The graduate program in Biobehavioral Health (BBH) is an innovative, interdisciplinary graduate program within the College of Health and Human Development. The focus of the program is on the intersection of biological, psychological, behavioral, social, environmental, and cultural influences on health and disease throughout the lifespan. It is the fundamental principle of our department that an integrative approach to health research and health care holds the greatest potential to advance health. The program is designed to cultivate competence in basic, mechanistic, and applied research that addresses fundamental issues in health and prevention throughout the lifespan; we also provide training in the role of diversity and ethics in research, statistical and procedural research methods, and in university teaching. Graduates are prepared for research, teaching, or policy roles in academia (universities and medical schools), health care settings, private and public research laboratories, and government agencies.

There are special resources available to students in BBH that provide valuable training and support. Several are housed in BBH, including the Biomarker Core Lab and a specialized metabolic kitchen. BBH is also home to the Global Health Minor, which provides training in how to think critically about current public health challenges around the world. Furthermore, BBH is linked with many well-funded centers in the College, including the Prevention Research Center, the Methodology Center, the Center for Healthy Aging, the Clinical and Translational Science Institute, the Huck Institute of the Life Sciences, the Social Science Research Institute, and the Social, Life, and Engineering Imaging Center. State-of-the-art library, teaching, and computing resources are provided by the College and University.

**Admission Requirements**

Applicants apply for admission to the program via the Graduate School application for admission (http://gradschool.psu.edu/prospective-students/how-to-apply). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions (http://gradschool.psu.edu/graduate-education-policies).

Scores from the Graduate Record Examinations (GRE), or from the Medical College Admission Test (MCAT), are required for admission. Applicants should have a minimum grade-point average of 3.00 (A=4.00), an above-average score on the GRE or MCAT, and three supporting recommendations. At the discretion of the graduate program, exceptions may be made to these requirements for students with special backgrounds, abilities, and interests. Admission will be offered to applicants who are the best qualified, in the judgment of the faculty, taking all factors in to account.

Entering students should have a basic background in biological sciences, the behavioral sciences, or a combination of the two. In addition, they should have a basic background in quantitative methods. In exceptional cases, superior students who do not meet these requirements may be admitted provisionally (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-300/provisional-admission), while correcting their deficiencies. This must occur during their first two semesters in the program.

**Degree Requirements**

**Master of Science (M.S.)**

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Requirements. (http://gradschool.psu.edu/graduate-education-policies)

BBH does not offer a terminal Master's Degree. A minimum of 33 credits at the 400, 500, 600, or 800 level is required, with at least 18 credits at the 500 and 600 level, combined. All M.S. degree candidates must complete a formal master's thesis or a master's paper. Candidates selecting the thesis option must complete an additional 6 credits of master's thesis research (BBH 600). Candidates selecting the paper option must complete an additional 6 credits of individual studies (BBH 596). The master's thesis will typically describe original research. The master's paper may describe original research, but may also involve a substantial review of the literature, or a substantial description of a new research-related procedure. The choice of thesis or paper options will be made by the student in consultation with the adviser. The student's advisory committee judges the quality and acceptability of the paper or thesis. This thesis must be accepted by the advisers and/or committee members, the head of the graduate program, and the Graduate School.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BBH 501</td>
<td>Biobehavioral Systems in Health and Development: Theory and Processes</td>
<td>3</td>
</tr>
<tr>
<td>BBH 502</td>
<td>Health: Biobehavioral Perspectives</td>
<td>3</td>
</tr>
<tr>
<td>BBH 503</td>
<td>Biobehavioral Systems in Health and Development: Processes and Integration</td>
<td>3</td>
</tr>
<tr>
<td>BBH 504</td>
<td>Behavioral Health Intervention Strategies</td>
<td>3</td>
</tr>
<tr>
<td>BBH 505</td>
<td>Behavioral Health Research Strategies</td>
<td>3</td>
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12 additional credits in methods individually designed in consultation with and with the approval of their adviser and committee

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<tr>
<td>BBH 600</td>
<td>Thesis Research</td>
<td>6</td>
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</table>

**Thesis Research**

or BBH 596 Individual Studies

**Total Credits** 33

**Doctor of Philosophy (Ph.D.)**

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Requirements. (http://gradschool.psu.edu/graduate-education-policies)
All doctoral students must take the following courses to develop doctoral-level competence in biobehavioral health and one or more related specialized areas:

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<td>BBH 505</td>
<td>Behavioral Health Research Strategies</td>
<td>3</td>
</tr>
</tbody>
</table>

12 additional credits in research methods individually designed in consultation with the student's adviser and Ph.D. committee (and with approval of the PIC of the Graduate Program) 12

Total Credits 27

All doctoral students must demonstrate competency in college-level teaching by completing two semesters in the role of a teaching assistant; the professional development seminar provides support and mentoring to facilitate development of competency in college-level teaching.

