats are highly integrated and each is essential to the learning environment. According to Picciano, a blended curriculum entails “Integrating online activities with traditional face-to-face class activities in a planned, pedagogically valuable manner while reducing face-to-face class time” (p. 8). In a low-residency curriculum, a purposeful approach is used to blend technology, media, human interactions, and conventional instruction methods, which are a) chosen for their pedagogical value and b) integrated seamlessly so that all components of the curriculum are essential to form a cohesive learning experience. The purpose of low-residency is to “… promote a cycle of reflection, application, interaction, and further reflection that encourages self-regulation of learning.”

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5 McDonald, P (2012). Adult learners and blended learning: A phenomenographic study of variation in adult learners’ experiences of blended learning in higher education. George Washington University, Washington, DC, in partial fulfillment of Doctor of Education degree, Department of Human and Organizational Learning, Graduate School of Education and Human Development.
In the PhD in THS the program of study is structured so that students interact with course materials, instructors, and each other during the majority of the semester. The in-person aspect of this low residency program takes place during two weekends per semester (Fall, Spring, and Summer).

**Residency Weekends.** Residency weekends occur twice each Semester during each of the first six (6) Semesters. Students are **required** to attend each of the residency weekends. **Students will not be excused from required residency weekends and are expected to be present for the entire residency weekend (noon Friday through noon Sunday).** If unable to attend residency weekend either partially or fully, students must inform the Program Director as soon as possible. All absences from each residency weekend (full or partial) will result in a reduction of the participation grade of all required (not elective) courses for which the student is enrolled in the respective semester.

Unless a special event is arranged, all weekend activities will be held in Exploration Hall on the GW Virginia Science and Technology Campus (VSTC) in Ashburn VA. These weekends are scheduled to occur from Friday noon through Sunday noon during *approximately* the 5th and 10th week of each Semester. Actual dates for all six (6) Semesters are posted on the program website for each cohort upon matriculation.

Arranging transportation, lodging, and meals are entirely the student’s responsibility. Lunch on Saturday will be provided. Upon request, the program can provide a list of recommended accommodations and restaurants. As possible, any special arrangements for discounted lodging at some of the area hotel will be posted to the website’s FAQ section regarding Residency Weekends.

### Course Sequence

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Course Number</th>
<th>Title</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Fall</td>
<td>THS 8101</td>
<td>Foundations of Translational Health Science</td>
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<td></td>
<td>THS 8103</td>
<td>Principles of Collaborative and Team Science</td>
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<td>THS 8105</td>
<td>Translational Health Science in Complex Systems</td>
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<td>Spring</td>
<td>THS 8107</td>
<td>Program Theory and Health Innovations</td>
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<td>THS 8109</td>
<td>Implementation Science and Innovation Leadership</td>
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<td>Advanced Study Design for Translational Research</td>
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<td>THS 8123</td>
<td>Qualitative Methods in Translational Health Science</td>
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<td>Advanced Statistical Methods for Clinical and Translational Research</td>
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<td>Fall</td>
<td>THS 8201</td>
<td>Learning Theory and Models for Knowledge Translation in Health Systems I</td>
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<td>THS 8221</td>
<td>Mixed Methods in Translational Health Science</td>
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<td>Elective</td>
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<td>Spring</td>
<td>THS 8203</td>
<td>Bioethical Implications of Health Research</td>
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<td>THS 8205</td>
<td>Learning Theory and Models for Knowledge Translation in Health Systems II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective</td>
<td></td>
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<tr>
<td></td>
<td>Summer</td>
<td>THS 8961</td>
<td>Proposal Defense Preparation</td>
</tr>
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<td>3</td>
<td>Fall</td>
<td>THS 8996</td>
<td>Dissertation Seminar I</td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>THS 8997</td>
<td>Dissertation Seminar II</td>
</tr>
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<td></td>
<td>Summer</td>
<td>THS 8998</td>
<td>Dissertation Seminar III</td>
</tr>
</tbody>
</table>

**Course Descriptions**

**Year 1, Fall Semester**

**THS 8101: Foundations in Translational Health Science**

The course examines the emerging field of Translational Health Sciences, which integrates knowledge across three conceptual domains (translational research, implementation and dissemination science, and collaboration and team science) within the context of current health legislation.

**THS 8103: Principles of Collaboration and Team Science**

Health, technology, social, and environmental problems impacting our world necessitates cross-disciplinary engagement and a high level of collaboration. The course examines foundational and practical principles and explores their impact on collaborative and team science engagements.

**THS 8105: Translational Health Science in Complex Systems**

This course engages learners in an analysis of health systems as complex adaptive systems, elucidating barriers and facilitators to/opportunities for change and innovation within complex health systems. Identification of diverse stakeholders and system interdependencies aims to ensure adoption of translational initiatives.
Year 1, Spring Semester
THS 8107: Program Theory and Health Innovations
A translational approach to practice requires health and educational innovations that are evidence-based, have a theoretical foundation, and are based on strategies to support fidelity. The purpose of this course is to introduce program theory as the basis for designing health and educational innovations that can be tested using scientific methods, replicated in practice, and inform policy.

THS 8109: Implementation Science and Innovation Leadership
This course introduces implementation science as the study of processes affecting systematic uptake of evidence into routine healthcare, and related outcomes of quality, cost, and effectiveness. Students study a range of influences on professional and organizational behavior essential to implementing change initiatives aligned with the needs of diverse stakeholders, with special emphasis on the role of leadership in systemic change.

THS 8121: Advanced Study Design for Translational Research
This course provides an in-depth consideration of current issues and techniques in quantitative research methods and study designs. It is intended to provide a focused understanding of designs used in translational health research, particularly quantitative approaches. The course includes a particular emphasis on measurement (health outcomes, survey and instrument design) and methods to support decision-making in health, healthcare, and health policy.

Year 1, Summer Semester
THS 8123: Qualitative Methods in Translational Health Science
The course examines qualitative methods and designs applicable to translational health science research problems. Students explore qualitative epistemology, methods, data collection, and data analysis.

THS 8125: Advanced Statistical Methods for Clinical and Translational Research
This course covers advanced data management and analytic techniques required for testing hypotheses in translational health research. The course includes a particular emphasis on multivariate analysis and modeling to support decision-making in health, healthcare, and health policy.

Year 2, Fall Semester
THS 8201: Learning Theory and Models for Knowledge Translation in Health Systems I
This course introduces theories and models of learning and knowledge translation to facilitate learning and behavior change. Focus is on evaluating and synthesizing high quality health information for dissemination aligned to key stakeholder needs across the translational continuum.

THS 8221: Mixed Methods in Translational Health Science
This course provides an introduction to mixed methods as a legitimate design tradition, with a unique set of procedures for data collection, analysis, and strategies to assure rigor and accuracy. Learners will design a mixed methods study to address a translational research question.

Elective – Selected with advisor approval.

Year 2, Spring Semester
THS 8203: Bioethical Implications of Health Research
The purpose of this course is to emphasize the critical roles of ethics theories and bioethics principles in the planning, conduct, and dissemination of scientific studies. Topics covered will include scientific and academic integrity, protection of human participants in research, conflicts of interest and commitment, ownership of data and intellectual property, whistleblowing and dispute resolution, and privacy and confidentiality.

**THS 8205: Learning Theory and Models for Knowledge Translation in Health Systems II**

This course applies theories and models of learning and knowledge translation to the design and evaluation of interventions for learning and behavior change. Focus is the development of a knowledge translation toolkit.

Elective—Selected with advisor approval.

**Comprehensive Exam between Semesters Five and Six**

**Year 2, Summer Semester**

**THS 8961: Proposal Defense Preparation**

This course guides PhD students through the process of preparing and defending a dissertation research proposal by providing a framework for individual student work with their committee members. At the same time, students draw on each other as a community of scholars for support in developing and effectively communicating their research ideas, using the mentoring process, and giving/receiving feedback. This course is designed to explore and exploit the resources necessary so that a doctoral student may create a grounded and workable plan that will lead to a successful defense of the proposal.

**Year 3, Fall Semester**

Proposal Defense

**THS 8996: Dissertation Seminar I**

**Year 3, Spring Semester**

**THS 8997: Dissertation Seminar II**

**Year 3, Summer Semester**

**THS 8998: Dissertation Seminar III**

**As Needed**

**Year 4, Fall Semester**

**UNIV 0982: Continuous Enrollment**

**Year 4, Spring Semester**

**UNIV 0982: Continuous Enrollment**

**Year 4, Summer Semester**

**UNIV 0982: Continuous Enrollment**
Year 5 and beyond  
THS 8992: Directed Study

Comprehensive Examinations

The comprehensive examination is designed to assess the doctoral student’s ability to integrate material from the first five (5) Semesters of coursework. Therefore, in order to be eligible to take the comprehensive examination, the student must have successfully completed all attempted coursework from Semester 1 through Semester 5.

Under the directive of the Director of Doctoral Candidacy, the Comprehensive Examination Committee, composed of core teaching faculty in the doctoral program, is tasked each year to:

- Create a list of general comprehensive examination areas of focus;
- Distribute this topical list to students prior to the examination to be used as a study guide;
- Create the examination questions;
- Coordinate instructions and grading procedures for taking the examination;
- Grade examination responses; and
- Communicate individual student performance outcomes to advisors.

The comprehensive examination is administered after Semester 5 of the doctoral program of study. It is composed of four (4) randomly selected questions from a larger pool of possible questions that will require integration of key concepts taught in Semester 1 through Semester 5. One of the four (4) questions will be a research methodology question.

The questions are released one at a time through Blackboard and must be submitted within 24 hours. Access to each corresponding question is contingent upon submission of the previous question. The comprehensive examination is accessible during a defined 10-day period of time, which is communicated to students well in advance of the examination. Although there is a 10-day window of availability, the student has a maximum of one (1) week to complete the four (4) question exam once the examination has been accessed through Blackboard. In other words, the student may take the examination at any time once the 10-day window has opened; however, once the examination is started, the examination will close in exactly one week and the student can no longer access the examination. Responses to each question (limited to 1400-1500 words; not including references) should follow criteria for written communications outlined in The Publication Manual of the American Psychological Association, 6th Edition (APA6).

The comprehensive examinations will be graded on a Pass/No Pass basis. Grades will not be released to students until after Week 5 of Semester 6.

A student will earn an overall “Pass” for the comprehensive exam if at least 3 of the 4 exam questions are answered satisfactorily. All students are required to pass the research methodology question. A student that does not successfully pass the comprehensive examination (3 out of 4 questions) will automatically receive a “No Pass” grade. If a student fails to pass the examination, the student is allowed one opportunity to retake the examination (see rubric below for clarification).
The retake examination will follow a similar format as the initial comprehensive exam. The student will be required to pass one (if only the research methodology question is missed) or more questions depending on the number of questions missed on the initial examination. In order to pass the retake examination, the student must cumulatively pass at least 3 of the 4 comprehensive examination questions (inclusive of successfully passed questions during the first attempt). Retake questions will be based on the original topic list, but students will be assigned different questions from those randomly assigned during the initial examination.

The retake examination will be administered during a specified 10-day window during Semester 6. The questions will be released one at a time in a similar fashion to the first examination window. The student is allotted 24 hours to complete each question and has a maximum of one week to submit the responses once the exam is opened. The comprehensive examination, including the retake, must be completed by the end of Semester 6. The legend below explains the different outcome scenarios of the comprehensive examination cycle and their consequences.

