PhD Program Manual

University of Maryland
Department of Hearing and Speech Sciences

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TABLE OF CONTENTS

I. Program Overview
II. University (Graduate School) Requirements
II-A. Determination of Full-time Status
III. Departmental Policies and Requirements
III-A. Program Planning Committee
III-A-1. The PPC Meeting
III-A-2. PPC Meeting Outcomes
III-B. Departmental Colloquium
III-C. Teaching
III-D. Writing
III-D-1. Use of Generative Artificial Intelligence for Scientific Writing in Research
IV. Curriculum Requirements
IV-A. Course Credits and Options
V. Admission to Doctoral Candidacy
V-A. The Candidacy Paper
V-A-1. Using a Master's Thesis or AuD Capstone Project as the Candidacy Paper
V-B. The Qualifying Examinations
V-B-1. The Written Qualifying Exam
V-B-2. The Oral Qualifying Exam
V-B-3. Student's Roles and Responsibilities for the Qualifying Exam
V-B-4. Faculty Mentor's Roles and Responsibilities for the Qualifying Exam
V-B-5. Committee Members' Roles and Responsibilities for the Qualifying Exam
V-B-6. Grading the Qualifying Exam: Criteria for Pass/Fail, and Subsequent Actions
VI. Research Requirements
VI-A. The Dissertation
VI-A-1. The Dissertation Committee
VI-A-2. The Dissertation Proposal
VI-A-3. The Final Dissertation and Defense
VII. Mentoring
VII-A. Frequency of Meetings
VII-B. Expectations for other research experiences
VII-C. Co-mentoring
VII-D. Multiple-student mentoring
VII-E. Healthy Mentoring Relationships
VII-F. Authorship Issues
VIII. Hearing and Speech Sciences Department Grievance Policy for Graduate Students
VIII-A. Arbitrary and capricious grading in courses
VIII-B. Arbitrary and capricious grading in Doctoral Qualifying Examinations
VIII-C. Grievance for Graduate Assistants

I. Program Overview

The PhD program in Hearing and Speech Sciences (HESP) is designed to foster the ability to engage in independent research and scholarship in the typical and disordered processes of speech, language, or hearing. Graduate students in the HESP PhD program engage in an integrated set of research experiences and scholarly activities to prepare them for successful careers in academic and research settings.

The PhD program is a mentorship program in which a student works with a faculty mentor or pair of faculty co-mentors to develop and achieve their own research and scholarly goals. Students in the PhD program are involved in research throughout their time in the program. They are encouraged to work with multiple faculty members, including faculty in other departments to gain an interdisciplinary training experience.

Students are expected to complete all HESP Ph.D requirements within 4-5 years of full-time study. Students engaged in joint clinical programs (MA-SLP+PhD or AuD+PhD) will generally take longer, but students must still demonstrate timely progress. Length of stay in the program must not exceed the time frame specified by the Graduate School Catalogue.

This document contains information regarding both university-wide and program-specific requirements for completing the PhD degree. Each student's progress through the program will be individualized and largely shaped by their academic and research interests, as well as the guidance of their mentor(s) and committee(s). While there are some general requirements that apply to all students, this manual also contains several suggested activities and opportunities, the particulars of which will be determined by the student and committee members.

II. University/Graduate School Requirements

University-wide requirements for the PhD degree are defined by The Graduate School and can be found in the Graduate School Catalogue: https://academiccatalog.umd.edu/graduate/policies/doctoral-degrees-policies/#text.

These requirements include, but are not limited to:

1) Advance to candidacy within 5 years of admission to the doctoral program (see Sect. IV)
2) register for a minimum of 12 research credits for the dissertation
3) successfully defend a dissertation or its equivalent
4) enroll in at least 1 credit in the semester of graduation

II-A. Determination of Full-time Status

Full-time registration is formally defined by the University based on a system of "units." Information about units is available at the Registrar's website:

http://www.registrar.umd.edu/current/registration/Full-Time%20Status.html].

Graduate courses numbered 600-897 carry 6 units per credit hour, so a 3-credit course in this series is worth 18 units. Each credit hour of 898 counts as 18 units. Students are full-time if they meet one of the following conditions:

- Registered for 48 units per semester
- Registered for 24 units with 20 hour/week GA position
- Registered for 36 units with 10 hour/week GA position

Students are not required to register for courses in the summer or winter to maintain full-time status. The Graduate School requires students to be enrolled for at least 1 credit in the semester of graduation, so students who plan to graduate in a summer semester must register in that semester regardless of the credits already accumulated.

Students who do not meet these criteria for full-time status are not eligible for university-based graduate funding (such as departmental graduate assistantships or grant-based research assistantships). Full-time status may also be relevant for other forms of external financial aid or health insurance (for instance, some health insurance programs have different rates for dependents who are full-time students), but this is not typical.

The HESP Department has specific additional curriculum and research requirements.

III. Departmental Policies and Requirements

In addition to the curriculum and research requirements detailed in sections IV and VI below, the HESP Department has the following requirements, expectations, and procedures.

III-A. Program Planning Committee (PPC)

During the first year of study, each doctoral student will form a Program Planning Committee (PPC) to help design and plan his or her specific program of study. The primary goal of the PPC is to oversee the student's plan of doctoral study, guide the student towards opportunities relevant to their individual academic and career goals, and ensure satisfactory progress through the program.

Each student's PPC must include:

- The student's mentor(s)
- At least 3 faculty members
- At least 2 tenure-track HESP faculty
- At least 1 tenure-track HESP faculty who is NOT the student's mentor

Students may choose to include more than 3 members on their PPCs and can also adjust the makeup of their PPCs at any time if their needs or interests change as they progress through the program.

III-A-1. The PPC Meeting

PhD students are required to meet with their PPCs for approximately 1 hour at least once per year to discuss the student's progress through the program and agree on a plan of study for the upcoming year. Most students send an online scheduling poll to their PPC members at least 1 month in advance to find times when everyone is available. Students should bring a meeting outline and share it with their PPC prior to the meeting. PPC meeting outline should include a list of accomplishments and activities undertaken during the previous academic year, a description of long-term goals, and a plan of study for the upcoming year. Students should complete a meeting outline and share it electronically with their PPC members prior to the meeting. A PPC meeting outline template that many students use can be found on the HESP Everything site (NB: students are not required to use this particular template).

