Department of Biobehavioral Health

A Guide to Obtaining an Honors Degree in BBH*

*Includes limited notes for BBH majors who choose to get honors in another department or program.

Welcome to the Biobehavioral Health Honors Program

Whether you entered the Schreyer Honors College as a first-year student or as a second or third-year entry student, we are happy that you chose to obtain your honors degree in Biobehavioral Health (BBH). BBH is an interdisciplinary program with a focus on understanding health and health behaviors from genome to globe. Faculty research interests range widely from a focus on biological processes that influence a variety of health and disease outcomes to interventions that increase health behavior and reduce disease risk. We are confident you will find a faculty member whose interests align with yours.

You do not have to be a BBH student to obtain a BBH honors degree. Likewise, if you are a BBH student, you are not required to work with a BBH faculty member to obtain your honors degree. However, if you work with a faculty member in BBH, we require that your thesis project be biobehavioral in nature. That is, your thesis should address a topic that helps to explain the interplay between biology, behavior, and health.

If you work with a faculty member from another department, the work falls under the jurisdiction of their department. We strongly recommend that you get honors in the field in which you are working (e.g., in HDFS). To do this, you will need to work closely with the honors advisor in your home department AND the department in which you are obtaining honors, as well as your thesis supervisor. The requirements to obtain honors vary from department to department and may require extra coursework. In addition, your diploma will indicate that you graduated with a degree in BBH, "with Honors in Department X," where X is the thesis advisor's department.

Thesis Options

There are typically 3 different options for developing a thesis project. The options are ordered based on the completeness of the research experience, the first being the most complete; however, your thesis supervisor may recommend one over the other given specific conditions. Thesis lengths vary widely, so there are no specific prescriptions for length. Formatting guidelines are available on the Schreyer Honors College website. The various thesis options are listed below, in no particular order:

1. **Primary Data Collection:** This option involves new data collection, and students typically design and conduct their own research study/experiment with their thesis supervisor's oversight. In most cases, this option will require students to complete an application for approval of research involving human subjects, vertebrate animals, and/or biohazardous materials (see the Office for Research Protections website for more information). Students will also be required to complete online training modules to conduct responsible research and handle

biohazardous materials, if applicable. The primary data collection option can be time-consuming, so the earlier you start, the better. Students find this option to be extremely rewarding.

2. **Secondary Data Analysis:** This option involves the analysis of existing data that has already been collected. This is usually data from studies your thesis supervisor has conducted or from studies conducted by larger agencies or institutions (e.g., National Institutes of Health) on a large population. In many cases, students will be required to complete online training modules for the conduct of responsible research.
3. **Comprehensive Literature Review:** This option involves the development of a conceptual paper synthesizing the literature on a topic. The expectation is that this review will push the boundaries of science in a particular area and, in many cases, challenge what is currently known about a specific topic.

Where do I begin?

It is never too early to begin planning for your thesis research. The best research experiences will allow you to (1) work closely with a faculty member, (2) build critical thinking skills, (3) build new research skills, and (4) answer important research questions. The following is a suggested plan of action.

- **Get involved in a research project/lab:** Working on a research project/lab will allow you to experience what it is like to conduct research and help you decide whether you are interested in the topic. There are many faculty members with a variety of active research projects. We typically suggest that honors students review the BBH website. Many faculty members also have a description of their projects/labs on the website, which is an excellent resource for learning more about specific research interests and projects. Once you identify a faculty member you would be interested in working with; we suggest you contact them via email to set up a meeting to learn more about their work and discuss your interest in working with them. Many faculty members will allow students to volunteer or sign up for 496 or 494 credits to work on their projects. You can get involved as early as first year, and you do not need to be an honors student to approach a faculty member about working on their research project. *We suggest that you contact one faculty member at a time.*
- **Identify a faculty mentor/thesis supervisor:** Many of the previous suggestions apply, with a slight twist. When you approach a faculty member as a potential thesis

supervisor, you are expected to have a good idea of the kind of research the faculty member conducts. In addition to exploring their interests on the BBH website, we suggest that you conduct a literature search to better understand the topics of the papers that the faculty member has published. The most recently published papers will give you the best idea of what the faculty member is currently working on. Contact the faculty member to set up a meeting to discuss their research and your interest in working with them. The best student-faculty matches are made when students can identify their own unique, but related, research question as a potential thesis topic. Students seeking second or third-year entry should contact and identify a faculty thesis supervisor before applying to the honors program.

