

CLINICAL TRANSLATIONAL SCIENCE, PHD

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Degree: Doctor of Philosophy (PhD)
Field of Study: Clinical Translational Science

Program Overview

The mission of the PhD in Clinical Translational Science program is to prepare its students to become independent investigators in clinical and translational science. Thus, in addition to excellent previous academic and/or clinical preparation and recommendations, the PhD program is seeking students with demonstrated clinical translational research interest and experience.

Eligible applicants include:

- Individuals with an advanced clinical degree (e.g., MD, DMD)
- Individuals enrolled in dual clinical-research degree programs, such as CWRU's MD-PhD program
- Individuals with an existing Master's degree in a health-related field (e.g., MS, MSN, MPH)
- Individuals with other scientific or clinical backgrounds to be evaluated on a case-by-case basis.

Faculty

The program resides in the Department of Population and Quantitative Health Sciences (PQHS) in the School of Medicine. The academic units involved include the School of Medicine, Nursing, Management, and Dentistry. The faculty is selected for their expertise and commitment to teaching and mentorship in clinical investigation.

Important Note: The program information contained on this page is current as of July 1st, 2024. For the most current information, we advise you to review the PhD in Clinical Translational Science Program Handbook.

PhD Policies

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

Program Requirements

Curriculum requirements are based on student's previous education and training:

Student with No Existing Advanced Research Degree

- Students will complete a minimum of 54 credit hours
- 36 credit hours is coursework, of which a minimum of 24 must be graded.
 - 22 credit hours will be required coursework (19 are graded)
 - 3 credit hours are core elective coursework

- Remaining credit hours are elective, independent study, pre-dissertation research
- 18 credit hours of Dissertation

Students with an Advanced Research Degree (e.g. MS, MPH, MSN)

- Students with a relevant advanced degree must petition the PhD Steering Committee to obtain a waiver for required coursework. For the waiver, the student must submit transcripts showing the course and grade, as well as the syllabus for the course.
- Per the School of Graduate Studies, curriculum for individual with relevant advanced degree:
 - Minimum of 18 credit hours of coursework, at least 12 of which must be graded. The courses used to achieve the 18 credit hours will depend on individual needs and require the academic advisor's (mentor's) approval.
 - 18 credit hours of Dissertation

Students Seeking Dual Degree MD/PhD through Case Western Reserve University's Medical Scientist Training Program (MSTP) and Clinical Translational Science Training Program:

- Curricula of the two-degree programs are integrated.
- Curriculum for Dual-Degree students:
 - 69 credit hours of coursework, as follows:
 - 19 credit hours of required courses (CRSP 401 is waived as course material is covered in medical school's curriculum), of which 16 must be graded.
 - 18 credit hours (graded), of graduate credits for portions of medical school (IBIS courses)
 - 2 credit hours of core electives
 - 9 credit hours of electives or research practicums (CRSP 601)
 - 6 credit hours of research rotations
 - 18 credit hours of CRSP 701

Curriculum

Code	Title	Credit Hours
Required Courses:		
CRSP 401	Introduction to Clinical Research Summer Series ^a	3
CRSP 412	Communication in Clinical Research - Grant Writing	1
CRSP 413	Communication in Clinical Research - Oral Presentation, Posters, and the Mass Media	1
CRSP 431	Statistical Methods I	3
CRSP 432	Statistical Methods II	3
CRSP 440	Translational & Patient-Oriented Research Theory	3
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 501	Team Science - Working in Interdisciplinary Research Teams	1
CRSP 550	Meta-Analysis & Evidence Synthesis	2 - 3
CRSP 603	Research Ethics and Regulation	2
PQHS 490	Epidemiology: Introduction to Theory and Methods	3
Total Credit Hours		22

a Waived for MD/PhD students in the CTSTP program or by petition with sufficient background from previous coursework.

Code	Title	Credit Hours
Core Electives: ^a		
CRSP 500	Design and Analysis of Observational Studies	3
SYBB 421	Fundamentals of Clinical Information Systems	3
PQHS 416	AI in medicine: knowledge representation and deep learning	3
PQHS 426	An Introduction to GIS for Health and Social Sciences	3
PQHS 450	Clinical Trials and Intervention Studies	3

a Students must take a minimum of 3 credit hours of courses from the Core Elective list, depending on their specific needs and mentor approval.