**Dual-Titles**

**Dual-Title Ph.D. in Biobehavioral Health and Bioethics**

Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-title-graduate-degree-programs).

**Admission Requirements**

Students must apply and be admitted to the graduate program in Biobehavioral Health and the Graduate School before they can apply for admission to the dual-title degree program in Bioethics. After admission to their primary program, students must apply for admission to and meet the admissions requirements of the Bioethics dual-title program. Refer to the Admissions Requirement section of the Bioethics Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/bioethics). Doctoral students must be admitted to the dual-title degree program in Bioethics prior to taking the qualifying exam in their primary graduate program.

**Degree Requirements**

Biobehavioral Health Ph.D. students may pursue additional training in bioethics through the dual-title Ph.D. program in Bioethics. To qualify for the dual-title degree, students must satisfy the requirements of the Biobehavioral Health Ph.D. program. In addition, students must complete the degree requirements for the dual-title in Bioethics, listed on the Bioethics Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/bioethics). Within this framework, final course selection is determined by the student, their Biobehavioral Health adviser, and their Bioethics program advisor.

**Qualifying exam**

In accordance with Graduate Council policy, there will be a single qualifying examination for both the primary program and the dual-title program. At least one member of the qualifying exam committee must come from the Bioethics program. Faculty members who hold appointments in both programs' Graduate Faculty may serve in a combined role. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed on semester beyond the normal period allowable.

**Comprehensive exam**

In addition to the general Graduate Council requirements for Ph.D. committees (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/phd-dissertation-committee-formation), the Ph.D. committee of a Biobehavioral Health and Bioethics dual-title doctoral degree student must include at least one member of the Bioethics Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. If the chair of the committee is not also a member of the Graduate Faculty in Bioethics, the member of the committee representing Bioethics must be appointed as co-chair. The faculty member (or members) affiliated with the Bioethics Program will be responsible for administering a portion of the comprehensive exam that will require the student to demonstrate an understanding of various theoretical and methodological approaches to bioethics, and an ability to apply them to issues and problems (including, where appropriate, practical problems) in their primary field.

**Dissertation and dissertation defense**

Students in the dual-title program are required to write and orally defend a dissertation on a topic that is approved in advance by their Ph.D. committee and reflects their original research and education in BBH and Bioethics. Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. The dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School.

**Dual-Title Ph.D. in Biobehavioral Health and Clinical and Translational Sciences**

Requirements listed here are in addition to requirements listed in GCAC-208 Dual-Title Graduate Degree Programs (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-208-dual-title-graduate-degree-programs).

**Admission Requirements**

Doctoral students with research and educational interests in clinical and translational science may apply for the Dual-Title Ph.D. degree in Biobehavioral Health and Clinical and Translational Sciences following admission to the Graduate School and Biobehavioral Health graduate degree program. After admission to their primary program, students must apply for admission to and meet the admissions requirements of the CTS dual-title program. Refer to the Admissions Requirements section of the CTS Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/clinical-translational-sciences). Doctoral students must be admitted into the dual-title degree program in CTS prior to taking the qualifying examination in their primary graduate program.

**Degree Requirements**

This dual-title degree program emphasizes interdisciplinary scholarship at the interface of basic sciences, clinical sciences, and human health. Students in the dual-title program are required to have two advisers from separate disciplines: one individual serving as the primary mentor in the graduate program in Biobehavioral Health and another individual serving as the secondary mentor in an area covered by the dual-title program who is a member of the Clinical and Translational Sciences faculty.

To qualify for the dual-title degree, students must satisfy the degree requirements for the degree they are enrolled in BBH, listed above. In addition, students must complete the degree requirements for the dual-
title in CTS, listed on the CTS Bulletin page (http://bulletins.psu.edu/graduate/programs/majors/clinical-translational-sciences).

In accordance with Graduate Council policy, the qualifying examination committee must include at least one member of the Clinical and Translational Sciences Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. There will be a single qualifying examination which will include content from both the Graduate Program in Biobehavioral Health and the Clinical and Translational Sciences programs. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed on semester beyond the normal period allowable.

In addition to the general Graduate Council requirements for Ph.D. committees (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-602-phd-committee-formation), the Ph.D. committee must include at least one member of the Clinical and Translational Sciences Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. If the chair of the committee is not also a member of the Graduate Faculty in Clinical and Translational Sciences, the member of the committee representing Clinical and Translational Sciences must be appointed as co-chair. The fields of Biobehavioral Health and Clinical and Translational Sciences will be integrated in the student’s comprehensive examination. The CTS representative on the student’s Ph.D. committee will develop questions for and participate in the evaluation of the comprehensive examination.

All students are required to conduct dissertation research that contributes fundamentally to the fields of Biobehavioral Health and Clinical and Translational Sciences. Upon completion of the doctoral dissertation, the candidate must pass a final oral examination (the dissertation defense) to earn the Ph.D. degree. The dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School.