- **Commit and Contribute:** Once you make a match with a faculty member, commit time to learning about their research (including volunteering your time on their projects, if necessary), and make significant contributions. This may include reviewing and presenting an empirical paper at a project meeting, volunteering to assist with organizing supplies, preparing for a study, or conducting a literature review on a topic the faculty member is working on. The needs and responsibilities will vary widely between projects, so it is important to be in close communication with the faculty member to understand the opportunities for you to get involved.

Choosing a Thesis Topic

Each student's thesis-writing experience will vary; thus, the process of choosing a topic will vary. Some faculty members will suggest/choose the student's research question. Others will allow the student to come up with their own topic, with the understanding that the question should align with the faculty member's research interests. Either way, you must work closely with your thesis supervisor to choose your thesis topic. A crucial part of developing a meaningful thesis topic and research question is understanding the literature on the topic, and your specific research question. Important questions to ask include:

1. What is already known on this topic? *This will include the general area (e.g., the prevalence of obesity in the U.S. or which genes have been shown to be related to nicotine metabolism).*
2. Has this specific research question previously been addressed? *If the answer is yes, perhaps you can ask the question in a slightly different way. For example, could you use a different population/sample/strain (males vs. females)? Could you examine a different pathway/mechanism/process? Could you explore the effects on a different outcome? Your thesis supervisor will be an important resource for guidance in this area.*

3. What significant contribution can I make to the literature or science? *This is probably one of the most important questions to ask. The most meaningful (and thesis-worthy) research projects will be those that contribute to science/existing literature. The major question to ask is what new information you can add to what is currently known on the topic. Again, your thesis supervisor can help you with this, but a thorough literature review will help you identify gaps that you can potentially fill.*
4. *What do other theses look like from honors students pursuing similar types of projects? Go to the library's website (https://honors.libraries.psu.edu/) to scan for honors theses and download a few to see what is in a thesis.*

Developing the Thesis Proposal

The specific deadlines and requirements for submitting your thesis proposal are outlined on the "Honors Thesis" page of the Schreyer Honors College website. The thesis proposal is typically submitted in the Spring semester of your junior year, but it can be done earlier. You will work closely with your thesis supervisor to develop your proposal. After the proposal is submitted online, your thesis supervisor and BBH honors advisor will review and either approve or reject your proposal. If your proposal is rejected, you will (in most cases) have an opportunity to revise and resubmit. Failing to submit your thesis proposal by the deadline will likely delay your graduation plans.

Opportunities for Funding of Research Projects

There are limited options available to fund your thesis research. Typically, scholars submit a budget request to the SHC requesting funds for their research. If approved, funding is split evenly between the SHC, College of Health and Human Development, and BBH. Support is usually requested for research/lab materials and supplies, participant payments, and other research-related expenses. See the following Schreyer Honors College website for more information on funding. The Office of Undergraduate Education provides opportunities for students to conduct research with a faculty member during the summer. This research can be used towards your honors thesis. More information is available at the following website: Discovery Grants. There may also be opportunities for travel awards if students submit to present at a conference outside of the university.

Required Coursework, Presentations, and Originality Check

Research Methods Courses: All students obtaining honors in BBH are required to take BBH 310 Honors**: *Research Methods for Studying Biobehavioral Health*. This course is only offered during the Fall semester. It is also strongly suggested that students honors option BBH 411W: *Research and Applications in Biobehavioral Health* in the first semester of their final year.

** This requirement may be waived in extreme cases (e.g., cannot take the course due to a study abroad experience). However, this decision must be made in consultation with both your academic and honors advisor.

Research Credits: In most cases, you will register for 3 honors research credits (BBH 494H) in the Fall and Spring semesters of your senior year. Students working with faculty members outside of BBH will likely register for 494H credits in their thesis supervisor's department (e.g., HDFS 494H). The work required for this course is focused on the honors thesis and includes time spent collecting and analyzing data and writing the thesis. These credits are not intended to be used for activities outside of the scope of the thesis. There may be instances, however, when students may be required to participate in a research activity that is not directly related to the thesis but provides opportunities to learn about research in ways that will ultimately inform the design and implementation of the research project, or thesis writing (e.g., attending a research lecture, or assisting with a procedure on your thesis supervisor's research project). For work outside of the scope of the honors thesis, students should take 496 (Independent Study) or 494 (Research) credits.

