Milken Institute School of Public Health
THE GEORGE WASHINGTON UNIVERSITY

Department of Exercise & Nutrition Sciences
PhD
Exercise Physiology & Applied Nutrition
2023-2024

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 (EPAN) PhD program is to educate individuals in physical activity and nutrition science, using a translational approach that focuses on the roles of physical activity and nutrition in human health, from the molecular mechanisms to the community setting. Our scholars will be rigorously trained in science, including the use of sound methodological approaches and innovative thinking in order to advance 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 completed a master's degree in a relevant field. Students will take specific PhD Required Core Courses (10 credits), Required Foundational Courses (15 credits), Tailoring Courses (specific electives, minimum 12-15 credits) and Dissertation Research (9-11 credits).

Competencies

Students in the EPAN PhD program will be able to:

1. Integrate physiological and nutritional science concepts as they relate to disease prevention and overall health.
2. Evaluate valid methodological approaches in exercise physiology and nutrition science that can be utilized in laboratory and community-based research.
3. Analyze and critically evaluate data in exercise physiology and nutrition research.
4. Interpret and communicate exercise physiology and nutrition research results to scientific and public health audiences.
5. Develop and analyze hypotheses that can be tested by appropriate quantitative or qualitative research designs and methodologies.

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Program at a Glance

Course Distribution Summary

- Total Credits = minimum 48
- Required Core Courses = 8 credits
- Required Foundation Courses = 15
- Tailoring Electives = 12 credits minimum
- Dissertation Preparation and Dissertation = 11-13 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 PhD Program Core Courses 8 Credits				
		Credits	**Semester(s) offered**	
PUBH 6421	Responsible Conduct of Research	1	Fall/Spring	
PUBH 8099	PhD Seminar: Cross Cutting Concepts in Public Health	1	Fall	
PUBH 8416	Study Design and Evaluation Methods*	3	Spring	
PUBH 8418	Applied Statistical Analysis**	3	Fall	
PUBH 6080	Pathways to Public Health *(non-MPH grads)*	0	Fall (Year 1)	
Required Foundational Courses 15 Credits				
		Credits	**Semester(s) offered**	
EXNS 6202	Advanced Exercise Physiology I	3	Fall	
PUBH 6619	Fundamentals of Nutrition Science	3	Fall/Spring	
PUBH 6611	Nutrition Assessment	2	Spring	
EXNS 6810	Advanced Metabolism	3	Spring	
EXNS 8108	Lab Techniques in Human Physiology	2	Fall	
EXNS 8110	Seminar in Exercise Physiology & Applied Nutrition	1+1	Fall/Spring	
Examples of Specialization Areas and Relevant Courses 12 Credits Minimum				
		Credits	**Semester(s) offered**	
Epidemiology Focus				
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	Spring	
PUBH 6614	Study Design and Analysis in Nutritional Epidemiology	2	Fall	
Exercise Physiology Focus				
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	
Applied Nutrition or Nutrition Policy Focus				
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	
PUBH 6499	Global Maternal and Child Nutrition	2	Fall	
Social & Behavioral Focus				
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		
Cellular/Molecular Biology Focus				
BMSC 8210	Genes to Cells	3		
BMSC 8230	Molecular basis of Human Disease	3		
GENO 8231:	Introduction to Genomics, Proteomics, and Bioinformatics	3		
GENO 6223	Bioinformatics	2		
BIOC 6222	Biochemical Genetics and Medicine	3	Spring	
MLS 6145/6146	Advanced Clinical Biochemistry I & II	6 (3 each)	Fall	
Advanced Statistics/Methods Courses				
PUBH 6530	Qualitative Methods in Health Promotion	2	Spring	
PUBH 6862	Applied Linear Regression Analysis**	3	Fall	
PUBH 8364	Quantitative Methods	3	Spring	
PUBH 8417	Qualitative Research Methods & 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	
Additional Relevant Course Offerings				
PUBH 8116	Communicating Research Results	2	Spring	
May Add Additional Specialization Courses Approved in Advance by Advisor & Program Director				
Dissertation Research 11-13 Credits				
		Credits	**Semester(s) offered**	
PUBH 8435	Dissertation Proposal Development	2	Fall/Spring	
EXNS 8999	Exercise Physiology or Applied Nutrition Dissertation	9-11		
	Total credits	**48**		

*OR PUBH 6495 Field Trial Methods and Application (1 additional credit) OR PUBH 6247: Design of Health Studies (3 credits)

**PUBH 6862 Applied Linear Regression Analysis may be taken in place of PUBH 8418 Applied Statistical Analysis. Students who exempt out of PUBH 8416 and/or PUBH 8418 or PUBH 6862 may choose alternate advanced statistics/methods courses in consultation with the program director and/or their advisor.

It is highly encouraged that students take additional higher-level statistics courses in consultation with their dissertation advisor.

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.

Specialization courses. Different specialization courses may be considered. Seek advisor's/program director's approval and where necessary, instructor approval.

PhD Program Specific Competency Map. Below, PhD program competencies are mapped to the required courses in which they are introduced, developed, and or mastered.

	I=Introduced		*D=Developed*	*M=Maintained*			
PHD, Exercise Physiology & Applied Nutrition	**EXNS 6202**	**PUBH 6611**	**PUBH 6619**	**EXNS 6810**	**EXNS 8108**	**EXNS 8110**	**PUBH 8435**
Program Specific Competencies	Advanced Exercise Physiology I	Nutrition Assessment	Fund of Nutrition Science	Advanced Metabolism	Lab Tech Human Phys	EPAN Doctoral Seminar	Dissert Proposal Develop
1. Integrate physiological and nutritional science concepts as they relate to disease prevention and overall health.	I/D	M	D	D	M	M	
2. Evaluate valid methodological approaches in exercise physiology and nutrition science that can be utilized in laboratory and community-based research.		D			D		
3. Analyze and critically evaluate data in exercise physiology and nutrition research.		D			D	M	
4. Interpret and communicate exercise physiology and nutrition research results to scientific and public health audiences.						I	
5. Develop and analyze hypotheses that can be tested by appropriate quantitative or qualitative research designs and methodologies.			I				I/D

List of Courses

EXNS 6202: Advanced Exercise Physiology
PUBH 6611: Nutrition Assessment
PUBH 6619: Fundamentals of Nutrition Science
EXNS 6810: Advanced Metabolism
EXNS 8108: Lab Techniques in Human Physiology
EXNS 8110: EPAN Doctoral Seminar
PUBH 8435: PhD Dissertation Proposal Development

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.