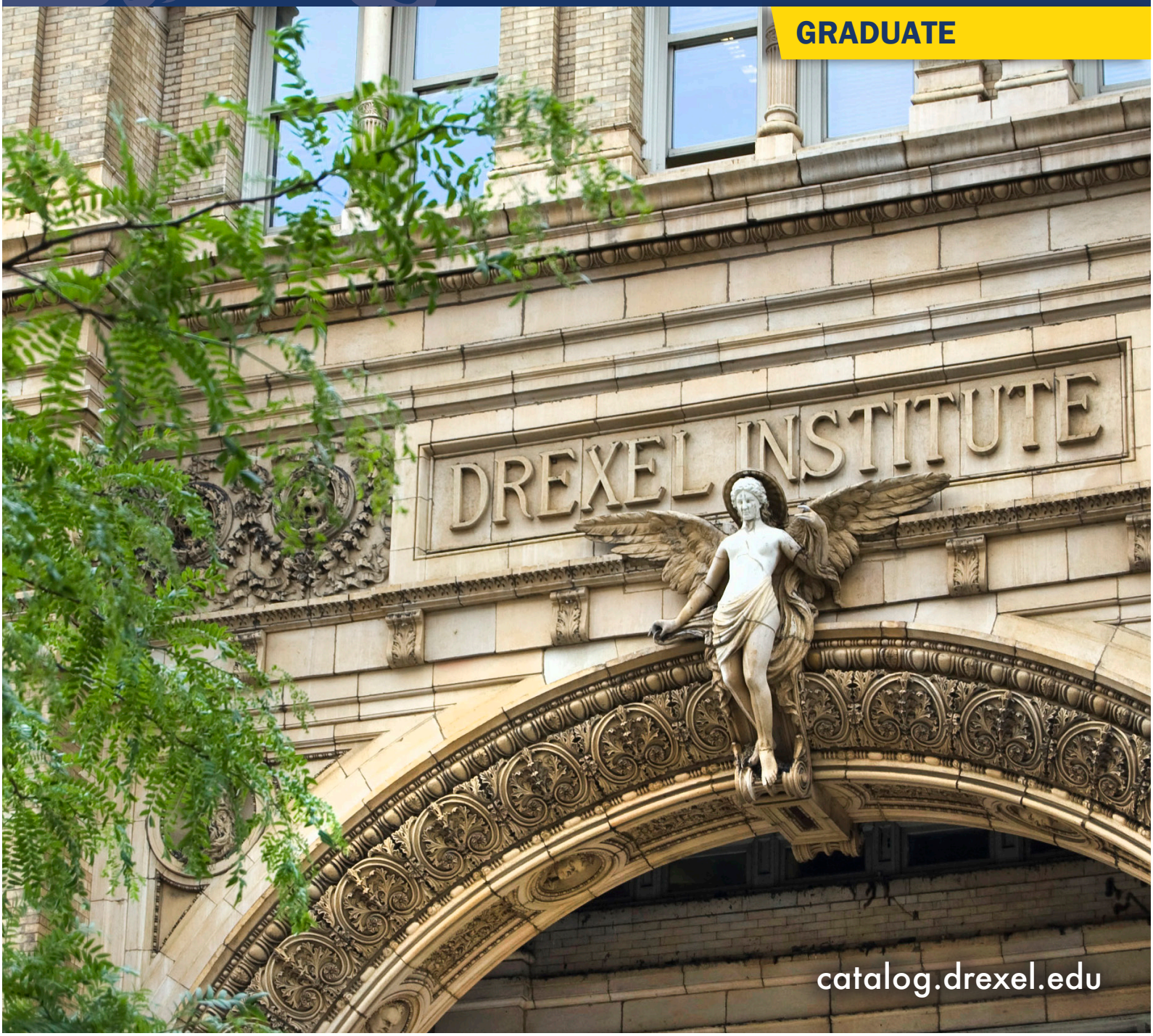
DREXEL UNIVERSITY
College of
Medicine

CATALOG
2024-2025

GRADUATE



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The College of Medicine

Overview

Drexel University College of Medicine is the consolidation of two venerable medical schools with rich and intertwined histories: Hahnemann Medical College and Woman's Medical College of Pennsylvania. Established in 1848 and 1850, respectively, they were two of the earliest medical colleges in the United States, and Woman's was the first degree-granting medical school in the world for women.