Electives

Students will take electives to satisfy the graded and pass/fail course requirements and to advance to candidacy. These courses are selected based on students' needs and mentor approval. Any CWRU credit-bearing course may qualify. The courses could be "field specific" or include other core elective courses not taken as part of the requirement above.

Research Component

Code	Title	Credit Hours
CRSP 701	Dissertation Ph.D.	18
Total Credit Hours		18

**Sample Plan of Study
(Student without Advanced Research Degree)**

First Year

Summer		Credit Hours
CRSP 401	Introduction to Clinical Research Summer Series	3
Credit Hours		3

Fall		Credit Hours
CRSP 440	Translational & Patient-Oriented Research Theory	3
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
PQHS 431	Statistical Methods I	3
PQHS 490	Epidemiology: Introduction to Theory and Methods	3
Credit Hours		9

Spring		Credit Hours
CRSP 412	Communication in Clinical Research - Grant Writing	1
Elective		3
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 550	Meta-Analysis & Evidence Synthesis	2-3

PQHS 432	Statistical Methods II	3
Credit Hours		9-10

Second Year

Fall		Credit Hours
CRSP 413	Communication in Clinical Research - Oral Presentation, Posters, and the Mass Media	1
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 501	Team Science - Working in Interdisciplinary Research Teams	1
CRSP 603	Research Ethics and Regulation	2
SYBB 421	Fundamentals of Clinical Information Systems	3
Electives		2
Credit Hours		9

Spring		Credit Hours
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
Electives		6
Credit Hours		6

Third Year

Fall		Credit Hours
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	4
Credit Hours		4

Spring		Credit Hours
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	5
Credit Hours		5

Fourth Year

Fall		Credit Hours
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	4
Credit Hours		4

Spring		Credit Hours
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	5
Credit Hours		5

Total Credit Hours		54-55
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(Student with Advanced Research Degree)

First Year		Credit Hours
Fall		
CRSP 440	Translational & Patient-Oriented Research Theory	3

CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
Electives		6
Credit Hours		9
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 550	Meta-Analysis & Evidence Synthesis	2 - 3
Electives		7
Credit Hours		9-10
Second Year		
Fall		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	4
Credit Hours		4
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	5
Credit Hours		5
Third Year		
Fall		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
PQHS 701	Dissertation Ph.D.	4
Credit Hours		4
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	5
Credit Hours		5
Total Credit Hours		36-37

(Student Seeking Dual Degree MD/PhD)

First Year		
Summer		
MSTP 400	Research Rotation in Medical Scientist Training Program	0
Credit Hours		0
Fall		
IBIS 401	Integrated Biological Sciences I	4
MSTP 400	Research Rotation in Medical Scientist Training Program	3
IBIS 411	Clinical Science I	2
Credit Hours		9
Spring		
IBIS 402	Integrated Biological Sciences II	4
IBIS 412	Clinical Science II	2

MSTP 400	Research Rotation in Medical Scientist Training Program	3
Credit Hours		9
Second Year		
Summer		
MSTP 400	Research Rotation in Medical Scientist Training Program	0
Credit Hours		0
Fall		
IBIS 403	Integrated Biological Sciences III	4
IBIS 413	Clinical Science III	2
CRSP 440	Translational & Patient-Oriented Research Theory	3
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
Credit Hours		9
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 550	Meta-Analysis & Evidence Synthesis	2-3
Electives		7
Credit Hours		9-10
Third Year		
Fall		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 501	Team Science - Working in Interdisciplinary Research Teams	1
CRSP 603	Research Ethics and Regulation	2
PQHS 431	Statistical Methods I	3
PQHS 490	Epidemiology: Introduction to Theory and Methods	3
Credit Hours		9
Spring		
CRSP 412	Communication in Clinical Research - Grant Writing	1
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
PQHS 432	Statistical Methods II	3
Electives		5
Credit Hours		9
Fourth Year		
Fall		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 413	Communication in Clinical Research - Oral Presentation, Posters, and the Mass Media	1
CRSP 701	Dissertation Ph.D.	6
Credit Hours		7
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0

CRSP 701	Dissertation Ph.D.	6
Credit Hours		6
Fifth Year		
Fall		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	4
Credit Hours		4
Spring		
CRSP 450	Seminar in Multidisciplinary Clinical & Translational Research	0
CRSP 701	Dissertation Ph.D.	2
Credit Hours		2
Total Credit Hours		73-74

Dual Degree Options

- Medical Scientist Training Program (MSTP), PhD/Medicine, MD