Research Presentations: BBH honors students are required to present their research. For Spring graduates, we suggest the BBH Founders Day Exhibition and/or the ***Undergraduate Research Exhibition***, held every Spring. Applications are typically due in January/February, and the exhibition is usually held in March/April. This opportunity allows university faculty, administrators, and students to learn about the excellent work being conducted by BBH honors scholars. It is also an opportunity to learn about the work being conducted by other scholars from departments across the university. The research exhibition is open to all students, not only honors students. Students who graduate in the Fall or Summer will be required to work with their thesis supervisor to identify another opportunity to present their work. This could be at a regional meeting, seminar series, or a 15-minute presentation to an appropriate class. Students should invite their thesis supervisor and honors advisor to their presentation.

Originality Check: The thesis should represent the student's original work. Thus, your thesis must be submitted to Penn State's assessment tool set, Turnitin (http://turnitin.psu.edu), when submitted to the Honors Advisor for approval.

Thesis Timeline

Each student's schedule will differ based on the project. Some students do not start their honors research until the summer before their senior year or in rare cases, in the fall of their senior year. The calendar becomes less flexible as the thesis submission deadline approaches. The following timeline is an idealized guide based on a Spring graduation date:

SOPHOMORE YEAR

1. Meet with your Honors Advisor to get a better understanding of the variety of thesis options.
2. Find a faculty member with compatible research interests or a willingness to work on a unique idea of your own.

JUNIOR YEAR

1. Begin to review the literature on your topic/research question.
2. Develop and finalize your research idea by the end of January.
3. YOUR THESIS PROPOSAL is due to the honors college 1 year before graduation.
4. Develop and submit appropriate applications [IACUC (animal), IRB/CTS (human), and Biosafety (depending on materials)] by the end of April.
5. Submit SHC grant application in April (you can get some small support).
6. Begin collecting data in the Spring/Summer if possible.

SUMMER PLANS

1. Work related to your thesis if possible.

SENIOR YEAR

1. Finalize data collection by the end of November/early December.
2. Introduction, hypotheses, and methods draft completed by the beginning of December.
3. Results: Begin data analyses in November/December. *Remember that writing your results section is easier if you fully document each result as it is generated*. ***We highly recommend honors optioning BBH 411W in the Fall of your senior year. You can work with your thesis data in this course.***
4. Submit Results: finish analyses by the end of January.
5. Final Intro, hypotheses, and methods by the middle of February.
6. Results finalized by the middle of February.
7. Prepare and submit an abstract to BBH Founders Day Exhibition and/or ***Undergraduate Research Exhibition*** in December/January.
8. References: on-going, use the style your advisor desires (start collating your references and building your bibliography early).
9. Tables & Graphs: on-going, ALWAYS DO THIS AS YOU ANALYZE THE DATA.
10. The abstract, appendices (including Academic Vitae), and table of contents should be completed by early MARCH.
11. After your thesis supervisor has approved your thesis, a complete version will be due to the honors advisor approximately 3 weeks before it is due to the Honors College.

12. Thesis submitted to Honors College, generally 3 weeks before graduation.

Frequently Asked Questions

What if I want to get my honors degree in another department?
You can obtain your honors degree in any department as long as your thesis topic is substantively related to that department and your thesis supervisor has an affiliation with/appointment in that department. Different departments have specific requirements for honors scholars. Some departments require scholars to take certain classes, and some of these classes may not be open to non-majors. We advise that you check with the honors advisor in that department early to understand the honors requirements. BBH does not dictate thesis content or requirements for any other program/department.

What is the difference between an honors advisor, an academic advisor, and a thesis supervisor?
In BBH, honors advisors advise students on all matters related to their thesis and research. Honors advisors approve thesis proposals, Annual Academic Plans, honors option forms and honors independent study/research. Academic advisors can help with course scheduling and with questions related to the degree audit. BBH honors scholars must meet with an academic advisor to review the Annual Academic Plan before the honors advisor approves it. The thesis supervisor is the faculty member (within BBH or another department) who you are working directly with to design, develop and carry out your thesis project.

What is the difference between 494H and 496H?
These are independent research (494) or independent study (496) courses. The "H" designation on any course means that research will be conducted, and this typically relates to your thesis research. You will earn honors credit for courses with the "H" designation. We typically advise students to research 494H credits for the semesters when they will be working directly on their thesis.

A friend of mine told me that she got a great deal of writing done on her thesis in BBH 411W. Is this allowed?
BBH 411W is an intensive research course focusing on data analysis and interpretation. We encourage honors students to register for BBH 411W in the Fall of their final year. BBH 411W instructors will typically allow honors students to honors option the course and use their thesis data for class assignments. Decisions on honors options can only be made by the instructor; please consult with him/her for more information.

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