The PPC Learning Outcome Assessment (LOA) is intended to 1) serve as a benchmark for the student's progress in the program and 2) document the Department's success overall in supporting students' development. The annual PPC LOA provides formative feedback for the student, and the information is used by the Department as aggregate data.

The student leads the PPC meeting through a discussion of accomplishments during the prior year, including completion of coursework, participation in ongoing or completed research projects, written papers, teaching experiences, professional development activities, attendance or presentation at relevant conferences, new networking connections, efforts to obtain funding, and other relevant evidence of progress through the program. The student describes long-term goals (i.e., career aspirations) and proposes an individual plan of study for the upcoming year toward that goal with PPC input. The plan of study includes academic, research, and professional goals that serve the student's long-term goals and/or meet Departmental requirements for the program.

III-A-2. PPC Meeting Outcomes

The PPC will evaluate the student's progress, provide feedback, and approve the plan of study as part of each annual PPC meeting. In order to be judged as having made satisfactory progress, the student must show substantial development in research, coursework, and/or professional skills since the previous PPC meeting. At the end of the meeting, the PPC will ask the student to leave the room so they can privately complete the PPC LOA rubric. After the meeting, the student's primary mentor will discuss the results of the evaluation with the student. The student is responsible for turning in both the completed PPC LOA rubric and the signed meeting outline to the HESP Department's Graduate Coordinator by June of each year.

If a student is not making satisfactory progress toward the PhD degree, the PPC may recommend the student be placed in the category "not in good standing." The faculty may stipulate changes to be made within a specified time frame for the student to be returned to "good standing" in the Department. Students who fail to meet stipulated conditions and who remain in the category "not in good standing" are subject to a recommendation for dismissal from the program.

III-B. Departmental Seminars

HESP PhD students are expected to regularly attend the Departmental seminar series**.** These research or clinically focused seminars are designed to provide students with a greater sense of the breadth and depth of the field and contribute toward students' training in effective scientific communication to an audience of both peers and non-specialists. Students who have advanced to candidacy are strongly encouraged to present their research at one Departmental colloquium per year (either 30- or 60-minutes), particularly if they do not present their research at a national or international conference in that year.

HESP PhD students are also expected to regularly attend the Departmental professional development seminar series. These are meant to provide information about topics that are usually not covered in research training with their mentor(s) but are important for their future careers.

III-C. Teaching

Teaching is the effective dissemination of information to less experienced audiences, and it is an important aspect of academia. Across all career paths, the ability to teach content to diverse audiences is an important skill to master. To develop this ability, HESP PhD students are required to:

1. Attend at least one workshop or seminar at the University Teaching and Learning Program at the Teaching and Learning Transformation Center (TLTC).

They are also strongly encouraged to:

2. Deliver one guest lecture in the classroom and receive formative feedback from a faculty instructor.

3. Write a teaching philosophy statement that describes personal values and beliefs about pedagogy and provides concrete examples of teaching practices used in the classroom and/or lab that illustrate these values. For those without specific teaching experience, they may describe personal values and beliefs about pedagogy and provide examples of teaching practices that embody these beliefs in a pedagogical setting.

Resources for developing teaching materials are available through the TLTC, both on their website and at dedicated workshops (https://tltc.umd.edu/). While TA-ing, teaching independently, or co-teaching a class is not a program requirement, it is strongly recommended for those students who are considering a career in academia. It is also a useful goal for students pursuing other career tracks, since teaching inherently depends on the ability to synthesize broad arrays of information and provide it to others in a learnable format: skills that are necessary for positions in many different fields.

III-D. Writing

A key to conducting good research is the ability to explain ideas clearly and succinctly in writing. This involves accurately synthesizing existing literatures, explaining gaps in current knowledge, isolating barriers to scientific progress, and formulating effective solutions. In this sense, good writing – in long and short formats – is foundational to conducting excellent research. The Department has several writing requirements, e.g., the candidacy paper, qualifying exam, dissertation proposal, and the dissertation itself, which are all described in later sections. In addition, to hone this skill earlier in the program, we strongly encourage students to allocate regular writing time, participate in writing groups within the Department and/or across campus, receive frequent feedback on one's writing, take part in a 1-time course at the Writing Center and/or enroll in courses that provide feedback on writing (e.g., Seminar in Language Processing, Research Methods, Intro to Cognitive Science).

III-D-1. Use of Generative Artificial Intelligence for Scientific Writing in Research

This policy is specifically regarding research documents (e.g., capstones, theses, dissertations, journal articles), and NOT for papers submitted as part of academic coursework.

The goal of scientific writing is to clearly convey your ideas and explain your experiments and results in print in a way that others can understand and replicate. Acceptable scientific documents (journal articles, theses, or dissertations) are a requirement for our programs. Many tools are used to facilitate scientific writing, including a word processor program with spelling and grammar checkers and citation managers. Generative Artificial Intelligence (AI) such as ChatGPT can be used to help write such documents. The policy in the HESP Department is that such computer programs can be used to draft scientific documents, but that the student must carefully edit and revise such documents to ensure their accuracy; in essence, these programs can be used as a starting tool, but not as a final draft. The ability to communicate clearly in writing and oral presentation is an important learning outcome of all of the academic programs. The use of ChatGPT will not replace the training needed to achieve this outcome.

The student must do the following to use such a tool:

1) The mentee is required to discuss with their research mentor and have mutually agreed upon a set of expectations as to how such a tool is used.
2) The student and mentor should have written documentation of that agreement, which will be signed by both mentee and mentor.
3) The student has the primary responsibility to ensure that any written text produced by generative AI is factually correct (e.g., methods reflect methods used in experiments, citations are appropriate for statements). The mentor has a secondary responsibility that the edited text

is factually correct. Finally, any committee member who reads these written documents should be made aware that generative AI was used for drafting the document and should read the document in a manner that might also help correct any factually incorrect statements.
    - In the case that documents are defended or published that have factually incorrect statements, such errors must be fixed. For example, for a journal article, an erratum/corrigendum should be written for the article.
    - Furthermore, it is not an acceptable excuse to say that the mentee/mentor was unaware that factually incorrect statements were made by the generative AI.
4) Since generative AI is viewed as a tool (like a grammar checker), it should not be a co-author on a publication.
5) The suspected inappropriate use of generative AI will be treated similar to a case of plagiarism, and will follow the processes outlined in the University of Maryland Code of Academic Integrity.