<table>
<thead>
<tr>
<th>Correct Responses</th>
<th>Outcome</th>
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<tbody>
<tr>
<td>4 out of 4 questions</td>
<td>Pass</td>
</tr>
<tr>
<td>3 out of 4 questions</td>
<td>Pass; if research methodology question answered correctly</td>
</tr>
<tr>
<td>3 out of 4 questions</td>
<td>No Pass; if research methodology question answered incorrectly</td>
</tr>
<tr>
<td>0-2 out of 4 questions</td>
<td>No Pass - Retake (must pass 2-4 retake questions)</td>
</tr>
<tr>
<td></td>
<td>Missed 2 questions; retake 2 questions; must pass at least 1 question (including methodology question)</td>
</tr>
<tr>
<td></td>
<td>Missed 3 questions; retake 3 questions; must pass at least 2 questions (including methodology question)</td>
</tr>
<tr>
<td></td>
<td>Missed 4 questions; retake 4 questions; must pass at least 3 questions (including methodology question)</td>
</tr>
</tbody>
</table>

Failure of the Comprehensive Examination

If a student earns a “No Pass” in one or more parts of the comprehensive examination, a retake examination is permitted (see criteria for passage for the comprehensive examination above). If the student does not submit the comprehensive examination by the established due date, the student will automatically receive a grade of “No Pass.” Following a “No Pass,” the student should request a debriefing from the Director of Doctoral Candidacy to identify deficiencies in the student’s responses.

- If a student earns a “No Pass” on the comprehensive examination, they must retake the examination. The student should continue all coursework while preparing for the comprehensive retake examination.
- If a student earns a “No Pass” on the retake comprehensive examination, he/she cannot progress further in the program. The student will be recommended for dismissal from the doctoral program. The student will meet with his/her advisor to discuss available options.
The flowchart below should help students and advisors navigate the scenarios and consequences of the examination outcomes.

Comprehensive Examination

- Pass ≥ 3 questions including methodology question
- Pass 3 questions but fail to pass methodology question
- Pass ≤ 2 questions

Retake Methodology AND/OR Other Unsuccessful Questions

- Pass retake
- Fail to pass retake

Advance to proposal defense

Unable to progress in program; meet with advisor to discuss options
Dissertation Research Proposal

Narrowing Down a Dissertation Topic and Research Questions.

**Year 1.** Students are strongly advised to focus on exploring research problems (rather than research topics or questions) of most interest from the beginning of the doctoral program (Semester 1). Students should work with their advisor, instructors, and colleagues to examine health issues and problems that might lead to dissertation topics and to explore some more deeply through course assignments. Throughout the first-year students will be introduced to concepts, situations, and outlets that will strengthen and narrow their topics of interest.

**Year 2.** By the end of the first year (Semester 3), students should settle on a specific research topic, continue to gain considerable knowledge of the topic either independently or as part of an ongoing dialogue with advisors and/or mentors, and identify important gaps that might be filled by dissertation research. Each gap will suggest one or more potential research questions which will be refined within year 2 (Semesters 4-5).

**Suitability of a Research Questions.** Only a small portion of research questions will prove suitable for dissertation research. Through consultation with your advisor, mentors, or even a potential dissertation chair, the feasibility and suitability of the questions will be explored and finalized in Semester 6 when you prepare your dissertation proposal. Research questions may be found unsuitable for a number of reasons. Some research questions will be of little potential importance to either theory or practice and others will be uninteresting or irrelevant to the student’s projected career. Some will require more time or funding or access than is available—such as those that cannot be answered without a five-year longitudinal study and those that require intensive observations in a national sample. Some will require mastering methodologies for which the student may have little preparation, talent, or interest. Some research questions are not sufficiently translational, meaning they do not meaningfully add to the body of knowledge in Translational Health Sciences (please refer to the section of this handbook entitled “Why Translational Health Sciences?”). Students who delay topic exploration and question-sifting until after completing their coursework will find it challenging to prepare their proposal for defense in Semester 6.

**Overcoming barriers and acquiring assistance.** It is important to be practical but to also seek ways around apparent barriers that might prevent a student from successfully completing the dissertation or unnecessarily prolong the process. Assistance with tasks related to completion of the dissertation like transcription services, technical assistance, and even statistical assistance or coaching, may be required to adequately execute the dissertation project in a timely manner. These are all typical and permissible resources to utilize as part of the dissertation process. Research assistance through hired and volunteer research assistants in the dissertation process for the purpose of design, data collection, and analysis should be kept to a minimum. This stated, the development of a research design, data collection, and analyses of data are the responsibility of the student author and are the measure of the candidate’s ability to perform research as a doctorally-prepared research professional and cannot be outsourced to research assistants. Dissertation chairs, as the Principal Investigators of record for the student dissertation project, will be held accountable to ensure that work contributing to the dissertation is reflective of the candidate’s material involvement.
Secondary Data. Secondary data may be available through any number of sources and students may request to explore the appropriateness of using this data as part of their design and analysis in the dissertation. Examples include:

- Students convince an interested organization to provide access to data collection that the student could not have otherwise gained.
- Students conduct secondary analysis on large data sets previously collected by the government or research organizations.
- Students combine or partly overlap research they are doing for their jobs with that of their dissertation—with the approval of both their dissertation advisor and their work supervisor.
- Students win external grants, and thus may possibly collect data for another grant-related purpose, but also to support their dissertation work, allowing them travel, gain access to paid assistants, or gain support that they otherwise could not have afforded. (Note: Grant proposal reviews often take at least four to eight months.)

Any of these circumstances should be explored with advisors/dissertation chairs as these resources could conflict with the assessment of the ability of the doctoral candidate to design a study, collect, and analyze data. These skills and tasks are the sole responsibility of the doctoral candidate regardless of other resources available to the student. In addition, the use of secondary data should constitute “part of” and not the “total” data source associate with the dissertation project.

Team Involvement on Dissertations. Occasionally dissertation questions and sources of data are embedded in a larger team project. This can occur with dissertations that rely on either primary or secondary data. Students must keep in mind that dissertations are individual projects that must reflect the original work of the student. Therefore, it is important to keep the team involvement minimal. Precautions are important when teams are involved, including research assistants and students should discuss specifics of team involvement with the dissertation chair. Data analysis by the team is not permitted and students must engage in some data collection, even if the dissertation involves use of secondary data. If an individual or team is involved in the dissertation, the student must describe the role and activities of each member and recognize their contributions in the Acknowledgements section of the dissertation.

Students should be aware that no part of the recruitment of study participants, data collection or analysis of previously collected data can occur until approval for the study has been obtained by the Office of Human Research in the form of a study protocol.
The Dissertation Proposal

Overview.

The guidelines in Appendix A and B introduce the organization and elements of THS dissertations. The first three chapters (which constitute the material for dissertation proposal and defense) provide a framework for presenting the logic of the study from the statement of the translational problem through the selection of procedures for conducting the study. While the descriptions of some of the sections are common for all forms of research, others contain different descriptions for different forms of research, such as qualitative, quantitative, and mixed methods research.

Year 2: After successful completion of comprehensive examinations and as the first phase of dissertation work, the dissertation proposal indicates what the student will study, why, and how. The proposal is developed in semester 6 of the program and a defense of the proposal usually occurs in semester 7. The proposal serves at least three purposes:

- It allows the dissertation committee to examine the plans for the study and suggest improvements that will enhance the merit of the dissertation. With the revisions suggested by the committee, it becomes a blueprint for the research work. It also can serve as a draft of the first three chapters of the dissertation.
- The dissertation proposal should include those elements normally found in Chapters 1 through 3 and the references of the dissertation (see Appendix A & B Dissertation Guidelines).
- The dissertation proposal should be clear and complete, so that there is no question about the rationale for the research or how the student intends to complete it. The proposal should be prepared according to a recognized scholarly format, specifically the Publication Manual of the American Psychological Association (Sixth Edition or later). The dissertation committee will usually provide additional guidelines for the proposal leading up to and as a result of the proposal defense.

It should be noted that approval of a proposal does not ensure approval of Chapters 1 through 3. Revisions are to be expected as needed when preparing the dissertation.

Dissertation Proposal Defense Preparation (THS 8961). All students must take THS 8961 Proposal Defense Preparation in Semester 6. The seminar provides guidance on the various steps of dissertation proposal preparation, dissertation research, and dissertation writing. The dissertation proposal is defended in semester 7 as part of THS 8996 requirements. It is the responsibility of the student, with assistance from the chair to arrange for a suitable time for the chair, committee, Director of Doctoral Candidacy, and the student to meet for the defense. If all parties cannot attend a face-to-face meeting (preferred) student can arrange for telecommunication assistance.

The work of preparing a proposal commonly involves substantial time. It is recommended that the draft of the proposal should be saved daily to at least two media, such as the hard drive of a computer and to a removable drive. It is advisable to rename the file sequentially (such as Proposal1, Proposal2, Proposal3).

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after major additions. That way, if a file becomes “corrupted,” the next-most-recent version is available rather than starting over. Students should exercise the same precautions when writing the dissertation. Every year a few doctoral students lose months of work because they fail to make backups of key files.

If a student has not successfully defended their proposal by the end of Semester 6, a student will need to petition for CE (see section below). Students may not register for any dissertation credits until they move into candidacy.

Proposal Approval. Before actually beginning to conduct dissertation research, the proposed research must be reviewed and approved through the following methods. In rare instances, as explained below, an outside office of human research or institutional review board will provide and review the institutional review board application. The circumstances for such a requirement would be in addition to the GWU Office of Human Research Approval.

<table>
<thead>
<tr>
<th>Reviewer/Approver</th>
<th>Forms and Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Dissertation Committee</td>
<td>● Research Proposal</td>
</tr>
</tbody>
</table>
| 2. Dissertation Chair and Department Chair | ● Research Proposal  
                                         | ● Institutional Review Board Application |
| 3. The SMHS Office of Human Research    | ● Institutional Review Board Application |
| 4. The CRL Department Chair             | ● Research Proposal                    |

Students are NOT to begin recruitment or actual data collection for dissertation research until all of the necessary approvals have been obtained even if the student is already leading a research study as investigator or principal investigator. Non-compliance may result in a prohibition against the use of the data in the dissertation and misconduct charges.

Dissertation Committee Approval of Proposal: The dissertation committee approves the research proposal after a successful dissertation proposal defense, which is sometimes referred to as an “oral defense of the proposal.” The dissertation committee has a responsibility to review the proposal and ensure that it will produce worthwhile and high-quality research. During the defense, students may be asked about their rationale for certain aspects of the proposal, asked for more details about the literature or the proposed methods, or challenged about the appropriateness of proposed procedures. The student’s competency with the main research methods is to be ascertained through the questioning. The defense is also a consultation in which the committee members suggest, and sometimes require, changes to improve the research. The proposal defense is an informal proceeding at the discretion of the dissertation chair. Students should ask their dissertation chair for a briefing on the format. Formal approval is indicated by the entire dissertation committee on the Dissertation Proposal Approval form. The presence of the Director of Doctoral
Candidacy is as an observer and is present to answer any procedural questions the committee or candidates might have.

Process for Proposal Approval and Approved Dissertation Research

1. Complete CITI Training.
2. Dissertation Committee Approval of Proposal
   Submit research proposal to the dissertation committee. Participate in oral defense.
3. Determine level of IRB review in consultation with Dissertation Chair and OHR IRB.
   Submit IRB Application to the dissertation chair & department chair.*
4. Office of Human Research Approval of Proposal*
   Submit IRB Application or IRB of Record Form + IAA
5. Senior Associate Dean for Health Sciences Approval of Research Proposal
7. Submit IRB Modification Form if necessary after consultation with dissertation committee.
8. Submit Study Closure Form to IRB when research has ended.

*In limited and rare circumstances and outside IRB will provide and review the IRB proposal. See the situations described below.

Office of Human Research Approval of Proposal: All students must obtain additional approval of their proposed research and methods by submitting a separate proposal and application to the GW Office of Human Research (OHR) Institutional Review Board (IRB). The Office of Human Research (OHR) assesses if: (a) the proposed research will expose human subjects to risks, (b) practical precautions have
been taken to minimize those risks and inform the subjects of the risks, and (c) the remaining risks are justified by the potential benefits of the research.

Prior to initiating the study, all students must submit the required IRB application, which may include multiple forms and supplementary materials, to the IRB. The IRB will provide one of three types of review of your new application for research depending on the level of risk to human subjects:

- Full Board Review
- Expedited Review
- Exempt Registration

Students cannot conclude for themselves if the proposal involves human subjects research. Rather, students should consult the Human Subject Research Determination Worksheet (HRP-207), the dissertation chair and, the OHR IRB to make an initial determination. Since OHR prohibits students from serving as principal investigator (PI), the dissertation chair will serve as the PI on the proposal.