**Dual-Title Ph.D. in Biobehavioral Health and Social and Behavioral Neuroscience**

BBH doctoral students interested in having a degree that reflects interdisciplinary training in social and behavioral neuroscience as relevant to the domains of research expertise within BBH (e.g., integrating neuroscience techniques and perspectives to understanding integrative or interactive influences of biological, behavioral, psychological, sociocultural, and environmental variables on health across time scales and levels of analysis), may apply to pursue a dual-title Ph.D. in BBH and Social and Behavioral Neuroscience.

Social behavioral neuroscience reflects the study of how brain development and function influence, and are influenced by, social, environmental, and behavioral variables. The dual-title Ph.D. program provides students with additional training in an integrative neuroscience program in order to enable them to pursue innovative interdisciplinary research with intellectual sophistication.

**Admission Requirements**

Students must apply and be admitted to the graduate program in BBH and the Graduate School before they can be admitted to a dual-title degree program. Applicants interested in the dual-title degree program may note their interest in their applications to BBH. Students must apply and be admitted to the dual-title degree program in Social and Behavioral Neuroscience prior to taking the qualifying exam and must be in good standing in the BBH program. Students admitted to the BBH program will be admitted to the dual-title program in Social and Behavioral Neuroscience upon the recommendation of a Social and Behavioral Neuroscience Program faculty member in BBH.

Additional admissions requirements are listed in the Admissions Requirements section of the Social and Behavioral Neuroscience Bulletin page (https://bulletins.psu.edu/graduate/programs/majors/social-behavioral-neuroscience).

**Degree Requirements**

To qualify for the dual-title degree, students must satisfy the requirements of the Ph.D. in BBH, listed above. In addition, students pursuing the dual-title Ph.D. in BBH and Social and Behavioral Neuroscience must complete the degree requirements for the dual-title Social and Behavioral Neuroscience Ph.D., listed on the Social and Behavioral Neuroscience Bulletin page (https://bulletins.psu.edu/graduate/programs/majors/social-behavioral-neuroscience).

The Qualifying Examination committee for the dual-title degree will be composed of Graduate Faculty from BBH and must include at least one Graduate Faculty member from Social and Behavioral Neuroscience. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. The chair of the qualifying examination committee must be a member of the Graduate Faculty and an affiliated member of the SBN program or an affiliated member may be appointed as a co-chair. There will be a single qualifying examination, containing elements of both BBH and Social and Behavioral Neuroscience. Dual-title graduate degree students may require an additional semester to fulfill requirements for both areas of study and, therefore, the qualifying examination may be delayed on semester beyond the normal period allowable.

In addition to the general Graduate Council requirements for Ph.D. committees (http://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-602-phd-committee-formation), the Ph.D. committee of a dual-title doctoral degree student must include at least two members of the Social and Behavioral Neuroscience Graduate Faculty. Faculty members who hold appointments in both programs’ Graduate Faculty may serve in a combined role. If the chair of the committee representing BBH is not also a member of the Graduate Faculty in Social and Behavioral Neuroscience, the member of the committee representing Social and Behavioral Neuroscience must be appointed as co-chair. It is expected that the outside member of the Ph.D. committee serves as the second Social and Behavioral Neuroscience representative. Exceptions (e.g., having both Social and Behavioral Neuroscience committee members from within the home department) must be approved by the Social and Behavioral Neuroscience Steering committee. The Social and Behavioral Neuroscience representative on the student’s Ph.D. committee will develop questions for and participate in the evaluation of the comprehensive examination.

Ph.D. candidates must complete a dissertation on a topic that reflects their original research and their education in both BBH and Social and Behavioral Neuroscience. In order to earn the dual-title Ph.D. degree, the dissertation must be accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School, and the student must pass a final oral examination (the dissertation defense).

**Student Aid**

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding (http://
Biobehavioral Health (BBH) Course List (https://bulletins.psu.edu/university-course-descriptions/graduate/bbh)

Learning Outcomes

KNOW:

1a. Graduates will be able to demonstrate mastery of the literature regarding biological, psychological, sociocultural, ethical, behavioral, and environmental influences on various health behaviors;

1b. Graduates will be methodologically proficient so as to comprehend the results of a broad scientific literature encompassing these areas.

APPLY/CREATE:

2a. Graduates will be able to review the relevant literature and generate ideas for novel research questions;

2b. Graduates will be able to design a research plan to answer novel research questions that move the field forward and carry it out to completion.

COMMUNICATE:

3a. Graduates will be able to write articles suitable for publication in top tier peer review journals;

3b. Graduates will be able to present the results of their research in a clear and concise manner to an audience in a professional society meeting;

3c. Graduates will be able to write research grant proposals to external funding agencies (e.g., NIH, NSF, or foundations).

THINK:

4. Graduates will be about to think critically about research regarding biological, psychological, sociocultural, ethical, behavioral, and environmental influences on various health behaviors.

PROFESSIONAL PRACTICE:

5. Graduates will demonstrate leadership, professionalism, and the highest ethical standards.