IV. Curriculum Requirements

The doctoral program may be viewed as comprising two phases: **pre-candidacy and dissertation**. PhD students in the HESP Department are **expected to advance to candidacy by the end of their third year**, but can take up to their fifth year (see Sect. II for Graduate School requirements).

The requirements to advance to candidacy are:

1. completing most of the coursework (Section IV-A)
2. defending the candidacy project (Section V-A)
3. completing the qualifying exam (Section V-B)

Upon successful completion of the requirements to advance to candidacy, students are considered PhD candidates and move to the dissertation phase of their program (see Section VI). During this phase, they:

1. defend their dissertation proposal
2. research and write their dissertation
3. defend the dissertation

IV-A. Course Credits and Options

All students enrolled in the HESP PhD Program must accumulate 50 credits of graduate-level coursework directed toward the doctoral degree, which could include relevant coursework taken at another university if approved by the Department and The Graduate School. The distribution of these 50 credits is detailed below. PhD students in HESP typically specialize in typical or disordered forms of speech, language, or hearing. Most graduate courses offered by the HESP Department are designed for clinical MA or AuD students, but they may be relevant for PhD students. Seminars within HESP that are designed specifically for PhD students are offered on a rotating schedule. PhD students are encouraged to search for relevant courses available in PSYC, NACS, SLAA, LING, and other germane Departments.

- Core knowledge areas – 6 credits
- Advances in contemporary research – 3-6 credits
- Statistics - 6 credits
- Research design – 3 credits
- Ethics – 2 credits

- Electives – 9-12 credits
- Research – 18 total credits
    - Doctoral candidacy research: HESP 898 (6 credits)
    - Dissertation research: HESP 899 (12 credits)

Program sequences vary greatly depending on a particular student's background and interests. Additionally, specific course offerings change regularly. Therefore, students are encouraged to ask their advisors, PPC members, students in their labs, or students with similar interests for course recommendations. Decisions about courses will be made by students and their advisors.

To enroll in courses, students must meet with their advisors to discuss course selections and then email the HESP Department's Graduate Coordinator to remove the "hold" on registration. Because many courses, particularly statistics courses, have waitlists, students should meet with their advisors, remove the hold, and register as early as possible. Students can view course offerings here: https://app.testudo.umd.edu/soc/

The university does not officially recognize minors at the graduate level, but there are options across campus for students to participate in specialty or certificate programs to demonstrate strength in an area that complements their program of study. Common programs include:

- Measurement, Statistics, and Evaluation (EDMS) Certificate (https://education.umd.edu/academics/programs/certificates/measurement-statistics-certificate)
- Neuroscience and Cognitive Science (NACS) Certificate (https://nacs.umd.edu/students/nacs-certificate-information)
- Language Science Fellowship Program (http://languagescience.umd.edu/lsf)
- University Teaching and Learning Program (https://tltc.umd.edu/university-teaching-and-learning-program-utlp)

V. Admission to Doctoral Candidacy

A HESP PhD student may advance to candidacy upon meeting the following Departmental requirements:

1. Complete the majority of required coursework
2. Complete the Candidacy Project, have the Candidacy Paper approved by the PPC, and present the Project at a Departmental colloquium
3. Pass the written and oral qualifying exams

A student is expected to advance to candidacy by the end of Year 3, but must do so within five years after admission to the PhD program. In addition, **they must advance to candidacy at least six months before the date on which the degree is to be conferred**. It is the responsibility of the student to submit the application (https://academiccatalog.umd.edu/graduate/policies/doctoral-degrees-policies/#text) for admission to candidacy to the Graduate School once all requirements for candidacy have been fulfilled. After the application has been approved, the student will receive an official letter from the Office of the Registrar acknowledging advancement to candidacy. Each semester thereafter, the Registrar will also automatically enroll the student in HESP 899 for 6 credits (108 units).

V-A. The Candidacy Paper

At the end of Year 1, students initiate their own research projects under the close supervision of their faculty advisors, which culminates with the Candidacy Paper. Students may choose to officially propose their Candidacy Projects by presenting a written and oral outline of the planned project to their PPCs for feedback. The research plan for the Candidacy Paper is implemented during Year 2.

The Candidacy Project must be based on significant original independent research. This research must be empirical in nature and must be directed by a faculty member. The director of the Candidacy Project is typically the student's primary mentor in HESP. If the director of the Candidacy Project is not a member of the HESP faculty, there must be a coordinating faculty mentor from HESP. The final version of the Candidacy Project often follow APA style with the structure of a high-quality research publication (e.g., background, methods, results, discussion). The completion of the Candidacy Project must be approved by the PPC.

Students must submit all written documents, including the Candidacy Project proposal paper and the final Candidacy Paper, to the committee at least 2 weeks in advance of the scheduled evaluation to allow the committee sufficient time to read the document.

The student must present the research at a Departmental seminar. The PPC will decide the form of oral defense (open, or both open and closed oral defense). Following the oral defense, the committee will ask the student to leave the room so they can privately determine whether the student achieved a Pass or Fail and complete the Candidacy Paper LOA (found on the HESP Everything site). The evaluation is based on:

- Originality
- Independence of work
- Statistical treatment of data
- Acceptability for publication in a peer-reviewed journal and/or juried professional meeting
- Quality of student's oral defense of the work

The student's primary mentor will discuss results of the evaluation, and the student is responsible for submitting a copy of the Candidacy Paper LOA rubric to the HESP Coordinator of Graduate Studies. Students will be awarded a letter grade or an Incomplete grade can be awarded during the process as feedback to the student. Incompletes will be resolved on the project completion. The Graduate School's policies on incomplete grades are here: https://academiccatalog.umd.edu/graduate/policies/academic-record/#text

V-A-1. Using a Master's Thesis or Au.D. Capstone Project as the Candidacy Paper

Students who completed a Master's thesis or an AuD capstone project may petition the faculty to accept that paper for the Candidacy Paper requirement. Two requirements must be met for the student to petition the faculty:

1. The capstone or thesis must have been completed within the last five years
2. In most cases, the research project will be based on original data that the student has collected, or will be based on data collected as part of a larger project that the student assisted with. Analyses of existing databases that the student did not help collect can also be acceptable, but must still demonstrate sufficient depth of research skill by the student.