As part of the coursework in THS 8203: Bioethical Implications of Health Research, students will discuss and assess the ethical, legal and social implications of their research methods, the potential risks of harm to human participants, and strategies for protecting individuals who participate in their dissertation research. The development of these strategies will prepare students for completing IRB forms and developing informed consent forms, as applicable, prior to initiating the study.

Students may submit a study for IRB review after proposal approval is granted by the dissertation committee and CITI training is completed by all team members. When submitting to the IRB, the student must indicate that the submission is a student proposal and must obtain the signature of the dissertation chair and the Department Chair prior to submission.

Since the review process could take as little as 10 days or as long as 6 weeks, the application and study materials should be submitted to this office for review at a minimum of 6 weeks prior to the student’s anticipated research start date; otherwise, OHR may be unable to accommodate the timeline for review. Considering this timeline, students should allocate sufficient time to draft and receive feedback on the IRB application as well as any data collection tools that will be submitted. Students may also be required to submit additional forms, including but not limited to, the following:

- Student Investigator's Responsibilities form (HRP-290)
- Consent document or Waiver or Alteration of Consent Supplemental form (HRP-294)
- HIPAA Waiver (Partial HRP-281 or Full HRP-280)
- Research Team Personnel form (HRP-201) for studies with multiple team members beyond the PI and Primary Contact
- Data Collection Tools (such as surveys or interview guides)
- Recruitment materials
- Site Permission letters
OHR may communicate directly with the student to ask for further clarification or additional protection for human subjects. If the protection of human subjects is judged inadequate, the student should consult with their dissertation chair about how to proceed.

It is important to note at this point, that unless the student successfully defends their dissertation within one year of the proposal approval, it is their responsibility to submit a Continuing Review form to the Office of Human Research every 12 months, with a signature from the PI (dissertation chair).

In some cases, the student may have an opportunity to conduct human subjects research at an outside institution, such as an employer’s clinic or collaborator’s hospital. In such cases, the approval and monitoring of the study will vary according to the situations described below. Regardless of which situation applies, the student’s proposal must be approved by the GW dissertation committee. Further, the student should consult with the GW dissertation chair before, during, and after the IRB approval process about the appropriate IRB (i.e., the GW OHR IRB or the outside IRB), the role of the dissertation chair, and a PI determination.

Anytime researchers from multiple institutions are involved in the same research, the student must engage with the GW dissertation chair in an assessment to determine appropriate IRB review of the student’s proposal. The proposal must align with the reviewing IRB’s review policy for student research. Since duplicate submissions are considered by the federal rules governing human subjects research to be burdensome, students must select an appropriate streamlined IRB review process.

Examples of potential situations, including typical situations and those that involve an outside IRB are provided below.

**Situation 1**: GW student not affiliated with an outside institution that seeks to initiate dissertation research at GW. Follow the procedures outlined above. This is a typical situation.

**Situation 2**: GW student not affiliated with an outside institution that seeks to use data collected as part of a project separate from dissertation research. The student may use the same dataset. However, the student must initiate a new study (by, for instance, asking a different research question) for these data to be used as part of dissertation research. The student should consult with GW’s IRB to determine whether a new IRB application or simply a modification is required.

**Situation 3**: GW student affiliated with an outside institution that is leading a research project or team as the PI. The student may use the same dataset. However, the student must initiate a new study (by, for instance, asking a different research question) for these data to be used as part of dissertation research. This student should consult the original IRB that approved the research project and any rules related to the governance of student-led human subjects research at the outside institution. The student will need to consult the GW dissertation chair for approval and further guidance.

**Situation 4**: GW student initiates research at another institution for the sole purpose of completing dissertation research. The outside institution has determined the project "exempt". Student should request concurrence from the GW IRB. No GW application is necessary for a concurrence submission but the
student should submit the documents and approval letter from the outside institution so the GW IRB can make an appropriate determination. The GW IRB may agree with the other institution and concur with determination or not agree and require the student to complete an application for review.

**Situation 5:** GW student initiates research at another institution for the sole purpose of completing dissertation research. The outside institution has determined the project "expedited". The student should request GW’s agreement to rely on the “IRB of Record” at the outside institution. In such cases, the student should submit an IRB of Record Request Form, IRB Authorization Agreement (IAA), and supporting documents submitted to the other institution to GW’s IRB. Note that IAAs will only be successful if the study is considered to be of minimal risk. Once received, OHR will work with the proper authorities at the institution to execute the Agreement. Anyone covered by the IAA may not begin any work on the project until IRB approval has been granted AND all parties have signed the agreement. Students should consult OHR to access the most up to date forms and research timelines.

Regardless of whether or not an IAA is used and approved, all students must complete a full IRB Application to be submitted to and reviewed by the Dissertation Committee and Chair, even if the IRB application was provide by an outside institution.

It should be emphasized that if the student must submit an application to GW for review, they need a GW PI. If the student is listed as PI at another institution, the outside IRB will determine whether the student can be a PI. In all cases, the student must consult with the GW dissertation chair about a process for ongoing discussion about the research and compliance. Ongoing discussion about compliance is required and any adverse events must be reported to the PI, GW dissertation chair, and IRB. Reportable events are not limited to physical injuries. Such events include but are not limited to the following (See the GW OHR website for additional examples):

- A protocol violation (e.g., failure to obtain informed consent, omitting required study procedures, failure to report an adverse event).
- A protocol deviation (e.g., failure to report the withdrawal of a participant in an adequate time frame; use of expired recruitment materials).
- Unanticipated problems (e.g., injury sustained by research staff during the study, breach of privacy/confidentiality, unsolved subject complaints, disappearance of study drug, higher than expected volume of protocol deviations).

**Department Chair Approval of Dissertation Proposal:** This approval is usually pro-forma after review of the approvals of the dissertation committee and the Office of Human Research, but if this office detects serious problems not identified by others, it may delay approval until those problems are corrected. If the Department Chair is acting as Dissertation Committee Chair, the Senior Associate Dean will conduct a final review.

**Students are NOT authorized to collect dissertation data until ALL approvals have been received, including formal approval of the proposal from the Department Chair for Clinical Research and Leadership for Health Sciences.**
Overview of Admission to Candidacy
Being granted candidacy is an important step in progress towards achieving a PhD in THS. Candidacy indicates that students have completed most program requirements, achieved a level of expertise in a particular area, and have described a collaborative plan for research and scholarship that has been approved by the Dissertation committee.

Requirements for Candidacy. To quality for candidacy, a student must satisfy the following requirements:

- Successfully complete all the required pre-candidacy coursework
- Be in good academic standing in the program
- Pass the written comprehensive examination (end of Semester 5)
- Pass the proposal defense (both written and oral components)
- Dissertation proposal approvals obtained from:
  - Dissertation committee
  - Office of Human Research
  - CRL Department Chair

Students may not collect dissertation data until candidacy status has been approved.

If Candidacy is Not Approved
In the event that candidacy is not approved, the student should work with his/her advisor to determine if a remediation plan is appropriate.

Masters of Science in Health Sciences Eligibility
Students who do not proceed past the pre-candidacy stage should discuss their eligibility for the MSHS in Clinical and Translational Research with the Program Director.
Candidacy

The Successful Dissertation Experience

- Encourages the student to integrate all of their doctoral study reading, thinking, and experiences in an original research and writing process that solves a translational problem not yet considered with a new perspective and approach.
- Builds the student’s intellectual and emotional stamina and prepares them for future intellectual work and contributions as a translational health care professional.
- Provides an opportunity to demonstrate capacity as an interdisciplinary and collaborative researcher.
- Provides a foundation for future research, publishing, presentations, and creative activities that will draw from the dissertation.
- Establishes an important credential for university teaching and research appointments, consulting services, and/or practical leadership.
There are three major phases of dissertation work:

1) Developing the dissertation proposal (completed as a requirement of moving into doctoral candidacy),
2) Conducting the research and writing the dissertation, and
3) Defending the dissertation.

This portion of the handbook sets forth the general procedures for developing a successful dissertation.

To move successfully through the dissertation process, the student must take responsibility to meet deadlines agreed upon with their dissertation committee, and deadlines set by the school for defense of the dissertation and graduation. The dissertation chair and the program will make efforts to assist in the process, but ultimately, responsibility rests with the student.

**Getting Ready for the Dissertation Research Challenge**

**Eight-Year Limit:** The doctoral dissertation must be written and defended within eight (8) years from the time of admission to the doctoral program. The first 9 semesters constitute the initial three years meaning that 5 additional years are permissible. Exceptions to the eight-year limit are rarely given and only with compelling evidence that the student has made all practical efforts to complete within eight years. Extensions require approval by the Department Chair and the Senior Associate Dean of Health Sciences. In the event the Department Chair or the Senior Associate Dean of Health Sciences is a member of the student’s dissertation committee, the decision will be made by the Dean of the School of Medicine and Health Sciences.

**Dissertation Research**

Dissertation research involves data collection, analysis, interpretation, and writing of the dissertation. **All students are required to be materially involved with all aspects the dissertation research.** Data collection can begin only after approval of the proposal by the dissertation committee, the GW Office of Human Research, and the CRL Department Chair.

The student’s research should be guided by their approved dissertation proposal; but the student will have to put their scholarly skills to work throughout the process to assure a high-quality final product. Some details will have to be decided as the student proceeds. Some matters may send the student back to the literature for guidance. Once the student has tried to determine how best to proceed, they should check with their dissertation chair or other committee members.

Candidates are to enroll in the dissertation seminar sequence (THS 8996, THS 8997, THS 8998) while involved in dissertation research. This typically would occur in Year 3 (Semester 7-9). If the student has not successfully defended the dissertation by the end of Year 3 (Semester 9), then the student will need to petition for Continuous Enrollment (CE) status as needed through Year 4 (Semester 10-12). See section below on Continuous Enrollment.

If a student has not successfully defended the dissertation by the end of the Summer Semester of Year 4 (Semester 12), the student will be required to enroll in a THS 8992: Directed Research starting Semester
13. This one (1) credit course is required each Semester until the dissertation is approved or program time limits are reached, whichever comes first. Students will be charged the prevailing per credit rate and associated fees each Semester of enrollment in THS 8992.

**Guidelines for the Dissertation.** Dissertation guidelines are provided in the Appendices A & B. They are designed to assist the student with the development of their dissertation. It is suggested that the student search the literature and/or ask their advisor to suggest one or two strong dissertations in their field with methodological approaches similar to the proposed study for the student to examine. In addition, the student and their advisor should discuss if a member of the dissertation committee should be an expert in their methodological approach so as to ensure proper oversight of the research being conducted. The student’s dissertation chair and other members of the committee may provide further guidance on the structure and the content of the dissertation.

The dissertation is to be written in good, formal English. Different students will have different editing needs and the advisor or dissertation chair can assist in determining how to meet those needs. The student’s dissertation committee should not be expected to provide help with editorial formatting and grammatical errors. This is the responsibility of the student writing the dissertation.

Students should also consult the Thesis and Dissertation Guidelines, especially when formatting the preliminary pages of the dissertation as these sections are expected to be uniform for all dissertations.

**Enrollment in in Dissertation Seminar I, II, and III (THS 8996, THS 8997, THS 8998).** The student registers for the dissertation seminar series as the continuation of their pre-candidacy requirements. For most students, this means registering for one seminar per Semester during Year 3. We advise the following registration:

**Year 3, Fall Semester**  
THS 8996: Dissertation Seminar I

**Year 3, Spring Semester**  
THS 8997: Dissertation Seminar II

**Year 3, Summer Semester**  
THS 8898: Dissertation Seminar III

Once a student has completed the three dissertation seminars, if additional time is needed for dissertation research and writing, then Continuous Enrollment may be used throughout Year 4:

**Year 4, Fall Semester**  
UNIV 0982: Continuous Enrollment

**Year 4, Spring Semester**  
UNIV 0982: Continuous Enrollment

**Year 4, Summer Semester**  
UNIV 0982: Continuous Enrollment
UNIV 0982: Continuous Enrollment

Directed Study (THS 8992). If a student has not successfully defended the dissertation by the end of the Summer Semester of Year 4 (Semester 12), the student will be required to enroll in THS 8992: Directed Research starting Semester 13. This one (1) credit course is required each Semester until the dissertation is successfully defended or program time limits are reached, whichever comes first. Students will be charged the prevailing per credit rate and associated fees each Semester of enrollment in THS 8992.

