

# Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

## Department of Exercise & Nutrition Sciences PhD Exercise Physiology & Applied Nutrition 2020-2021

Note: All curriculum revisions will be updated immediately on the website  
<http://www.publichealth.gwu.edu>

### Program Director

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### Mission

The mission of the multidisciplinary Exercise Physiology and Applied Nutrition PhD program is to educate individuals in physical activity and nutrition, grounded in science, with a translational focus to research that combines a mutual appreciation for physical activity and nutrition in the promotion of health from the molecular to the community setting. Our scholars will be rigorously trained in science, including the use of sound methodological approaches and innovative thinking that leads to the advancement of knowledge that can be translated into real-world health applications of physical activity and nutrition.

### Program Requirements

All Milken Institute School of Public Health (SPH) EXNS PhD students are required to have a master's degree in a relevant field. Students will take specific Foundational and Research Methods Coursework (10 credits), Core Courses (16 credits), Tailoring Courses (specific electives) (minimum 8-11 credits) and Dissertation Preparation and Research (11-14 credits).

### Competencies

Students in the EXNS PhD program will be able to:

1. Develop a mutual appreciation for physical activity and nutrition in the promotion of health;
2. Identify a wide range of integrative exercise and nutrition science concepts, theories, and methods;
3. Interpret general and specialized concepts and methodologies for scientific research in exercise and nutrition sciences;
4. Apply general, specialized, and advanced concepts and methodologies for scientific research in exercise physiology or applied nutrition;
5. Utilize sound methodological approaches and innovative thinking that will lead to new scientific knowledge that can be translated into real-world health applications in physical activity/exercise and/or nutrition
6. Identify how to identify and appropriately work with communities from which research participants are drawn and/or those who are most impacted by the conduct and results of the research;
7. Conduct independent research studies, analyze data and communicate results;
8. Apply guidelines for ethical research practice and responsible conduct of research

9. Disseminate research findings to scientific and lay audiences;
10. Develop the capacity to work multidisciplinary and within interprofessional settings, e.g. in collaboration with basic, clinical, and social and behavioral scientists in academia and research settings, and others in government, non-profit community settings, think tanks, and the private sector.

**Course Distribution Summary**

- Total Credits = Minimum 48
- Required Foundation Courses and Research Methods = 10 credits
- Required Core Courses = 16
- Tailoring Electives = 8-11 credits minimum  
Dissertation Preparation and Dissertation = 11-14 credits

**UNIV 0250- GRADUATE TEACHING ASSISTANT CERTIFICATION. SUCCESSFUL COMPLETION OF THIS CERTIFICATION IS REQUIRED PRIOR TO TAKING ON ROLE AS TEACHING ASSISTANT. THIS ONLINE CERTIFICATION IS PAID FOR BY GW. THE 1-CREDIT RECEIVED FOR THIS CERTIFICATION IS NOT COUNTED TOWARD THE 48-CREDIT PHD PROGRAM.**

**Required Foundational and Research Methods Courses  
10 Credits**

		<b>Credits</b>	<b>Semester(s) offered</b>	
<b>Research Methods</b>				
EXNS 6204	Biostatistics and Research Design	3	Fall	
PUBH 6003	Principles of Epidemiology	3	Fall/Spring/Summer	
EXNS 8102	Writing a Research Grant Application	1	Summer	
Varies 8XXX	Advanced Statistics/Methods Course**- see list below	3	Fall/Spring	
PUBH 6080	Pathways to Public Health ( <i>non-MPH grads</i> )	0	Fall (Year 1)	

**Required Core Courses  
16 Credits**

		<b>Credits</b>	<b>Semester(s) offered</b>	
EXNS 6209	Advanced Concepts in Nutrition Science	3	Fall/Spring	
EXNS 6810	Advanced Metabolism	3	Spring	
EXNS 8106	Advanced Concepts in Applied Human Physiology	3	Spring	
EXNS 8108	Lab Techniques in Human Physiology & Nutrition	3	Spring	
EXNS 8110	Doctoral EXNS Seminar	2	Fall/Spring	
PUBH 8116	Communicating Research Results	2	Spring	

**Example Tailoring Courses  
8-11 Credits Minimum**

		<b>Credits</b>	<b>Semester(s) offered</b>	
<b>Epidemiology Focus</b>				
EXNS 6208	Physical Activity: Physiology and Epidemiology	2	Spring	
PUBH 6235	Epidemiology of Obesity	1	Summer	
PUBH 6237	Chronic Disease Epidemiology	2	Fall/Spring	
PUBH 6241	Nutritional Epidemiology	3	Fall	
PUBH 6242 + PUBH 8242	Clinical Epidemiology & Public Health: Reading the Research + Advanced Topics: Clinical Epi	2+1	Spring	
PUBH 6244 + PUBH 8244	Cancer Epidemiology + Doctoral Topics: Cancer Epidemiology	2+1		
<b>Exercise Physiology Focus</b>				
EXNS 6202	Advanced Exercise Physiology I	3	Fall	
EXNS 6203	Advanced Exercise Physiology II	3	Spring	
EXNS 6221	Science and Theory of Training	3	Spring	
BIOC 6221	Proteins, Pathways, and Human Health	4	Fall	
BMSC 8212	Systems Physiology	3	Fall	
<b>Applied Nutrition Focus</b>				
EXNS 6242	Nutrition through the Lifecycle	2	Fall	
PUBH 6612	Food Systems in Public Health	2	Fall	
PUBH 6613	US Food Policy and Politics	2	Spring	
PUBH 6199	Topics: Food and the Global Environment	1	Varies	
PUBH 6482	International Food and Nutrition Policy and Programs	2	Spring	