Under normal circumstances, case studies, surveys, and literature reviews will not satisfy the criteria for acceptable research for the Candidacy Project. If the PPC accepts the petition, then the master's thesis or capstone project must be formally approved by all members of the PPC.

V-B. The Qualifying Examination

The Qualifying Exam (QE) assesses students' abilities to identify and consume current and historical literature in the field, distill information into main points, identify gaps in knowledge, and propose logical next steps and subsequent research questions. These skills are developed through hands-on practice, and the QE is designed to be a learning process, not just an assessment. The content of each student's

QE is unique, specifically designed to cover topics from the individual's area of interest. All QEs include a written exam followed by an oral exam. Learning outcomes for the QE include aiming to:

1. improve students' understanding of the broader context of their own research
2. improve students' critical thinking in developing a research question and logical ways to address that question
3. improve students' ability to defend their ideas to a critical audience both orally and in writing
4. improve students' ability to express their ideas in writing and to provide a coherent critical message
5. establish a springboard toward completing the dissertation.

The qualifying examination is generally administered in the third year of study, beginning in the fall with completion in the spring. Thus, these exams are *typically* administered after completion of the candidacy research and required courses. However, there is no requirement that the exam wait until coursework or candidacy research are completed. Assuming a typical fall semester start of the PhD program, **the QE process must be initiated is January 30 of year 3, with completion by May 15 of year 3.** (NOTE: this refers to the ***entire*** process, including oral examination; the paper itself is due earlier than this, as described below).

V-B-1. The Written Qualifying Exam

PhD and MA/PhD students may choose from the following options:

1. A broad literature review: A critical review of (primarily) peer-reviewed journal articles in which the student presents an original synthesis of ideas. It is intended to be broad in scope. Students can use this literature review toward their dissertation. The length is expected to be approximately 20-30 double-spaced pages.
2. A grant proposal with an extended literature review: A 1-page Specific Aims, a Background and Significance section expanded to 3 pages, and a Research Strategy section limited to 5 pages. Therefore, the length is expected to be at most 9 single-spaced pages.

AuD/PhD students may take this qualifying exam format or may take a 1-day take-home written QE in the student's research area (plus the completion of the AuD QE). Regardless of the written QE option selected, AuD-PhD students will also complete an oral QE.

All written QEs should have 11-point font (usually Arial, Times New Roman, Georgia, Helvetica, Palatino Linotype), 0.5-1" margins, not including references. The paper can follow APA, AIP, or other similar styles.

Regardless of the option chosen, the written exam is expected to broadly connect different literatures, and thus will NOT mirror typical manuscripts or grant proposals in the field (which often have length restrictions that preclude such breadth). An otherwise strong document that is not sufficiently broad will not receive a passing evaluation.

The written exam should be submitted no later than March 31 of Year 3.

V-B-2. The Oral Qualifying Exam

The oral QE is limited to 1 hour. At the beginning of the meeting, the student is allowed up to 10 minutes to retract or add anything in the written document (e.g., based on the committee's feedback on the written portion), but there is no other formal presentation by the student. The oral QE is an opportunity for committee members to ask the student for clarification of information from the written examination. The committee may ask questions about how the student synthesized the literature or reached

conclusions presented in the written document. The committee may also ask questions about aspects of the reading list or about fundamental ideas that were not addressed in the written document.

The oral exam should be completed no later than May 15 of Year 3.

V-B-3. Student's Roles and Responsibility for the Qualifying Exam

1. At the beginning of Year 3, the student identifies a unique topic and research question(s) to cover in the QE, selects either the literature review or the grant proposal, and discusses these decisions with the mentor.
2. With support from the mentor, the student decides the membership of the QE committee and contacts faculty to ask if they are willing to serve. The members of this committee can be the same as the PPC, or they can be different. The committee must consist of at least three members of the UMD Graduate Faculty, with at least two from HESP (including the mentor).
3. With support from the mentor, the student develops an initial reading list and outline of the written QE with support from the mentor to discuss with the committee.
4. **By January 30 of Year 3**, the student schedules the initial meeting with the committee and shares the reading list and outline at least 1 week (preferably 2 weeks) before the scheduled meeting.
5. The student records the committee's comments, recommendations, and any decisions made during the meeting. The student should also propose a timeline for submitting the written exam and completing the oral exam. The student shares this written record with the committee, along with a revised version of the reading list and outline, for approval.
6. The student reads the literature on the reading list and writes the written exam. The student may speak to the mentor and committee members about any content or questions that arise during the writing progresses, but the document will not be edited by others in any way. The document is expected to be wholly the work of the individual student.
7. **By March 31 of Year 3**, the student submits the written exam.
8. The student receives a grade of pass/fail within 2 weeks after submitting the written exam. After passing the written exam, the student schedules the oral examination. The oral exam should take place approximately 6 weeks after submitting the written document, and no later than **May 15 of Year 3**.
9. The student schedules individual meetings with each committee member to receive feedback on the written exam and guidance on how to prepare for the oral exam.
10. The student brings the application to advance to doctoral candidacy to the oral exam, which can be found on the HESP Everything website. The learning outcome assessment for the PhD Comprehensive Exams are found on the HESP Everything website (https://sites.google.com/umd.edu/hespeverything/program-requirements-graduation/learning-outcome-assessment-loa; written portion and oral portion).
11. After passing the qualifying exam, candidacy project, and coursework requirements, the student submits the application to advance to doctoral candidacy to the Graduate School.

V-B-4. Faculty Mentor's Roles and Responsibilities for the Qualifying Exam

1. The faculty mentor discusses with the student the timeline for scheduling and completing the QE.
2. The faculty mentor meets with the student to review expectations for the written exam and discuss the student's proposed topic, research question(s), content, and choice for the QE.
3. The faculty mentor reviews the reading list and outline with the student prior to the committee meeting and suggests revisions and additions as appropriate.
4. The faculty mentor serves as the chair of the QE committee by leading the initial meeting to review the student's topic, reading list, and outline.

