

# NUTRITION, PHD

**Degree:** Doctor of Philosophy (PhD)

**Field of Study:** Nutrition

## Program Overview

The PhD degree in Nutrition is awarded for study and research in nutrition. Areas of concentration are nutritional biochemistry and metabolism, and molecular nutrition. Admissions to the PhD in Nutrition program are obtained through the integrated Biomedical Scientist Training Program (BSTP), by direct admission to the department or via the Medical Scientist Training Program (MSTP).

## Admissions

Students are admitted to this PhD program through the Biomedical Sciences Training Program (BSTP) or the Medical Scientist Training Program (MSTP).

### Biomedical Sciences Training Program (BSTP)

The BSTP offers a common entry point to most of the School of Medicine's biomedical PhD programs. BSTP students can choose among research mentors in many different PhD programs in the School of Medicine.

### Medical Scientist Training Program (MSTP)

Students in the MSTP earn the dual MD/PhD degree. MSTP students also have the choice of mentors in many different PhD programs. The admission requirements of those programs can be viewed on their pages in the Bulletin. Program requirements for the dual can be found on the Medical Scientist Training Program, PhD/Medicine, MD program page.

## PhD Policies

For PhD policies and procedures, please review the School of Graduate Studies section of the General Bulletin.

## Program Requirements

In order to earn a PhD in Nutrition, a student must complete rotations in at least three laboratories followed by selection of a research advisor, completion of Core and Elective coursework, including responsible conduct of research, as described in the plan of study. Each graduate program follows the overall regulations established and described in CWRU Graduate Studies and documented to the Regents of the State of Ohio. Completion of the PhD degree will require 36 hours of coursework (24 hours of which are graded) and 18 hours of NTRN 701.

In addition, each student must successfully complete a qualifier examination for advancement to candidacy in the form of a short grant proposal with oral defense. During the dissertation period, students are expected to meet twice a year with the thesis committee, present seminars in the department, and fulfill journal publication requirements. Throughout the doctoral training, students are expected to be enthusiastic participants in seminars, journal clubs, and research meetings in the lab and program.

## Biomedical Sciences Training Program (BSTP) Requirements

### Coursework

Students take integrated courses in Cell and Molecular Biology (IBMS 453, IBMS 455). They also complete a course in biostatistics (IBMS 450) and a literature based reading course (IBMS 456A). These four courses, offered in the fall semester, emphasize the molecular approaches that form the basis of modern biology. We also seek students with strong quantitative training who may have majored in physics or math, and offer alternative courses for these students to acquire foundations in biology. Qualified students also may take more specialized elective courses. All students take IBMS 500 On Being a Professional Scientist: The Responsible Conduct of Research.

### Research Rotations

The research rotations allow students to explore research areas and become familiar with faculty members and their laboratories. The main purpose of these rotations is to aid students in selecting a laboratory for their thesis work. Students are encouraged to begin their rotations in July. Doing so gives them the opportunity to complete rotations during the summer before classes begin at the end of August. Students must complete at least three rotations.

### Choosing a Thesis Advisor

During the first year, students select an advisor for their dissertation research. Each student also joins the PhD program with which their advisor is affiliated. Once students choose a PhD program, the requirements of that program are followed to obtain the PhD. The emphasis of the PhD work is on research, culminating in the completion of an original, independent research thesis and publishing the results in the scientific literature. PhD programs also focus on educating students to work as professional scientists.

## Sample Plan of Study

### First Year

Fall		Hours
IBMS 453	Cell Biology I	3
NTRN 551	Seminar in Advanced Nutrition	1
Select one of the following:		0
BSTP 400	Research Rotation in Biomedical Sciences Training Program	
MSTP 400	Research Rotation in Medical Scientist Training Program	
NTRN 601	Special Problems	
IBMS 455	Molecular Biology I	3
<b>Hours</b>		<b>7</b>
Spring		
NTRN 434	Advanced Human Nutrition II	3
NTRN 551	Seminar in Advanced Nutrition	1
NTRN 454 or NTRN 455	Advanced Nutrition and Metabolism: Investigative Methods or Molecular Nutrition	3
NTRN 561	Investigative Methods in Nutrition	1 - 4
NTRN 601	Special Problems	1 - 9
<b>Hours</b>		<b>9-20</b>

**Summer**

IBMS 500	On Being a Professional Scientist: The Responsible Conduct of Research	1
<b>Hours</b>		<b>1</b>

**Second Year****Fall**

NTRN 433	Advanced Human Nutrition I	4
NTRN 452	Nutritional Biochemistry and Metabolism	3
NTRN 551	Seminar in Advanced Nutrition	1
NTRN 561	Investigative Methods in Nutrition	1 - 4
NTRN 601	Special Problems	1 - 9
<b>Hours</b>		<b>10-21</b>

**Spring**

NTRN 551	Seminar in Advanced Nutrition	1
Electives: Select two courses - Any NTRN 400 and/or graduate course in SOM basic science departments		6
NTRN 561	Investigative Methods in Nutrition	1 - 4
NTRN 601	Special Problems	1 - 9
<b>Hours</b>		<b>9-20</b>

**Summer**

NTRN 701	Dissertation Ph.D.	1 - 9
<b>Hours</b>		<b>1-9</b>

**Third Year****Fall**

NTRN 551	Seminar in Advanced Nutrition	1
NTRN 701	Dissertation Ph.D.	1 - 9
<b>Hours</b>		<b>2-10</b>

**Spring**

NTRN 551	Seminar in Advanced Nutrition	1
NTRN 701	Dissertation Ph.D.	1 - 9
<b>Hours</b>		<b>2-10</b>

**Total Hours** **41-98**

After completion of required coursework, student enrolls in a minimum of one credit of NTRN 701 Dissertation Ph.D., Fall and Spring Semesters until graduation.

IBMS 501 is offered every spring semester. The SOM requires that PhD students who are 4 years beyond their initial RCR training in IBMS 500, register for IBMS 501.