Arranging the Committee and Examiners. Per University requirements, the dissertation defense examination committee is composed of:
- The members of the dissertation committee
- Two additional examiners (aka “Readers”)

The additional examiners are selected on the basis of their interest and expertise in the area of the candidate’s research and their ability to contribute to a fair and high-quality examination process.

Examiner Requirements - Two additional examiners (“Readers”):
- The Readers may be chosen based on their expertise or their valued input to the problem of the dissertation.
- The Reader need not be a university professor if a more suitable professional is beneficial as part of the committee.
- Both Readers must have held an earned doctorate for at least one year prior to the defense adjacent or equivalent to a PhD.
- Both Readers must have professional background and experience that is relevant to the candidate’s topic and research.
- Both Readers must be free of relationships with the candidate that poses a potential conflict of interest (such as being the candidate’s job supervisor, friend, or colleague).
- If not a current or former GW regular status or research faculty member, a copy of the person’s curriculum vita or resume must be submitted to the Program Director.

The role of the dissertation chair in relation to the dissertation defense, in consultation with the candidate, is:
- To contact and secure all committee members and additional readers.
- To monitor and ensure that all committee members and readers are in agreement about the date, time, and location of the defense.

*Please note that the Program Director or designee has final approval of the membership of all dissertation oral examination committees.

It is expected that the candidate and members of the examining committee will be present for the oral examination at one of GW’s official campuses or centers. When members of the examining committee are unable to be at the site of the examination, the student should make arrangements for members to
participate via conference call or videoconference. The candidate and the dissertation chair must be present at the site of the examination.

**Dissertation Defense Planning and Procedures.** Generally, the student will need to have a draft that their committee considers ready to defend. However, readiness for dissertation defense rests with the Dissertation Chair in consultation with the candidate.

Be sure to check with the program administrator for each Semester’s deadlines for submitting materials and scheduling defenses. Defenses generally must be scheduled four weeks before the end of the Semester with the appropriate materials provided to the examination committee at least 30 calendar days prior to the scheduled defense. Dissertation defenses are not held in the last three weeks of December, from mid-March until the end of May, or in August. If the student wishes to participate in May commencement ceremonies and they will graduate in the Spring Semester, they must have successfully defended the dissertation and have submitted all necessary forms required for graduation by the deadline listed on the website (see Curriculum).

The following actions are required prior to the defense:

1. Each dissertation committee member is to review the dissertation to ascertain that it is ready for defense. Members are to indicate their approval by signing a *Dissertation Approval* form.

2. The dissertation chair, usually in collaboration with the candidate, is to arrange a date and time for the dissertation oral examination. These steps are indicated on the *Request for Dissertation Oral Examination* form. The chair is to submit both the *Dissertation Approval Form* and the *Request for Dissertation Oral Examination* form as indicated on the forms. These forms can be found on the program website, and approval/submission requirements are provided on the form. The program uses Docusign for the purposes of routing approvals on all forms.

3. The candidate is to submit to the Program Director the following:
   a. One electronic copy of the completed and polished dissertation
   b. One electronic copy of the 350 (or less) word abstract

The submissions of the defense documents must be made no less than 30 calendar days prior to the scheduled date of the oral examination. Once this submission is made, no changes can be made to the dissertation before the oral examination.

4. As part of the preparation for the dissertation defense, the department will review the student’s academic history and report any discrepancies to the student.

The Director for Doctoral Research will review the membership of the proposed dissertation oral examination committee for compliance with SMHS regulations. The program administrator will send emails to the external examiners formally notifying them of their status and the examination. The program administrator will also arrange the room for the examination.
5. The candidate is to provide the five (5) dissertation oral examination committee members with an electronic copy of the dissertation at least three weeks prior to the scheduled examination.

The dissertation defense (oral examination) is a formal proceeding conducted according to set rules. One of the committee members, other than the chair, will also serve as the presider. The presider is selected by the dissertation chair. Once he/she has agreed to serve in that capacity, the name of the presider should be communicated in writing to the program, dissertation committee, and doctoral candidate no less than seven (7) days before the scheduled defense. The presider is to direct the defense according to the Instructions for the Presider. The dissertation committee member serving as presider shall also be an active examiner, participating in the questioning of the candidate and the votes. An independent presider may be appointed at the request of the dissertation chair, other dissertation committee members, or the student; such requests may be made in confidence to Program Director, at least three business days before the defense. In these cases, the Program Director will appoint an independent presider for the defense.

Defenses are open to the public but seating for observers is usually limited to four to six people, depending upon the size of available rooms. Family members may attend, but candidates should realize that the shortcomings and limitations of their work will be discussed.

After the student has defended their dissertation, they (along with any guests or spectators) are asked to leave the room while the committee considers the acceptability of the dissertation defense and the dissertation document.

The dissertation work is not finished with a successful defense. The oral examination committee usually requests refinements to the document. These refinements must be approved by the dissertation committee and the dissertation chair prior to final deposit of the dissertation with the University.

A student whose dissertation document is accepted conditionally, but is unable to make the revisions to the document required by the dissertation committee in time to meet the deadlines for degree clearance, may enroll in Continuous Enrollment (CE) in the subsequent Semester.

**An Unsuccessful Final Oral Examination.** Students are allowed a maximum of two dissertation oral defenses, in order to successfully defend their dissertation. On the second attempt, a student must pass both the oral defense and have the dissertation voted acceptable by the committee. If the student fails both oral defenses, the student is dismissed from the doctoral program.

**Graduation**
Final Tasks Related to the Dissertation.

- Retrieve all copies of their dissertation from their committee, the examiners, and the presider.

- The student should make any edits and revisions required by the committee. Confer with the dissertation chair to make sure they have a clear understanding of what is expected.

- After all the revisions have been made to the document, submit one final copy to dissertation chair. After the dissertation chair determines that all revisions required by the committee have been made and he/she approves the final copy, the student is ready to submit the dissertation electronically for archival.

- GW requires all dissertations to be submitted electronically. The GW ETD website (http://library.gwu.edu/etds/) will guide the student through the process of uploading their document into a PDF file and electronically submitting it to ProQuest, who will archive their dissertation and provide open access publishing, and to GW Libraries.
  - Note: It is very important for the student to carefully review their document before submitting it electronically. The student must not forget to use the University Bulletin or GW Directory to find the correct titles of their GW faculty committee members. Once the dissertation has been electronically submitted to ProQuest, the student may make no further revisions.
● ProQuest will assess the following fees: $95 for open-access publishing and $55 for copyright. All costs of submitting work to ProQuest are the responsibility of the student. GW discourages students from copyrighting their dissertation unless the research has some commercial value.

● Students must complete any remaining degree requirements, submit their dissertation to the GW ProQuest ETD website, and have the document reviewed and approved for submission to ProQuest by the GW Library Editor and the Health Sciences Office of the Dean by the deadline indicated on the program website (see Curriculum).
  ○ Note: Normally students have 30 calendar days to submit their dissertations and supporting documents after the defense. Please plan accordingly in order to meet the required deadlines. There are no exceptions to these deadlines.

● Obtain final sign offs: The student shows the final version with the last changes to their dissertation chair, obtain his or her approval of the final version, and ensure that school or college procedures are followed. Both the student and their chair should also sign the ETD Approval Form and submit this as indicated on the form.

● The University requires students to submit the Survey of Earned Doctorates (http://survey.norc.uchicago.edu/doctorate) before clearing them for graduation. Once the student has completed the questionnaire online, please forward the email confirming the survey has been completed to the Office of Student Services.

● The student must go to http://humanresearch.gwu.edu/, fill out the Study Closure Form to terminate their research and submit to the Principal Investigator (PI) for signature. It is the student’s responsibility to submit the form to the IRB Office.

● Degree Conferral Dates:
  ○ Spring = Date of Commencement Ceremony
  ○ Summer = August 31
  ○ Fall = January 31

**Application for Graduation.** All PhD candidates are to complete the online graduation application in GWeb for the Semester in which they plan to graduate. The deadlines to submit the application via GWeb are February 1 for Spring, July 1 for Summer, and October 1 for Fall. If a candidate does not complete their degree requirements in the Semester anticipated in the initial graduation application, they must re-apply for graduation in a later Semester. Student must be actively enrolled in the Semester in which they are applying for graduation.

The Health Sciences Dean’s Office will contact the student regarding all graduation and commencement matters (tickets, parking, obtaining regalia, etc.) if they indicated on the graduation application that they plan to attend Commencement. Information pertaining to graduation can also be found on the main GW and Health Sciences websites.

**Additional Information**

PhD in Translational Health Sciences Doctoral Handbook

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Registration Policy

**Maintaining Continuous Registration.** As per the guidelines provided by SMHS, all PhD candidates are required to maintain continuous registration from their first Semester of enrollment through successful defense of their dissertation. Maintaining continuous registration means that the student is enrolled in at least one class every Fall and Spring Semester until graduation. The course can be independent research, internships for which credit is granted, and dissertation research. Based on the cohort-nature of the PhD program of study, students will be required to register for a fixed number of courses in the Fall, Spring, and Summer Semesters through the pre-candidacy phase. Once a student transitions into candidacy, Summer becomes an optional term. Registration fees vary depending on the candidate’s stage of training.

If a student “breaks enrollment,” they will have to reapply for admission. Readmission is not guaranteed. Students who break enrollment and must reapply for admission are subject to the current criteria, regulations, and curricula at the time of readmission.

Under very specific circumstances, continuous registration may be maintained by registering for a Continuous Enrollment (CE) or a Leave of Absence (LOA). Each is briefly described below.

**Continuous Enrollment (CE).** Doctoral candidates who are unable to defend in the Semester in which the dissertation defense materials are filed—usually because they filed too late in the Semester—may register for Continuous Enrollment (CE) in the immediately following Semester and defend in that Semester. If a delay moves the student into Year 5, they must register for Directed Study (THS 8992).

Students who want to enroll in CE for this reason must have been enrolled in the correct number of dissertation credits the previous Semester. Students working on their dissertation research between Semester 10-12 will use CE as needed (i.e. up to three Semesters). To request additional Semesters, the student must seek approval from the Senior Associate Dean for Health Sciences. The student must consult with their advisor regarding registration in the Semester prior to when they wish to use CE.

**Leave of Absence (LOA).** A doctoral candidate who, for compelling reasons, is temporarily unable to continue his or her program of study may request a Leave of Absence (LOA). If the request is approved, the student is to register for the LOA in the approved Semester. The LOA status is limited to two Semesters, and this time counts towards the eight (8) year time limit. Students who request a one-year leave of absence must submit a Registration Transaction Form (RTF) for each of the two Semesters. After reaching the limit, doctoral students seeking a LOA in additional Semesters must petition the Senior Associate Dean for Health Sciences for approval. Students should consult with their advisor regarding registration in the Semester prior to when they wish to use a LOA.

Please note, during a LOA, faculty members are not to help students with the dissertation and students will not have access to many of the university resources. If the student does not enroll each Semester and has not been granted a LOA, they will “break enrollment,” and need to discuss their options for readmission with the Program Director.
**Deceleration.** The doctoral program is cohort-based. Upon entry into the program, students are expected to follow the recommended program of study through Year 2 (Semester 1-Semester 6). Content and assignments in Year 1 and 2 courses are highly integrated so deceleration of any type, including individual course drops or withdrawals, is not feasible. Students who are having difficulty maintaining a full workload should speak to their advisor about other options (see Leave of Absence).

**Registration Procedures**

Students will work with the PhD program administrator to register into courses each semester. The administrator will contact students individually during the course registration period to facilitate enrollment.

**Course Drops and Withdrawals.** PhD students in the pre-candidacy phase should speak to their academic advisor before dropping or withdrawing from a course (see Deceleration). After the add/drop period, which traditionally is the first two weeks into the Fall and Spring Semesters, PhD students need approval from their advisor, Department Chair, and Senior Associate Dean for Health Sciences for course drops. Both a General Petition and a Registration Transaction Form must be submitted for review. Withdraw requests prior to the deadline only require a Registration Transaction Form. Students should refer to the Student Service’s website for information on the refund schedule and withdrawal deadlines.