5. The faculty mentor completes the QE Assessment rubric for the written examination and collects grades and QE Assessment rubrics from all committee members.
6. The faculty mentor informs the student of the grade for the written exam (pass/fail).
7. If the student has difficulty with scheduling, the faculty mentor facilitates student appointments with committee members to receive feedback on the written document.
8. The faculty mentor chairs the oral examination meeting and leads the grading discussion with committee members.
9. The faculty mentor informs the student of the grade for the oral exam.
10. When the student passes the QE, the faculty mentor signs the student's application to advance to candidacy.

V-B-5. Committee Members' Roles and Responsibilities for the Qualifying Exam

1. Committee members respond promptly to student requests to schedule the initial meeting, individual meetings, and the oral examination meeting.
2. Committee members provide feedback at the initial meeting on the student's reading list and outline.
3. Committee members complete the QE Assessment Rubric for the written exam (supplemented with comments) and send all written feedback to the student's mentor within two weeks of receiving the written exam.
4. Committee members meet with the student individually to provide feedback on the written exam and discuss areas that might be queried further during the oral examination. Each committee member has the responsibility to meet with the student.
5. Committee members attend the oral examination and provide input to the group rubric.

V-B-6. Grading, Criteria for Pass/Fail, and Subsequent Actions

A standard rubric will be used for grading the written qualifying examination.

The committee will complete a single group QE Assessment rubric following the oral exam. The outcome of the student's performance on the entire QE is either Pass or Fail. A Pass constitutes adequate performance on both written and oral portions of the exam.

A Fail constitutes unsatisfactory performance on either the written or oral portion of the exam, or both. (NB: If the student does not pass the written portion, they will not move on to the oral stage.) If the student fails, he or she will re-take the QE in the same or a different research area, and choose the same or different written option (literature review or grant proposal). The committee can ask the student to re-write any aspect of the exam. The student will re-take the exam in Fall of Year 4. **The initial planning meeting for the QE retake should be held by Sept. 30 of Year 4, and the written and oral exams must be completed by Dec. 31 of Year 4.**

Regardless of the outcome of the QE, the committee should complete the Qualifying Exam LOA rubric. The student's primary mentor will discuss results of the evaluation, and the student is responsible for submitting a copy of the Qualifying Exam LOA rubric to the HESP Graduate Student Coordinator.

VI. RESEARCH REQUIREMENTS

Each student is expected to participate in ongoing research projects throughout the program. Entering students will serve as research assistants in the research program of their faculty advisors. Activities may include collecting data, developing stimuli, and conducting data analyses. Students may be involved in presenting the work at a professional or scientific meeting. Sometimes authorship on

publications results from this research activity. Students may also engage in research activities across departments and/or with off-campus advisors.

There are two primary research requirements within the Department: the Candidacy Research Project (see Sect. V-A) and the Dissertation.

Students can be involved in additional research projects and are strongly encouraged to take advantage of the opportunity to work in established labs within the Department and on campus to conduct as much research as possible during their time as a graduate student. These experiences add to the research skills required to conduct the candidacy and dissertation research. These may include:

- Participating in research-related activities during the first year of the PhD program, and contributing to a variety of research projects throughout their time in the program. Many HESP PhD students have a "first-year research project" that they are primarily leading.
- Presenting at a National or International Conference and/or a Departmental seminar annually after advancing to candidacy (as stated in Section III-B: Departmental Seminars).
- Participating in research-related activities outside of the primary lab or program as part of a lab "rotation" to gain a broader perspective on research in the field. Decisions regarding this experience will involve the student, the PPC, and the director of the proposed lab or project.

VI-A. The Dissertation

After admission to candidacy, the student is required to complete at least 12 hours of dissertation research in HESP 899 (see Section IV-A: Course Credits and Options). The doctoral dissertation is the primary evidence of mastery of a field of study: it represents significant original research of comparable quality to current research in the field. The student will select a dissertation topic, formulate experimental questions, propose a research plan, conduct the dissertation research, and write the final dissertation.

VI-A-1. The Dissertation Committee

The student chooses a primary mentor to provide guidance throughout the dissertation project. The primary mentor, who will become the chair of the dissertation committee, should be a full-time member of the HESP Department who holds regular membership on the Graduate Faculty.

During preparation of the dissertation proposal, the student and the primary mentor select members to serve on the dissertation committee. Members of the dissertation committee may or may not include the same members of the PPC. The dissertation committee includes at least 5 members of the Graduate Faculty, 3 of whom must be Full Members (tenured or tenure-track faculty with duties in teaching and research). The committee is headed by the primary mentor and must include at least 2 other tenured or tenure-track HESP faculty. One member of the committee (a tenured faculty from outside of HESP) must be appointed and approved as the Dean's Representative. Other committee members may be from outside the Department, or outside of the University, but any faculty member that is not a regular member of the Graduate Faculty must go through a formal appointment process before serving on a dissertation committee.

VI-A-2. The Dissertation Proposal

The dissertation proposal is a formal written document that contains, at a minimum, the following four elements:

1. A statement of specific aims and experimental questions
2. Background and rationale for the experiments, including a critical review of relevant literature
3. A detailed description of methodology and proposed data analyses
4. Pilot data showing feasibility for some to all of the proposed studies

Students are encouraged to write the dissertation proposal as a prelude the dissertation itself. One option is to write it in the form of a grant proposal following requirements of the PHS 398 grant application (https://grants.nih.gov/grants/funding/phs398/phs398.html) or an equivalent federal grant application to allow students to focus straightforwardly on framing their proposal in terms of aims, questions, experimental prospectus, etc. An alternative is to write the introductory chapter, each of the (typically three) experiments (including their own introduction, methods, and preliminary data). There is no correct approach for every student, so those at the proposal stage should discuss this with their research advisor(s). Students should also keep in mind that the final dissertation must meet Graduate School requirements for doctoral dissertations, which is different from a typical grant application. The written proposal should be submitted to the members of the dissertation committee at least two weeks prior to a scheduled proposal evaluation meeting. At the proposal evaluation meeting, the student presents an oral summary of the research project and answers questions from the committee. Approval of the dissertation proposal requires a unanimous vote from the committee. The number of times that the student meets with the dissertation committee will vary. The committee completes the Dissertation Proposal LOA rubric (from the HESP Everything site) at the dissertation proposal meeting. The student's primary mentor will discuss results of the evaluation, and the student is responsible for submitting a copy of the Dissertation Proposal LOA rubric to the HESP Graduate Student Coordinator.