<b>Social &amp; Behavioral Focus</b>				
EXNS 6207	Psychological Aspects of Sport and Exercise	3	Fall	
PUBH 6620	Designing Healthy Communities	2	Spring	
PUBH 6007	Social and Behavioral Approaches to Public Health	2	Fall/Spring/Summer	
PUBH 6550	Maternal and Child Health I	3	Fall	
PUBH 8434	Behavioral Medicine and Public Health	3		
PUBH 8408	Advanced Topics: Health Behavior Research & Practice Applications	3		
<b>Additional Relevant Offerings</b>				
PUBH 6530	Qualitative Methods in Health Promotion	2	Spring	
PUBH 8417	Qualitative Research Methods & Analysis	3	Spring	
PUBH 8416	Study Design & Evaluation Methods	3		
MLS 6145/6146	Advanced Clinical Biochemistry I & II	6 (3 each)	Fall	
BIOC 6222	Biochemical Genetics and Medicine	3	Spring	
	<b>May Add Additional Tailoring Courses Approved in Advance by Advisor</b>			
<b>Dissertation Research 11-14 Credits</b>				
		<b>Credits</b>		
PUBH 8435	Dissertation Proposal Development for Exercise and Nutrition Doctoral Students	2		
EXNS 8999	Exercise Physiology or Applied Nutrition Dissertation	9-12		
<b>Total</b>		<b>48</b>		

**\*\*Approved Advanced Statistics/Method Courses to fulfill requirement**

**(other courses may be selected with advanced approval of program director or advisor):**

*Prerequisites must be satisfied or permission from course instructor must be obtained prior to registration.*

<b>Course #</b>	<b>Course Title</b>	<b>Credits</b>	<b>Semester(s) offered</b>	
PUBH 8364	Quantitative Methods	3	Spring	
PUBH 8417	Qualitative Research Methods & Analysis	3	Spring	
PUBH 8418	Applied Statistical Analysis	3	Spring	
PUBH 8419	Advanced Analysis & Dissemination	3	Spring (even years)	
EDUC 8122	Qualitative Research Methods	3	Fall	
EDUC 8131	Case Study Research Methods	3	Spring	
EDUC 8140	Ethnographic Research Methods	3	Spring	
EDUC 8171	Predictive Designs and Analysis	3	Fall	
EDUC 8172	Multivariate Analysis	3	Spring	
EDUC 8173	Structural Equation Modeling	3	Spring	

**Graduate Teaching Assistant Certification (UNIV 0250).** Successful completion of this certification is required prior to taking on role as teaching assistant. This online certification is paid for by GW. The 1-credit earned for this certification does not count toward the PhD degree program requirements.

**Pathways to Public Health course (PUBH 6080).** As an accredited School of Public Health, curriculum in all graduate academic programs must provide a foundation in public health. If a student already holds a Master of Public Health degree from an accredited program or school of Public Health, this course will be waived. Otherwise, this zero-credit, free, online course should be completed within one year of matriculation.

**Tailoring courses.** Different tailoring courses may be considered. Seek advisors approval.

## ADVISING TIPS

**Graduate Teaching Assistant Certification (UNIV 0250).** Successful completion of this certification is required prior to taking on role as teaching assistant. This online certification is paid for by GW. The 1-credit earned for this certification does not count toward the PhD degree program requirements.

**Pathways to Public Health course (PUBH 6080).** As an accredited School of Public Health, curriculum in all graduate academic programs must provide a foundation in public health. If a student already holds a Master of Public Health degree from an accredited program or school of Public Health, this course will be waived. Otherwise, this zero-credit, free, online course should be completed within one year of matriculation.

**Tailoring courses.** Different tailoring courses may be considered. With advisors support, alternatives will be considered. Above are simply examples.

## Graduation Requirements

**1. Integrity Quiz & Plagiarism.** In the first semester as a PhD student, all students should review the George Washington University's Code of Academic Integrity, take the quiz and submit documentation to the School of Public Health's Office of Student Records.

**2. CITI Training requirement.** All students are required to complete training regarding human subject protection regulation and the Health Insurance Portability and Accountability Act of 1996 (HIPAA). To fulfill this requirement, you must complete the Collaborative IRB Training Initiative (CITI) Course in The Protection of Human Research Subjects.

**3. Credits.** Successful completion of all required coursework.

**4. Grade point average.** A minimum overall grade point average of 3.0.

**5. Comprehensive examination.** After completion of course requirements, students will take a comprehensive exam based on the core courses, within one month of completion of all core coursework. Upon successful completion of the exam, students officially enter the doctoral candidacy phase of the program. The exam may be repeated, up to one time, upon approval.

**6. Proposal defense.** Doctoral candidates prepare a written dissertation research proposal with guidance from their dissertation advisor and committee. Each doctoral candidate gives an oral presentation and defense to the committee who determines the student's readiness to commence the dissertation.

**7. Dissertation.** Doctoral candidates are required to conduct original research on a contemporary public health problem or issue relevant to the disciplines of exercise physiology and/or nutrition. Students are

guided by existing exercise and nutrition science data and theory in formulating their dissertation questions. Research must be primarily analytic, community- or laboratory-based. The student gives an oral defense to the dissertation committee.

**8. Professional Enhancement.** All GWSPH students must complete a minimum of 8 hours of professional enhancement activities. This can be accomplished through participation in seminars, workshops, professional meetings and other appropriate functions. Documentation of attendance to the event should be submitted to the SPH Office of Student Records.

**9. Timeline.** The degree must be completed within seven years of matriculation. Degrees are awarded each semester, though formal commencement ceremonies, including the doctoral hooding ceremony, only occur in May. Students are eligible to participate in graduation activities only after they have completed all degree requirements, including a successful dissertation defense and have no financial obligations to the University.