Failure to attend classes or unofficial notification to the instructor does not constitute dropping a course and may result in a transcript notation of Z (unauthorized withdrawal) or a failing grade. Courses can be dropped only through the add/drop procedure described above.

**Satisfactory Academic Progress (SAP)**

**Program Time Limit.** Candidates in the PhD program are expected to complete their coursework, write, and defend their doctoral dissertation within eight (8) years from the time of admission to the doctoral program. If a candidate finds that he/she cannot complete the degree within the allotted time period, a request for an extension of no more than one year at a time must be made in writing with the Program Director and then submitted to the Department Chair and the Senior Associate Dean for Health Sciences. Exceptions to the eight-year limit are rarely given and only with convincing evidence that the student has made all practical efforts to complete the doctoral program within eight years. Extensions require approval by the department and the Health Science Dean’s Office. The candidate can expect to hear directly from the department regarding assignments of a new time limit.

**Masters of Science in Health Sciences Candidacy.** Students who do not successfully defend their dissertation within the allotted eight (8) year time frame and are not granted an extension should discuss their eligibility for the [MSHS in Clinical and Translational Research](#) with the Program Director.

**Academic Integrity.** GW SMHS faculty and students have the joint responsibility for maintaining the academic integrity and guaranteeing the high standard of conduct of the institution. An ethical code is based upon the support of both faculty and students who must jointly accept the responsibility to live honorably and to take action when necessary to safeguard the academic integrity of this University.
Students enrolled in doctoral programs in the School of Medicine and Health Sciences assume an obligation to conduct themselves in a manner appropriate to The George Washington University’s mission as an institution of higher education and in accordance to the Code of Academic Integrity. A student is obligated to refrain from acts which he or she knows, or under the circumstances has reason to know, impair the academic integrity of the University. Violations of academic integrity include, but are not limited to: cheating; fabrication; plagiarism; knowingly furnishing forged or false information to any agent of the University for inclusion in an academic record; academic dishonesty; violation of the rights and welfare of animal or human subjects in research; and misconduct as a member of either School or University committees or recognized groups or organizations.

All members of GW community are responsible for immediately informing the instructor, Department Chair, the Office of Academic Integrity, and/or the Academic Integrity Council of any suspected violations of its Code of Academic Integrity. The Academic Integrity Council, composed of four students and two faculty members, is responsible for implementing its Code of Academic Integrity according to the procedures set forth therein. This includes formal hearings of suspected violations. Students and faculty should become familiar with the Code of Academic Integrity, copies of which are provided in student and faculty publications and materials, posted on the GW website, and can be obtained at the Office of Academic Integrity.

**Grading Policy.** The following grading system is used for graduate students: A, Excellent; B, Good; C, Satisfactory; F, Fail; other grades that may be assigned are A−, B+, B−, C+. Symbols that may appear include AU, Audit; I, Incomplete; IPG, In Progress; W, Authorized Withdrawal; Z, Unauthorized Withdrawal; CR, Credit; NC, No Credit.

**Unauthorized Withdrawal:** The symbol of Z is assigned when students are registered for a course that they have not attended or have attended only briefly, and in which they have completed no graded work. At the end of the academic year, students’ records are reviewed; if there is more than one Z per Semester, a student’s record will be encumbered until released by the student’s advising office. The symbol of Z is not a grade but an administrative notation.

Except for courses that specifically state that repetition for credit is permitted, a candidate for a degree at GW may not repeat a course in which a grade of C for graduate students or better was received, unless required to do so by the department concerned. A Registration Transaction Form must be submitted to the Office of Student Services for processing, accompanied with a written statement by the Program Director authorizing the repeat registration.

**Incompletes:** The symbol I (Incomplete) indicates that a satisfactory explanation has been given to the instructor for the student’s inability to complete the required work of the course during the Semester of enrollment. At the option of the instructor, the symbol I may be recorded if a student, for reasons beyond the student’s control, is unable to complete the work of the course, and if the instructor is informed of, and approves, such reasons before the date when grades must be reported. This symbol may be used only if the student’s prior performance and class attendance in the course have been satisfactory. Any failure to complete the work of a course that is not satisfactorily explained to the instructor before the date when grades must be turned in will be graded F, Failure. If acceptable reasons are later presented to the
instructor, that instructor may initiate an appropriate grade change. The work must be completed within the designated time period agreed upon by the instructor, student, and school, but no more than one calendar year from the end of the Semester in which the course was taken. All students who receive an Incomplete must maintain active student status during the subsequent Semester(s) in which the work of the course is being completed. If not registered in other classes during this period, the student must register for Continuous Enrollment status.

When work for the course is completed, the instructor will complete a grade change form and submit it to the Office of the Registrar. The final grade will replace the symbol of I. If work for the course is not completed within the designated time, the grade will be converted automatically to a grade of F, Failure, 0 quality points, and the grade-point average and academic standing recalculated.

The Grade-Point Average: Scholarship is computed in terms of the grade-point average, obtained by dividing the number of quality points by the number of credits for which the student has registered, both based on his or her record in this university. The grade-point average is computed as follows: A, 4.0; A−, 3.7; B+, 3.3; B, 3.0; B−, 2.7; C+, 2.3; C, 2.0; for each credit hour for which the student has registered as a degree-seeking student. Grades of C−, D+, D, and D−, are not used for doctoral students. In the case of a student who is allowed to repeat a course, the first grade received remains on the student’s record and is included in the grade-point average. Courses marked AU, CR, I, IPG, P, NP, R, W, or Z are not considered in determining the average, except that courses marked I will be considered when a final grade is recorded. With the exception of Consortium courses, grades in courses taken at other institutions are not considered in computing the grade-point average.

Academic Requirements. Students are expected to earn a grade of “B” (3.0) or higher in every course for which they are registered. If a student receives a grade below a “B” (3.0), this will be brought to the attention of the Program Director and a review will take place to determine the circumstances behind the grade. If a student receives a second grade below a “B” (3.0), they will be required to meet with the Program Director, and, if deemed appropriate, may be asked to leave the program.

Graduation requires a minimum cumulative grade-point average of “B” (3.0) in all coursework taken following admission to a graduate program in Health Sciences. If a student’s cumulative GPA falls below 3.0, the student will be placed on academic probation. The student will have 9 credit hours in which to meet the minimum GPA requirements. If the student does not meet the minimum scholarship requirements after the probationary term, the student may be dismissed from the program (see Dismissal).

Academic Probation: A graduate student whose cumulative GPA falls below 3.0 will be placed on academic probation. Students while on probation will be allowed to register for no more than 9 credit hours total, unless approved by the Program Director and the Senior Associate Dean for Health Sciences.

If the student succeeds in raising his/her cumulative GPA to the minimum scholarship requirements, academic probation will be lifted. A student who has been placed on probation more than one time may be recommended for dismissal.
Dismissal: A doctoral student who has received two or more grade below “B” (3.0) may be recommended for dismissal. Additional conditions for dismissal and the full policy may be found in the Health Sciences' Regulations in the Bulletin.

Student Appeals Process. PhD candidates have the right to appeal any University decision made regarding their academic record. All appeals follow the same informal and formal attempts as resolution. Grade appeals include an additional aspect of the formal process, which is specified in the Regulations section of the Bulletin called Appeal Procedures for Cases of Alleged Improper Academic Evaluation. For appeals not involving academic evaluation, please refer to the process below:

Informal Attempts at Resolution: Prior to appealing a decision through the Health Sciences Dean’s Office, the student should first attempt to resolve the matter with the faculty member(s) most directly responsible. The student must submit a written appeal to the relevant faculty member(s) within ten (10) calendar days of the time of the perceived academic infraction, with a copy to the Program Director. The letter requesting an appeal must include the following information:

i. A description of the reason for requesting the appeal
ii. A detailed description and timeline of events
iii. A statement explaining outcome sought by student
iv. A clear plan of action if the appeal is approved

If no resolution results, the student should then consult with the individual at the next administrative level, for example, the Program Director or the chair of the relevant department. A review shall then be conducted by the Program Director and Department Chair, consulting as appropriate the student and faculty involved.

If there continues to be no resolution, the Program Director, Department Chair or student may contact the Health Sciences Dean’s Office and solicit assistance to ensure that adequate steps are made to resolve the issues at an informal level without the complaint escalating to the status of a formal appeal.

Formal Attempts at Resolution: If a mutually satisfactory resolution is not achieved, the student may, within five (5) days of the decision being rendered, submit a written letter of appeal to the Senior Associate Dean for Health Sciences.

Student Accounts and Financing a Graduate Education
Health Sciences admission decisions are made without regard to financial need. Descriptions of available financial assistance are provided in the School of Medicine and Health Sciences’ Sources of Aid (http://smhs.gwu.edu/fin-aid/sources) and the GW Office of Graduate Student Assistantships and Fellowships website (http://www.gwu.edu/~fellows/). Students enrolled at other campuses or centers should contact their program faculty to determine if there is tuition support available.

NOTE: Please review the eligibility factors for details on financial aid eligibility. Students following the program of study will be considered full-time students from Semester 1 - 5, and half-time students in
Semester 6. Students will be below half-time status starting Semester 7. Please contact Office of Student Financial Assistance directly for specific information about financial aid eligibility.

**Billing – Five Equal Payments.** The PhD in Translational Health Sciences is a set-tuition program. The tuition is divided over nine Semesters:

Semester 1 - 5: Students will be charged approximately 16% of the total program tuition each Semester (example, if total tuition is $70,000, students will be charged $11,200 each semester for the first five semesters)

Semester 6 - 9: Students will be charged approximately 4% of the total program tuition each Semester (example, if total tuition is $70,000, students will be charged $2,800 each semester for four semesters)

**Directed Study (THS 8992).** If a student has not successfully defended the dissertation by the end of the Summer Semester of Year 4 (Semester 12), the student must enroll in THS 8992 Directed Research starting Semester 13. This 1 credit course is required each Semester until the dissertation is successfully defended or program time limits are reached, whichever comes first. Students will be charged the prevailing per credit rate and associated fees each Semester of enrollment in THS 8992.

The George Washington University bills by Semester. Statements are available approximately 4-6 weeks prior to the start of the Fall and Spring Semesters and approximately 3-4 weeks prior to the Summer Semester. An email notification is sent when the bill is ready to view. GW does not mail paper statements; all billing is done electronically through the Student Account eBill.

Students always have access to their eBill and Student Account status through GWeb. Students are strongly encouraged to check their Student Account regularly to ensure that the account is in good standing. Students can add Authorized Users (e.g. parent, relative, spouse) so they may also review account activity and/or make online payments.

**Due Dates:** Payment for each term is due on the first day of the Semester, on the main campus, or upon registration for any courses added after the first day. If an outstanding balance remains after the start of the Semester, a monthly statement including late payment fees and finance charges will be sent. This statement will have a new due date. Please remit payment by this date to avoid additional late payment fees and finance charges.

**Late Payment:** Failure to meet payment deadlines results in an administrative hold, late fees and finance charges. The administrative hold will remain on the account until the balance is paid in full. It is the student’s responsibility to ensure that payment arrangements are made in a timely manner.

**Financial Hold:** A financial hold can be placed on a student's account for a variety of reasons. The Student Accounts Office applies financial holds for outstanding balances, returned checks and invalid addresses.

**Monthly Payment Plans.** The university has partnered with ECSI to offer an interest-free monthly payment plan available to all students. Specific information regarding these payment plans may be found online through the Office of Student Financial Assistance.
Student Health Insurance. GW offers a voluntary comprehensive health insurance through Aetna Student Health. In Accordance with the Affordable Care Act, many benefits that are offered include:

- An unlimited lifetime maximum benefit
- Prescription benefit coverage
- Preventative services covered at 100% (at preferred providers)
- Contraception covered 100% (at preferred providers)

Additional information regarding Student Health Insurance may be found through the Division of Student Affairs. Note: Students may opt out of GW’s insurance plan through any private plan that meets university criteria for coverage.