VI-A-3. The Final Dissertation and Defense

The written dissertation should follow the Graduate School style requirements (https://gradschool.umd.edu/sites/gradschool.umd.edu/files/uploads/DissertationThesis/etd_style_guide_201708.pdf). The Graduate School Catalog details all requirements and deadlines for writing the dissertation, preparing for the oral examination, and submitting the necessary paperwork to graduate (https://academiccatalog.umd.edu/graduate/policies/doctoral-degrees-policies/)

The final draft of the dissertation must contain the following elements:

1. A statement of the problem and experimental questions
2. A detailed review of the literature
3. A detailed description of the methodology
4. Results
5. A discussion

The written document must be submitted to the members of the dissertation committee at least two weeks prior to the dissertation defense. Approval of the dissertation and its defense requires a unanimous vote from the committee. This committee must complete the Dissertation Paper LOA rubric and the Dissertation Defense LOA rubric (also found on HESP Everything). The student's primary mentor will discuss results of the evaluation, and the student is responsible for submitting a copy of the Dissertation LOA rubrics to the HESP Graduate Student Coordinator. Students will be awarded a letter grade at the end of the process, but an Incomplete will be awarded in the interim semesters for HESP 899 until project completion.

VII. MENTORING

A major component of a PhD program is the relationship between the student and their faculty mentor(s). This two-way relationship is most successful when both parties approach the process with similar expectations. To facilitate healthy mentoring relationships, the Department provides the following resources:

1. A description of different approaches to mentoring (see below)
2. General advice on mentoring (based on a brochure developed by Gaelle Kolb of NACS)

3. A template for setting up mutual expectations. While this is required by the Graduate School for paid GAs and RAs, all students and their faculty advisors are encouraged to fill one out regardless of the student's appointment status. Based on student feedback that the SME is designed for first year students, the HESP program has created a version of the SME for students in their second year and beyond. Students should fill one out and review it with their advisors annually, usually in the beginning of the academic year.

We also strongly advise mentors and mentees to read *Nature's Guide for Mentors*.

Mentoring relationships can work in a number of ways, depending on the needs of both parties. The rest of this section describes important considerations for a mentoring relationship.

VII-A. Frequency of Meetings

Some mentors and mentees set up regular weekly or bimonthly meetings; others meet only when necessary. Some mentors and mentees see each other regularly in the lab; others only see each other at scheduled meetings. Different approaches may work best for different students and at different stages of the student's career. The current needs of the student and the best mentoring approach to meet those needs should be discussed as part of a dedicated expectation-setting meeting; however, having regularly scheduled (weekly or biweekly) meetings is often a good approach, particularly early in a student's program.

VII-B. Expectations for Other Research Experiences

In general, the HESP Department encourages students to gain a variety of research experiences; students often accomplish this goal by working with multiple mentors or in multiple labs. Some students may work in multiple labs throughout their graduate training; others may work in one lab, but pursue short-term rotations or participate in other projects with additional faculty. In general, this variety of experiences is encouraged; however, it is important to note that student funding may place important limits on a student's ability to pursue outside experiences. While some funding sources are not tied to particular labs (e.g., fellowships), others are. For example, if a student is being paid as a research assistant on a particular grant, the student must contribute the number of appointed hours to that grant effort, which limits the time that can be spent in other labs. The research goals of the student and the best approach for gaining the desired researcher experiences are best discussed as part of a dedicated expectation-setting meeting. It is particularly important to discuss the requirements of a funded appointment before accepting the position.

VII-C. Co-mentoring

Some students have a single primary mentor; others have a primary mentor, but also spend time in another lab, where they have a secondary mentor. Some students have two co-mentors, and they have either separate or overlapping projects. When there are two mentors, there may be separate meetings/discussions with each mentor, or there may be 3-way joint meetings on a regular basis. In some cases, all meetings are 3-way meetings scheduled regularly every 1-2 weeks to ensure all parties remain well-informed. The best approach to maintaining active communication channels across multiple mentors and the student should be discussed as part of a dedicated expectation-setting meeting that includes all parties.

In some co-mentoring relationships, both mentors are actively involved in the mentee's research training and activities; in others, one co-mentor has minimal lab interaction with the mentee and instead serves more as an outside advisee. This can lead to differing assumptions about the responsibilities each mentor has in the mentee's training. For this reason, it is important to have a frank discussion regarding the division of responsibilities between mentors and identify the roles of each mentor at the

start of the co-mentoring relationship. It is also particularly important that all parties meet as a group on a semi-regular basis (e.g., once a month, but this should be determined by mutual agreement).

VII-D. Multiple-student Mentoring

In some labs, multiple students may work jointly on the same research project; in this situation, there may be meetings with multiple students at once, in addition to individual mentor-mentee meetings. In other labs, more senior students may themselves mentor less experienced students. It is important to discuss these different approaches to mentorship in these hierarchical relationships.

VII-E. Healthy Mentoring Relationships

Finally, it is worth noting that mentorship relationships necessarily involve people with very different degrees of knowledge, and different degrees of "power," particularly when the faculty mentor is providing funding to the student. It is important that both parties feel comfortable discussing their expectations of one another in an open fashion. The mutual expectations template (see link above) is a useful starting point for having such conversations, but these discussions need to continue throughout the mentee's program. In the case of a difference of opinion, it might be useful to consult with the University's graduate student ombudsperson (https://gradschool.umd.edu/about-us/ombuds-office), the Department's graduate student ombudsperson, or other faculty advisors.