Tuition Awards and Scholarships. GW SMHS offers limited tuition award and scholarship assistance for students in the Health Sciences. These resources come from a variety of different endowed and restricted scholarship funds as well as through research or contracted training grants. To qualify, an applicant must be a U.S. citizen or permanent resident, be enrolled full-time in an approved program of study, and demonstrate exceptional potential for success in their program as evidenced by their post-secondary academic achievement, professional experiences, and leadership in the community. No additional scholarship application is required for consideration.

Tuition awards and scholarships are credited to the student's account at the beginning of each Semester after the student has registered for the required credits. These awards cover the cost of tuition for coursework that is credited towards the student's degree program, up to the total amount of the award. Any part of the tuition award that is not used within the academic term stated reverts back to the department and cannot be converted to cash.

The student has full responsibility, unless the award letter states otherwise, for covering the costs of the following charges upon registration: the Student Association fee, tuition charges above the tuition award, late registration fees, special course-related fees, and the health insurance fee. The student will also be liable for any payment due and charges for courses that are (1) not on the student's program of study, or (2) not taken for credit. Consortium courses are allowed if the particular course is not offered at GW and if the consortium course is included in the student's official program of study document.

Award Termination: All or part of a tuition award or scholarship may be terminated at any time if the conditions of the award as described in the award letter are not met or if poor academic performance warrants it. This also includes course registration situations in which a student drops a course once the Semester has begun and does not replace it with another approved course carrying the same number of credit hours. In this case, the tuition award will be withdrawn and the student will be liable for any payment due. In some cases, the entire award is withdrawn. The George Washington University reserves the right to terminate a tuition award or scholarship immediately and without prior notice if, in the judgment of the Department Chair or awarding department and in concurrence of the Senior Associate Dean for Health Sciences, such action is warranted.
Tax Implications: It is the responsibility of the student to understand the federal and state income tax implications of receiving a tuition award or scholarship. The University has no tax withholding or reporting requirements related to the tuition component of a tuition award or scholarship. The Tax Department’s website (http://taxdepartment.gwu.edu) provides general information to assist students in determining tax liability and reporting obligations. Because tax liability depends on a student’s particular circumstances, students are advised to contact a personal tax advisor or the IRS with any questions or concerns.

Student Loan Implications: It is the responsibility of the student to understand the student loan implications of receiving a tuition award or scholarship. If the student has applied to borrow any sum, have financial awards, then an adjustment may be made to the loan amount. It is recommended that the student consult with a representative from the Office of Student Financial Assistance (OSFA) for additional information. The OSFA is located in Colonial Central (Marvin Center, lower-level), 202-994-6620, finaid@gwu.edu, http://financialaid.gwu.edu.

Important Information Regarding Federal Student Loan Eligibility. Federal regulations require students to maintain good academic standing and make Satisfactory Academic Progress (SAP) in order to remain eligible to receive federal student loans. The federal standard for making satisfactory academic progress is measured three ways: cumulative GPA, Percentage of Credits Earned (PACE), and by maximum time frame.

Cumulative GPA: All GW students at the graduate level must maintain a minimum 3.0 cumulative GPA in order to remain in good academic standing and maintain eligibility to graduate. To maintain eligibility for student loans, students must maintain a 3.0 GPA each Semester they are enrolled.

Percentage of Credits Earned (PACE): Graduate students are expected to complete 75% of the courses attempted in each Semester including the Summer. Any course a student drops after the add/drop period will be considered attempted credit hours. Any course a student is enrolled in after the add/drop period will be considered attempted credits hours for which academic credit will be awarded. Courses in which a student has withdrawn, received an incomplete grade of “I”, no grade, or a failing grade are considered attempted credit hours, but not completed hours. Courses in which a student receives an “IPG (in process grade)” are considered completed hours.

Maximum Time Frame: Graduate students are expected to complete their degree requirements in the time allotted. To maintain eligibility for student loans, students must complete all degree requirements within 150% of the published length of time of their degree programs. All courses attempted including courses where a student has withdrawn, received an incomplete grade of “I”, no grade, or a failing grade will be counted towards the maximum time frame regardless of whether or not the student received financial aid in that Semester. Only audited courses do not count towards the maximum time frame.

Evaluation of SAP: Each Semester the Office of Student Financial Assistance (OSFA) will assess the progress towards degree completion of any student who has received financial aid while at GW. If it is determined that a student is not making satisfactory academic progress, they will be notified by email via their GW email account. The first notification will be a warning and students will have one Semester to bring themselves into compliance with the SAP policy.
**Appeals Process:** If students lose their eligibility to receive federal student loans, they may submit a written appeal to the OSFA Satisfactory Academic Progress (SAP) Appeals Committee to be reinstated. Much like the Health Sciences’ appeal process, students must have a compelling reason why they are not making satisfactory academic progress and they must demonstrate what they will do differently so that they may remedy their academic standing.

**Full-Time/Half-Time Certification.** Students who intend to register for less than the number of credit hours required in the Fall and Spring Semesters (full-time = 9; half-time = 4.5 credit hours), and who need to be certified as in full or half-time status must complete the Full-/Half-Time Certification Form. The requirements and limitations of this certification are listed on the first page of the form. The form should be completed and submitted to the Office of Student Services (hsp@gwu.edu) after student registration and academic advisor approval.

**Note:** Students enrolled in Summer Semester classes are considered half time as long as they are enrolled in at least 3 credits. They will not need to complete and submit the Full-/Half-Time Certification Form for the Summer Semesters.

Students registered for CE may be certified as half-time and will be reviewed on a case-by-case basis.
Appendix A: Expanded Dissertation Guidelines

These guidelines provide a framework for thorough presentation of research. The discussion in some parts of the chapters will differ for quantitative, qualitative, and/or mixed methods research studies. The research questions drive selection of the methodological approach(es) and design of the research.

Quantitative research includes but is not limited to laboratory and field experiments, quasi-experimental studies, secondary data analysis of existing databases, and other studies that collect and analyze numeric data. Qualitative research includes but is not limited to ethnographies, phenomenological studies, sociolinguistic or discourse analysis studies, histories, cultural studies, and naturalistic inquiry. Mixed-methods research combines both quantitative and qualitative approaches, as is common in sequential, concurrent, and multiphasic designs. Dissertations using those methods will usually benefit from both the guidelines for quantitative research and those for qualitative research, depending on the type of data collected and the research question.

These are guidelines only. The student must consult with their dissertation chair and committee members to determine the elements of their dissertation. If the dissertation chair feels there is a significant departure from the standard format, s/he should consult with the Program Director prior to the proposal defense.

PhD in THS dissertations are structured as follows:

- Chapter 1: Introduction (Broad Overview of the Research; Description of the Translational Nature of the Research)
- Chapter 2: Review of the Literature (and Conceptual Framework)
- Chapter 3: Methodology
- Chapter 4: Results
- Chapter 5: Interpretations, Conclusions, and Recommendations
  - References
  - Appendices

The School of Medicine and Health Sciences requires that dissertation proposals include the elements normally found in Chapters 1, 2, 3, and the references of a dissertation.

Both the proposal and dissertation are major written documents that must convey complex ideas. It is the student’s responsibility to present those ideas clearly and concisely. Both documents are also to comply with the writing and formatting style specified in the *Publications Manual of the American Psychological Association* (Sixth Edition).

Appendix B: Overview of Dissertation Chapters

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Chapter 1: Introduction

This chapter introduces and provides a broad overview of the research that is to be undertaken. Parts of Chapter 1 summarize the information in Chapters 2 and 3, and because of that, some candidates will choose to finalize Chapter 1 once Chapters 2 and 3 are more clearly developed.

Dissertation chairs frequently require students to provide a 5-10 page overview (Executive Summary) of their proposed “dissertation research” before undertaking a full literature review and detailed development of the methodology. Some may call this a “prospectus” and some may call it a first draft of Chapter 1. Whatever the terminology, the final draft of Chapter 1 is to include accurate summaries of the final drafts of Chapters 2 and 3.

It is important to undertake preliminary examinations of the literature before finalizing the “problem” and research questions of the proposed research. (These terms are defined below.) Exploration of the literature sometimes reveals that the initially-chosen focus has already been extensively researched. If the results are contradictory, that offers the student an opportunity to do research that clarifies the reasons for the contradictions. If the results reported consistently support or contradict the student’s expectations, they will probably have to find other research questions with more potential to contribute to knowledge or practice in the selected area of study.

1-A Overview. Briefly explain why the study is being undertaken and what main questions or foreshadowed problems will be addressed. Do this in a general manner, because it will be done more specifically in the following sections.

1-B Statement of the Problem. Discuss the problem to be addressed in the research—the gaps, perplexities, or inadequacies in existing theory, empirical knowledge, practice, or policy that prompted the study. The problem may be a theory that appears inadequate to explain known phenomena, the lack of empirical data on a potentially interesting relationship between X and Y, or a common practice that appears ineffective. First state the problem generally, and then state the specifics that the research will address. Problems usually have underlying causes that may be well-known or the subject of speculation. They also have consequences that are often apparent. The researcher should briefly discuss these causes and consequences.

1-C Purpose and Research Questions. The purpose of research is to acquire knowledge to address the problem or certain aspects of it. Quantitative research tries to fulfill that purpose by answering questions and/or testing hypotheses. Qualitative research tries to fulfill that purpose by starting with foreshadowed problems, conjectures, or exploratory questions. Mixed-methods research may use both approaches.

Quantitative Inquiry and Quantitative Strand of Mixed Methods Inquiry: Research Questions and/or Hypotheses: Present the research questions and/or hypotheses stated in 3-B below State them fully—exactly as they are stated in Chapter 3.
Qualitative Inquiry and Qualitative Strand of Mixed Methods Inquiry: Foreshadowed Problems, Conjectures, or Exploratory Questions: Present the foreshadowed problems, conjectures, or exploratory questions stated in 3-B below. State them fully, exactly as they are stated in Chapter 3.

1-D Statement of Potential Impact. Discuss the potential significance of the research. Significance comes from the uses that might be made of the results—how they might be of benefit to theory, knowledge, practice, policy, and future research. The potential significance should be based upon the literature review in Chapter 2.

1-E Theoretical Foundation or Conceptual Framework. Briefly summarize the theoretical foundation or conceptual framework(s) derived from the literature review that is reported in Chapter 2.

1-F Summary of the Methodology. Briefly summarize the methodology of the research that is described fully in Chapter 3.

1-G Limitations and Delimitations. All studies have limitations to their validity, generalizability, and applicability. The student has a responsibility to forewarn readers of the limitations and the reasons for them. Some limitations arise from the delimitations of the study, boundaries to make the study manageable, such as studying only one subpopulation of interest, addressing only parts of a problem, or perhaps examining only short-term effects. Some limitations arise from accommodating ethical concerns. Others come from shortcomings in methodology.

Quantitative Inquiry: State the limitations of the study. Consider threats to internal and external validity that may provide alternative explanations for the study’s findings. The following questions will help to identify some common sources of limitations in quantitative research. Did you sample from a subpopulation rather than the full population of interest? Did the sampling frame coincide little, moderately or closely with the targeted population or sub-population? Were the response rates and item-completion rates substantially less than 100%? Did you measure only some of the constructs likely to be applicable? Were the informed consent materials likely to have biased some responses? Were measurement scores less than highly reliable and valid? Were the experiments perhaps biased by Hawthorne and other “experimenter effects”? Did quasi-experiments and statistical modeling fail to control for viable competing hypotheses? Were the assumptions of the statistical procedures not fully met? Did the low power from small sample sizes perhaps contribute to few statistically significant results?

Qualitative Inquiry: Describe the limitations of the study. Consider biases, assumptions, or procedures that may reduce the accuracy or transferability of the study’s findings. The following questions will help the student to identify some common sources of limitations in qualitative research. What were the boundaries of the case or unit studied? What related phenomena, events, or questions were not examined—by original plan or due to unexpected barriers? What access did the researcher seek but was unable to gain? How were informants selected, and how might that have biased or limited the information that was collected from them? How did requirements for protection of humans perhaps adversely affect the study? How did the researcher’s presence perhaps affect the phenomena being studied? How does the research maintain trustworthiness throughout the study?
Mixed Methods Inquiry: Describe the limitations of the study. Consider threats to rigor or accuracy arising from combining and integrating (sometimes opposing) research paradigms. The following questions will help the student to identify some common sources of limitation in mixed methods research. If using a convergent design, are the qualitative constructs and quantitative variables parallel? Are sample sizes for the two strands equal or unequal? How are data merged and divergent results explained? In a sequential design, how do you build from one strand to another; for example, how were follow-up questions and samples selected?

1-H Definition of Key Terms. Briefly define key terms in the research that might not be well understood by the readers. Cite a source for each definition derived from the literature as appropriate. Key terms generally should be defined both conceptually (in accordance with their theoretical underpinnings) and operationally. The latter means defined in terms of how they will be measured.

Chapter 2: Literature Review

Scholarly research is always a leap from the known to the unknown. The literature review and conceptual framework are used to construct a platform of the known from which the researcher jumps.

Constructed carefully, the literature review and conceptual framework can maximize the chances of spanning the abyss and reaching something substantive. Constructed carelessly, they can undermine the research.

The literature review should carefully examine prior research and thought relevant to key aspects of the anticipated research. It should be used to inform:

a) The problem to be addressed and its significance
b) The theoretical foundation or conceptual framework
c) The research questions, hypotheses, foreshadowed problems, or conjectures
d) The research paradigm and the methodology

The GWU School of Education and Human Development has a website at www.gwu.edu/~litrev that helps students learn to conduct high-quality literature reviews. In addition, GWU Libraries provides continual training on how to conduct and write literature reviews. Visit the GWU Libraries website to find an up to date schedule of these opportunities.

The subsections indicated below are of the process and components of a literature review and not necessarily subheadings of Chapter 2.

2-A Introduction: Topic(s), Purposes, and Methods of the Literature Review. A literature review usually begins with an indication of the topic(s) to be covered and the purposes of the review. The methods of the review should be briefly described. Indicate the indices and other methods used to search for applicable literature, the terms searched with each, and the years searched (usually the last 10 or 20 years, plus key literature from earlier years). A review should address each topic highly applicable to the problem. For problems that are not well researched, the literature review may also address other topics that are tangentially related and might help inform the study. If the literature on a
topic is voluminous—it is not uncommon to find more than 100 studies—the student should be selective, covering the literature most applicable to the focus of their proposed research, as indicated by the research questions, hypotheses, foreshadowed problems, or conjectures. The student should explain how selections were made as to what to include and summarize the literature—is it equivocal, is there a common methodology, are there common limitations? The student should consult with their advisor before beginning the literature search to make sure they are covering the topics and years of research that he or she thinks are appropriate.

2-B Description and Critique of Scholarly Literature. Each major theoretical discourse, conceptual discussion, and empirical study should be described and critiqued briefly. Both the strengths and weaknesses should be identified. For theoretical discourses, indicate the source of the theory, overlaps, and disparities with other applicable theories, and whether and how well the theory has been empirically verified. For conceptual discussions, indicate the sources of the concepts, overlaps, and disparities with other applicable concepts, and whether and how well the concepts have been empirically verified. For empirical studies (including qualitative ones) indicate, the research questions, methodological strengths and weaknesses, results (both their magnitude as well as their statistical significance or extent of cross-verification), conclusions, and implications.

Organizing the written review can be a challenge because the review has several simultaneous purposes. Often the best strategy is to organize the studies under major topics, theories, constructs, research questions, or methodologies. When a given study addresses more than one organizational category, the researcher might critique it under the first applicable category, and then briefly refer to it under each subsequent applicable category. Alternatively, in the subsequent organizational categories, the researcher might extend the critique as appropriate for that category. When considerable literature falls within one organizational category, it might be organized within second level categories. Otherwise the description and critique of literature might be presented chronologically. Lesser literature sometimes can be described and critiqued jointly, for instance, by indicating, “Several other smaller studies found .... (Anderson, 2010; Baxter, 2012, Castro; 2005).”

The student should avoid creating a biased review that only covers prior literature that supports their predispositions and disregards other literature. Similarly, the student should consistently critique the literature. The student must not ignore weaknesses in studies supporting the predispositions and must not be hypercritical of studies that contradict their predispositions. Failure to conduct a fair-minded review is likely to compromise the research.

2-C Inferences for Forthcoming Study. Once the student has described and critiqued the individual sources, they should analyze and synthesize across them to draw inferences applicable to the anticipated research. The inferences generally should be about: (a) the problem to be addressed in the research and its significance, (b) possible research questions, hypotheses, foreshadowed problems, or conjectures, (c) possible theoretical or conceptual framework to be used, and (d) possible research paradigms and methodologies to be used. The inferences might be stated at the end of each major topic of the student’s review or after all the relevant topics have been discussed. The following questions may generate useful inferences: What does the literature state about the extent of the problem, its underlying causes, where it is most and least severe, and its consequences for theory, knowledge, practice, policy,
and/or research? How have results of empirical studies varied according to the questions/hypotheses/conjectures that have been addressed? What conceptual frameworks have been applied and with what insights? How might the conceptual frameworks be modified or synthesized to provide new insights to this problem? Which research paradigms and methods have yielded the strongest results and which the weakest results, and why?

2-D Theoretical or Conceptual Framework for Forthcoming Study. The problem and research questions, hypotheses, foreshadowed problems, or conjectures were explained above under Chapter 1, but the “theoretical framework” or “conceptual framework” has not yet been explained. The conceptual framework is constructed by the student and it may include a theory or theoretical framework. (It might also be noted that as appropriate the theoretical/conceptual framework can be explicated in Chapter 1). These are a theory or set of interrelated constructs that provide perspective or a “lens” through which the research problem is viewed and through which the choices about the research will be made. They help narrow down and focus the research. Note that a theoretical or conceptual framework works like a telescope or microscope, and thus it both enhances what the student can see and also restricts their breadth of vision. For that reason, a conceptual framework should be used judiciously to help inform the study rather than to dictate all aspects of it. Sometimes important breakthroughs occur when a researcher abandons the commonly-used conceptual framework and applies one never before used with a given problem. The definition of a theoretical framework or conceptual framework may vary by disciplinary field and thus the student should consult closely with her or his chair on this section of the dissertation.

Quantitative Inquiry: The conceptual framework explains the key constructs studied and presumed relationships among them. It often has implications for the subpopulations studied, the variables measured, and the data analysis techniques that are used. One example of a conceptual framework is that of human capital, which views individuals and companies as inclined to invest in education and training to enhance productive capabilities and earnings, much like they would invest in new machinery.

Qualitative Inquiry: The conceptual framework often defines the perspective that will be taken in the research. It usually has implications for the interpretive paradigm and methodological approaches that are elected. For instance, Piaget’s theory of intellectual development, and subsequent refinements to it, offers a theoretical framework that has been used in many qualitative studies of early childhood development and elementary schooling.

Mixed Methods Inquiry: In mixed methods inquiry, conceptual frameworks reflect the predominant strand of the study, or may change as the study progresses. The overarching worldview (or paradigm) is the more relevant concept for a mixed methods study as it defines the beliefs and values underlying the study. As stated by Creswell (2015, pg. 16), “These beliefs may relate to what types of evidence we used to make claims (epistemology) or whether we feel that reality is multiple or singular (ontology)”. Many mixed methodologists use a “pragmatic” approach (use what works), but the reasoning underlying choices must be explicit and theoretically grounded.

Chapter 3: Methods
The methods are the procedures used to acquire empirical evidence and analyze it for purposes of answering research questions, testing hypotheses, examining foreshadowed problems, following up on conjectures, and going forward from exploratory questions. The choice of methodology should be made in light of the literature review and with careful consideration of the research questions. Small oversights can sometimes undermine a long and difficult study. The student’s committee will help them think through the appropriateness of proposed methods and will probably suggest some refinements.

The student’s approved proposal is considered a blueprint for research. The student is expected to do everything indicated in that blueprint. In experimental designs, it is usually expected that no changes will be made unless the student encounter unanticipated problems that require modifications. In other quantitative and mixed methods inquiry, such as quasi-experimental, longitudinal, and secondary data analysis, additions over and beyond the blueprint may be appropriate to deal with unanticipated opportunities. In qualitative inquiry, the proposal outlines the broad parameters of the study, but usually several details are expected to be decided during the actual data collection and analysis. Changes in the planned research should be made only after consultation with the full dissertation committee. Relevant changes include but are not limited to the collection and handling of data from human subjects and will require the student to submit an IRB Modification Form for approval through the GW Office of Human Research. A few important aspects of the methods cannot be known until after the study has been conducted, such as the response rates from samples, errors or accidents in carrying out the planned methods, and whether the collected data meets the assumptions of the planned statistical analyses. Consequently, whatever is written in the research proposal about methodology may have to be updated when preparing Chapter 3 of the dissertation.

The subsections indicated below are the components of the methodology and not necessarily subheadings of Chapter 3.

3- A Overview of Methodology. State the specific research questions and/or hypotheses to be investigated. Research questions orient the researcher to the immediate task and are the basis for selection of the research design and methods.

A study may have one or more general questions with several sub questions nested under each. To answer the questions, the student needs to state the questions operationally (in terms of specific measures) and collect data on those measures.

3- B Qualitative Inquiry, Including the Qualitative Strand in Mixed Methods. State the foreshadowed problems, conjectures, or exploratory questions that guided the inquiry. The conjectures or exploratory questions can be descriptive, associational, and process-oriented. Qualitative inquiry answers questions in a holistic manner based on all or most of the available information, cross-verifying among several sources of information. The process often involves continual drawing of tentative inferences throughout the ongoing data collection and verifying those inferences with the subsequently-collected data.

In contrast to quantitative inquiry, qualitative inquiry may result in emergent hypotheses articulated at the conclusion of the study during the interpretation phase (Chapter 5).
3-C Quantitative Inquiry, Including the Quantitative Strand in Mixed Methods. Hypotheses are used in experimental research and sometimes in quasi-experimental research and nonexperimental research. They create a bridge between the theoretical considerations that underlie the questions and the methods that will subsequently be used answer the objectives of the study.

3-D Research Procedures. Include a statement of the research design. Describe in detail the sampling, data-collection, and data-analysis procedures. Generally, the description should be thorough enough that other skilled researchers could replicate the study from the description. The APA Publication Manual indicates that the methods section should normally have subsections for “participants,” “apparatus” (or “materials”), and “procedure.” That will work for experimental studies but may be awkward for some other types of quantitative designs.

For the design, describe the timing of data collection relative to any naturally occurring or induced intervention (if relevant), the groups from whom data will be collected, any random assignment there might be to groups, and any statistical controls that will be used to control for possible initial differences in comparison groups. For descriptive and associational research questions, the designs are usually simpler than for causal questions, which require experimental or quasi-experimental designs.

For the sampling, describe the population of interest, the sampling frame used and how well it corresponded with the population, the sampling procedures and sample size, the response rates, and missing data rates. Give the rationales for the decisions were made about sampling, including any power estimates that were made. Indicate what was done in an effort to secure high response rates and to minimize missing data. Describe anything else that might have biased the sample.

For the data collection, indicate whether established instruments or new methods were used, and why. A good place to look for established instruments is http://ericae.net use the advanced search capabilities) and http://www.unl.edu/buros/. Indicate available psychometric data for scores from established instruments and why this should hold for the data. Indicate procedures used to develop, field-test, and determine the reliability and validity of scores from created instruments. Append copies of all instruments except: (a) those developed by others and for which the researcher cannot secure permission to include from the copyright holder, and (b) those that must be kept secured. Describe how data collectors were trained, monitored, and perhaps retrained. Describe manual data editing procedures. Report any irregularities known to occur during the data collection and the likely effects of irregularities.

For the data analysis, indicate coding procedures used for open-ended responses and precautions used to ensure valid coding. Indicate data entry and verification procedures and computerized checks for suspicious data. Indicate any data transformations and computation of scale scores and checks made to assure those were correctly programmed. Indicate what data analysis procedures were used (they should correspond with the type of research question and data type), why, and checks made to ensure that the data met the assumptions of the analytic procedures.