VII-F. Authorship Issues

Authorship on projects is a frequent issue that comes up between mentors and mentees. The Department recommends discussing qualifications for authorship and agreeing on the order of authorship at the start of a project. Authorship discussions should be ongoing, because roles and responsibilities may change over the evolution of a project. For example, a student may be highly involved at the start of a project, but then leave that lab, so the project shifts to a different student; alternatively, a student may not have a very large role on a project to begin with but takes on a substantive role as the project progresses. The Department recommends that mentors and mentees complete a written authorship agreement at the onset of a project and revisit this agreement on a regular basis as the project evolves. One example of an authorship agreement can be found on the APA website (https://www.apa.org/science/leadership/students/authorship-paper).

We also recommend that both students and faculty read the APA's statement on authorship, downloadable at the link above, and complete the CITI training module on Responsible Conduct of Research (https://about.citiprogram.org/en/series/responsible-conduct-of-research-rcr/). This module is different from the module on human subjects research, which most labs also require.

VIII. HESP Department Grievance Policies for Graduate Students

If a student has questions regarding departmental policies, or experiences interpersonal challenges with a faculty member, the student is advised to communicate with the faculty member first. If the challenges are not resolved, the student my consult with the departmental chairperson, Dr. Rochelle Newman.

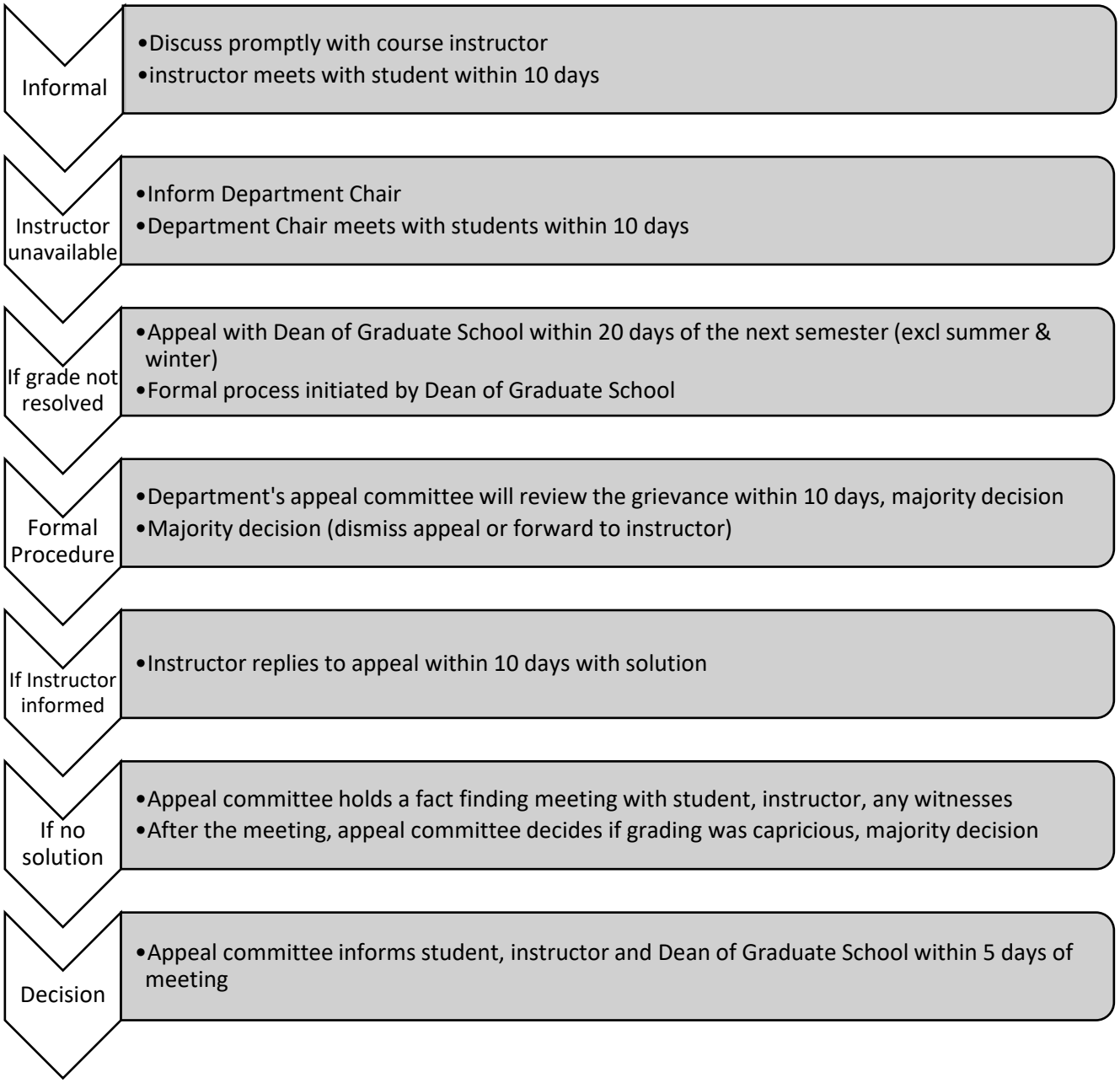
The student may also meet with the departmental graduate ombudsperson, currently Colleen Worthington, or the Graduate School ombudsperson, whose contact information can be found at http://www.umd.edu/ombuds/. The ombudsperson can be consulted for information regarding departmental/university policies and other problems that cannot be resolved through typical channels. An ombudsperson listens to complaints and offers to resolve them in an independent and impartial manner. Communication with the ombudsperson is confidential.

There is also a structured system for what students should do if they feel that they were subject to unfairness (e.g., arbitrary grading in courses or qualifying exams; inequity in assistantships; see below). Complete information for UMD's formal grievance procedures can be found at: https://academiccatalog.umd.edu/graduate/policies/school-policies/