Include a statement of the research design. Describe in detail how the inquiry was undertaken. Generally, the description should be thorough enough that other skilled researchers could approximately replicate the student’s study from the description.
Introduce the epistemology or research paradigm that will guide the inquiry.

Explain the theoretical perspective that will drive the research, and why it was selected.

Indicate the methodology used, and why it was selected.

Indicate the specific methods used, and the justification for them. How were sites, cases, and informants selected? Why? Describe the methods used to collect the data. Why? What verification procedures were used in the field? How did the researcher protect against imposing personal biases on the data? Describe and append any interview guides, protocols, or rubrics used to assist in the data collection.

Indicate how non-numeric data was managed. Were notes taken or audio/video recordings made? Was any data not analyzed? If not, why?

Indicate how data was analyzed and interpreted, making sure the analysis was consistent with the selected methodology and data type. Indicate when/whether data analysis influenced subsequent data collection. If themes were inferred, explain how. If transcripts were coded, explain the coding system and checks for coding reliability and validity. How was data analyzed from the coding? How were findings triangulated or otherwise verified? How was the full set of data interpreted?

Articulate a subjective statement summarizing who the researcher is in relation to what and whom they are studying. The statement should be informed by, but not limited to, the researcher’s personal history, identification/identity, cultural worldview, and professional experiences. The purpose is to articulate how such factors may affect the research in terms of credibility, authenticity and overall quality or validity. Qualitative research in itself does not require evidence of validity, but for the purposes of a dissertation evidence of validity is expected. As such, procedures to be used should be articulated in chapter 3, and the evidence of those provided in chapter 4.

**3-E Human Participants and Ethics Precautions.** Summarize potential risks to humans from whom data is collected in the research, and summarize precautions taken to ensure informed consent (when needed), maximize data safety and security, and minimize the risks to participants in the research. This information can be drawn from the GW Office of Human Research Institutional Review Board Submission Form that must accompany the proposal when it is submitted to the SMHS PhD Program Director. (Reminder: The Student must have approval from the GW Office of Human Research and the CRL Department Chair before beginning recruitment or data collection from or about humans!) Also address other ethical issues, such as possible conflicts of interest and personal biases that could have influenced the research, and how the effects were minimized. After approval of the proposal, if events occur during the research that raises new risks to human participants, those should be reported to the GW Office of Human Research.

**Chapter 4: Results**

Data analysis, whether numeric or narrative, is intended to summarize a mass of information to answer the research questions, test the hypotheses, examine the foreshadowed problems, and explore the conjectures. The results are generally reported in Chapter 4 and then interpreted in Chapter 5. That is
not possible for some modes of qualitative or mixed methods inquiry, where analysis and interpretation are closely intertwined, but even then, the interpretation in Chapter 4 should be at a low level, with higher level, overall interpretations reserved for Chapter 5.

The text should tell a story and teach the result in an order that will be intuitive, interesting, and easily understood by a reader not previously informed about the subject. The text should highlight and emphasize what is most important. It should present more briefly the less important results. Deciding which results are most important should be based on consideration of: (a) the epistemology, theoretical foundation, or conceptual framework that guided the study, (b) the main questions, hypotheses, or conjectures of the research; (c) the magnitude and statistical significance or cross-validation of results, effect size as well as any necessary post hoc tests, as well as when results were strongly predicted and not found, which is also an important finding; (d) the consistency of the results across multiple measures of a construct and across similar constructs; and (e) the potential implications for theory, knowledge, practice, policy, and future research. Do not bury the reader in a flood of computer-generated statistics. That is likely to confuse them and make nothing memorable. Important results should generally be shown in a table, chart, or graph and mentioned in the text. They may also be illustrated with an example or two. Less important results might be shown in a table, but not mentioned in the text, or presented briefly in the text and not shown in a table or graph. If there are less important results whose complex details may be of interest to a few people, put those results in an appendix and have the text briefly reference the appendix.

Standardize key terminology in this chapter and throughout the dissertation. While the use of synonyms for key concepts and variables can minimize irritating repetition, it may also leave readers unsure whether the differing terms represent somewhat different things.

The results need to be reported in sufficient detail to justify any subsequent conclusions and recommendations, which are normally reported in Chapter 5. When the student sits down to write Chapter 4, they should review both the guidelines for it herein and the guidelines below for Chapter 5. Then, as the student begins to write Chapter 4, they should keep a separate list of points that might be discussed in Chapter 5.

The subsections indicated below are about various aspects of the reported results and would not be used as subheadings in Chapter 4.

4-A Organization. Generally, the results should be presented in the order in which the research questions or hypotheses (if relevant) were stated in 3-B above. If data on the setting of the study or demographics are not needed to answer the research questions or test the hypotheses, they are usually presented near the beginning or at the end of the chapter. Note that a good order for items in an interview or survey will often not be a good order for presenting the results. The results should be ordered so that they can easily be understood by a reader naive to the subject.

4-B Text. The text should focus on the most important results and devote less attention to the less important results.
Results from Numeric Data: All results should be indicated, but not necessarily reported individually. For instance, if the student did a series of analyses relating the outcomes to demographic characteristics and there were no statistically significant results and that was not surprising, it may be preferable to say that in one sentence rather than report each of those individual results. The text should also note patterns and inconsistencies among the various results. The student should make sure to briefly report response rates and item-completion rates for each data-collection effort.

Results from Non-Numeric Data: The critical challenge for most qualitative inquiry is distilling down hundreds of pages of notes or transcripts to a manageable presentation for readers, most of whom will be less engrossed in the topic than the student has been. The text should focus on the most important results and devote less attention to the less important results. It is common in qualitative research to report chunks of the raw data. These should be used judiciously and selectively to aid in the presentation of the important results. The chunks should be shortened as much as possible while still illustrating the intended points. A few short examples will generally be more convincing than one long example. Make sure that the reporting does not violate representations made in the Informed Consent materials. The text should reveal both patterns and inconsistencies in the results.

4-C Reporting Statistics. Mean values should almost always be accompanied by their standard deviations, and the “n”s (unless the “n” is consistent for all analyses). For main results from numeric data, it is desirable to report both the “p values” (of statistical significance) and indications of the magnitude of the results, including mean differences and effect sizes indicated by omega squared, r squared, etc. When results are not significant, discuss whether low power of the statistical analysis may have obscured real differences or relationships. Descriptive statistics of frequencies and correlations may be used to summarize coded narrative or non-numeric data derived from field notes and transcripts. Usually it will be inappropriate to report statistical significance for the results of qualitative analysis because the sample size is unlikely to meet the assumptions of statistical significance.

4-D Tables, Graphs and Charts. Tables are a good way to present many results in a condensed format, but most people find large tables of numeric data overwhelming, so the text should highlight the most important results. The student might also bold the most important results in the table. Graphs and charts naturally highlight results, if kept reasonably simple and presented well. In every case, there should be preceding text introducing a table, graph, or chart. There may also be text afterward, discussing additional points. Tables, graphs and charts should be formatted in accordance to APA formatting guidelines.

For presenting results from qualitative analysis of non-numeric data, summaries of coding derived from field notes and transcripts may be presented in tables, graphs, and charts. In every case, there should be text before each such presentation introducing it and highlighting the most important findings. There may also be text afterward, discussing additional points.

4-E Raw Data. Raw numeric data for individual participants is usually not reported in the dissertation, unless there were only a small number of participants. Some illustrative quotes are, however, often included although full transcripts are not. Make sure that the use of quotes does not violate representations made in the Informed Consent materials. This seems most pertinent for mixed methods.
studies where the researcher may have open-ended responses. When the full data set can be printed on a few pages, it may be included in an appendix.

**Note:** The APA Manual indicates that raw data should be kept for at least five years, and that the researcher is generally obligated to make their data available to others for reanalysis.

**Chapter 5: Interpretations, Conclusions and Recommendations**

This is the chapter in which the student gives meaning to the results. It reflects the researcher’s interpretation of the findings as they relate to the research questions and relevant literature. Results should, when appropriate, be tied to past theory, research, policy, and practice and extrapolated to future theory, research, policy, and practice. Chapter 5 is a time for imagination and boldness, but with scholarly caution. The interpretations, conclusions, and recommendations must be grounded in the study and are more credible if also based on prior literature.

Chapter 5 is often the weakest one in the first draft of the completed dissertation. Students often are exhausted from the prior work and are rushing to finish Chapter 5 by a deadline. They usually fail to appreciate that Chapter 5 requires a change in mindset. Chapters 2, 3, and 4 require the student to progressively narrow the focus and then Chapter 5 requires them to broaden their perspective.

Students should try to take a break of at least several days after completing Chapter 4 before they start writing Chapter 5. Prepare for writing Chapter 5 by reading the guidelines below; the statement of the problem, significance, and limitations in Chapter 1; the literature review in Chapter 2; the entirety of Chapter 4; and the notes made when writing Chapter 4 of points that should be included in Chapter 5.

The subsections indicated below are of the common components of Chapter 5 and not necessarily the subheadings of the chapter.

**5-A Opening.** Begin with a very brief summary of the problem addressed and the main results of the student’s research.

**5-B Interpretation (Discussion of Findings) and Conclusions.** The results should be interpreted in light of the full set of results, the applicable literature, the theoretical foundation or conceptual framework used, and the limitations of the study and literature. What do the results mean and what do they not mean? What are the possible causes of the results? What are the possible consequences of the results?

When addressing these questions, it is useful to distinguish what was learned with reasonable assurance, what was suggested only tentatively, and what was not learned. When the evidence is overwhelming, make these statements authoritatively. When the evidence is only suggestive, add caveats to the statements such as, “The results suggest ...,” “It appears ...,” or “It could be that...” Informed speculations are appropriate and useful in the interpretations, as long as the researcher signal the reader that they are speculating.

The interpretation of statistically significant and large results is usually straightforward. Interpretation of statistically significant and small results is often bungled by doctoral students and even sometimes by
mature scholars. Statistical significance only means that some association or difference probably (with a small chance of error) exists in the population, NOT that it is important. Statistically significant small associations or differences may be of little or no use for organizational or programmatic purposes. On the other hand, if an expensive program or structure has provided little improvement, it may be important to know this so that efforts are made to improve the program or structure or to redirect the resources to better uses.

While statistical significance is rarely tested when analyzing non-numeric data, the underlying principles expressed in the above paragraph are applicable. It is important to assess the magnitude of the results. Small results may be useful for refining theory or informing management, but they should not be touted as means of making large improvements in practice.

Conclusions are generalizations and contextually grounded statements (in the case of qualitative inquiry) that tie back to the existing literature. The conclusions may be about the problem that was addressed or about theory, conceptual frameworks, policy, practice, or research. Conclusions indicate what is now known when the results and the prior literature are considered together. Conclusions are not the same as research findings/results and should not be a restatement of the findings/results from Chapter 4. A conclusion should be broader and more encompassing than a specific result/finding, and several findings may be incorporated into one conclusion. For each conclusion, the student should briefly cite the results and literature that support it—either before stating the conclusion or after stating it. Double check each conclusion—while some of the results may support a given conclusion, some of the other results may actually contradict it. If the literature reports results similar to those from the student’s studies with different populations or settings that can be a basis for cautious generalization beyond the student’s studied population and setting. On the other hand, if there are no other studies similar to the student, or the other studies’ results contradict theirs, be careful not to over-generalize the results. Conclusions may be included in the Interpretation section or a separate following section.

**5-C Recommendations.** Recommendations are suggestions for action that are based upon the results and the applicable literature, with consideration for the limitations of both. The recommendations can be for modifications or new initiatives in theory, practice, and policy. They can also be for future research—new problems that have become apparent, new research questions raised by the results, and conceptual frameworks and methodologies that seem to hold promise or should be avoided in the future. When formulating recommendations, try to anticipate implementation difficulties and unintended negative consequences. There always can be multiple recommendations for a given purpose, and the first recommendation that is generated may not be the best one. The tone of recommendations can range from tentative to advisory to exhortative, although the latter is inadvisable in dissertations because they are considered the work of neophyte scholars.