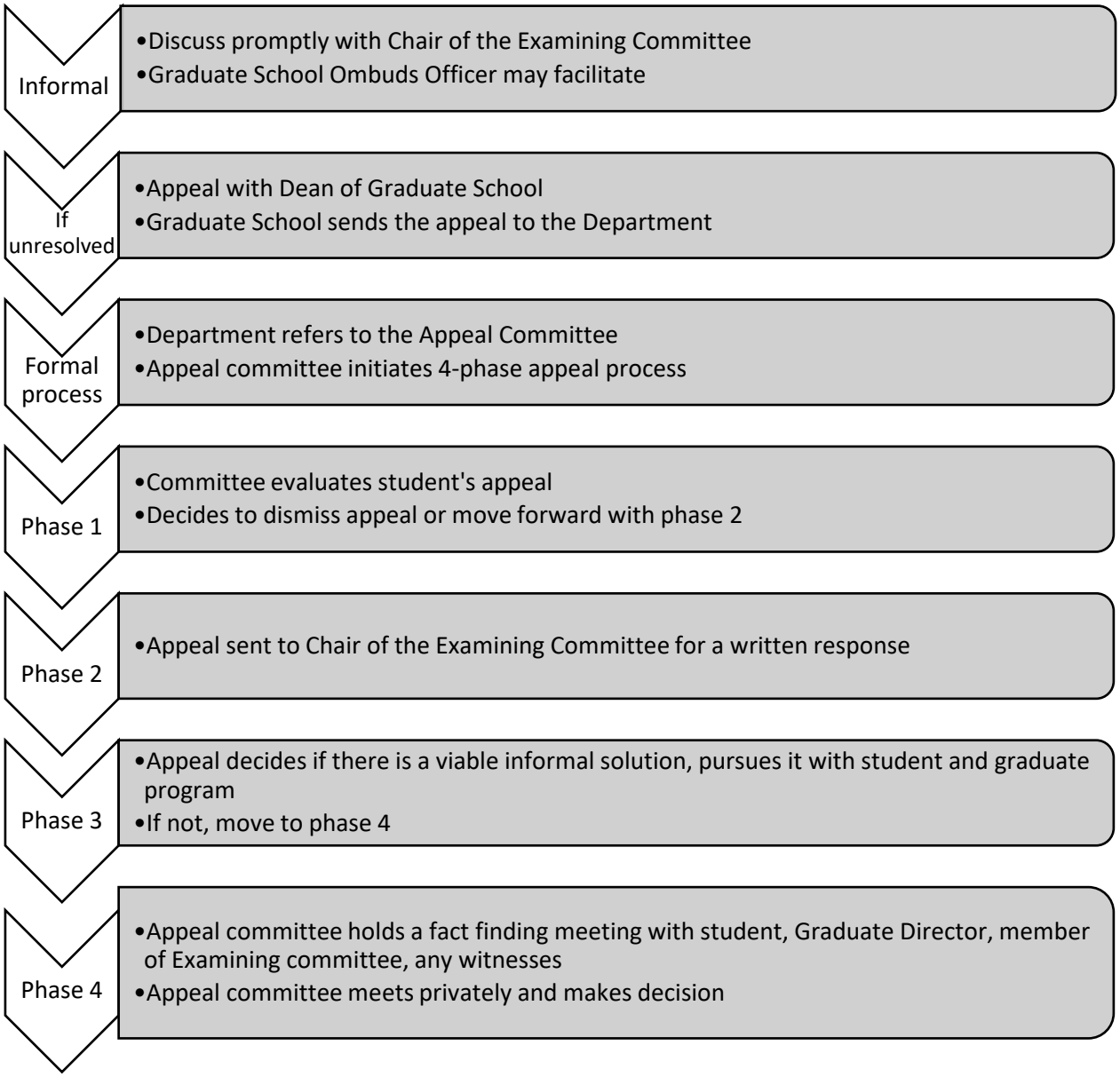
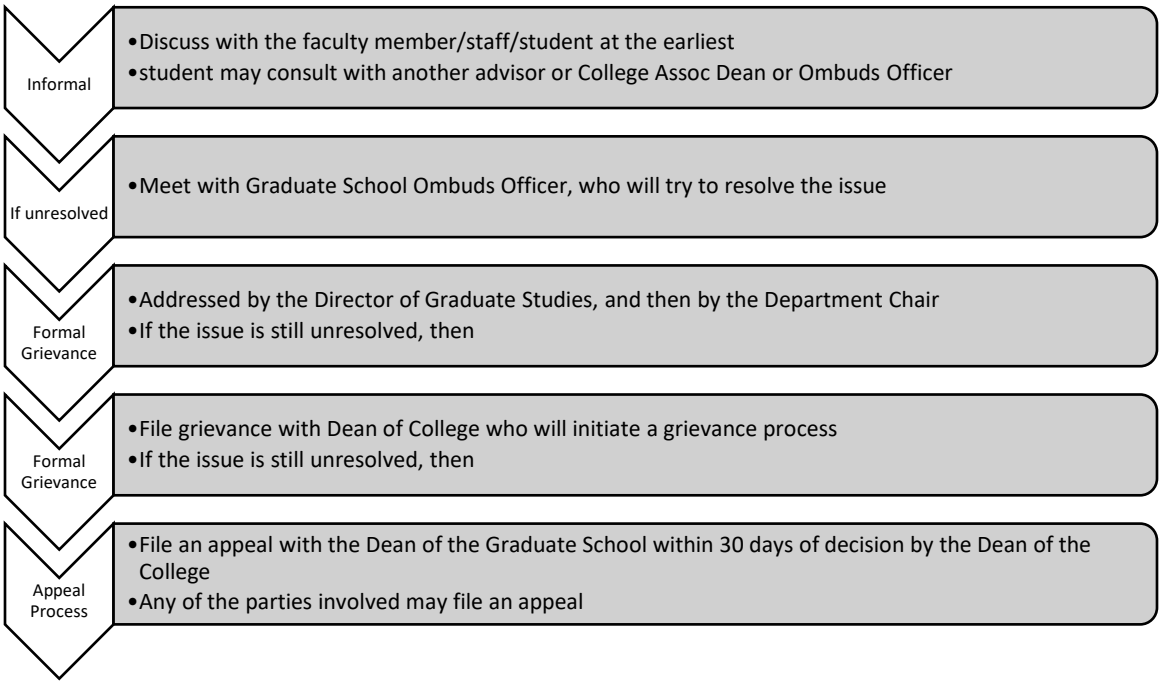
and https://academiccatalog.umd.edu/graduate/policies/policies-graduate-assistantships/#text

The following flowcharts provide an overview of UMD's grievance procedures for students.

VIII-A. Arbitrary and capricious grading in courses



VIII-B. Arbitrary and capricious grading in Doctoral Qualifying Examinations



VIII-C. Grievance for Graduate Assistants