Drexel University College of Medicine has more than 1,100 medical students. Additionally, there are over 900 graduate students enrolled in the College of Medicine's Graduate School of Biomedical Sciences and Professional Studies (https://drexel.edu/medicine/academics/graduate-school/). The College's more than 2,500 faculty expertly teach across our local campuses and the many regional (https://drexel.edu/medicine/about/affiliated-hospitals/regional-medical-campuses/) and academic medical campuses (https://drexel.edu/medicine/about/affiliated-hospitals/academic-medical-campuses/) where clerkship years and research training occur.

Drexel University College of Medicine strives for a diverse, equitable and inclusive environment and encourages nontraditional applicants to apply. The College seeks highly qualified and motivated students who demonstrate the desire, intelligence and integrity to become excellent physicians and scientists.

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About the College of Medicine

Mission Statement

Drexel University College of Medicine excels and innovates in education, research and the delivery of compassionate care in our culture of diversity, spirited inquiry, collaboration and opportunity.

About the College

Drexel University College of Medicine strives for a diverse, equitable and inclusive environment and encourages nontraditional applicants to apply. The College seeks highly qualified and motivated students who demonstrate the desire, intelligence and integrity to become excellent physicians and scientists.

The College of Medicine has campuses in the Philadelphia region for our first- and second-year medical students and graduate students in the Graduate School of Biomedical Sciences and Professional Studies. In 2023, the Health Sciences Building on the University City Campus opened in phases, bringing together all of Drexel's health-related fields of study in one modern space. The College's long-standing Queen Lane Campus is in a suburban-like setting in the East Falls section of Philadelphia and has renowned basic science research laboratories. Additional research facilities are located at the Center City Campus. Our pediatrics department is located at St. Christopher's Hospital for Children, which is owned and operated in partnership with Tower Health and Drexel University. Medical students can receive clinical education at over 20 affiliated hospitals and ambulatory sites chosen for commitment to teaching as well as medical excellence. The College of Medicine at Tower Health is a regional medical campus near Reading Hospital, where medical students study and complete clerkship training for all four years.

Renowned for its innovative, student-centered programs, the Graduate School of Biomedical Sciences and Professional Studies at Drexel University College of Medicine provides PhD and master's level academic offerings that emphasize real-world experience. Our graduate students are mentored by and work in partnership with world-renowned faculty.

The College has established one of the largest centers for spinal cord research in the mid-Atlantic region and founded one of the leading centers for malaria study in the nation. Collaborative projects leveraging Drexel University's technological expertise push the frontiers of cell and gene therapy, neuroscience and neuroengineering.

Drexel is designated as an "R1 Doctoral University: Very High Research Activity" in the Carnegie Classification of Institutions of Higher Education and is one of 146 institutions out of approximately 3,900 to receive this prestigious classification, indicating the highest level of research activity. The College of Medicine is proud of its internationally recognized research programs conducted by our basic scientists, and of the many complementary efforts in clinical science and clinical care conducted by our faculty. The College boasts programmatic excellence in fields that include infectious and inflammatory diseases, neuroscience and cancer biology.

Drexel's Partnership Comprehensive Care Practice is the largest HIV treatment office in the greater Philadelphia region. The Drexel Medicine practices provide care to the local community and support the patient care, clinical training and research missions of the College.

Facilities

Drexel University College of Medicine is a living laboratory, giving students a broad variety of hands-on experience, enhanced by clinical rotations in hospitals, practicums and external research opportunities depending on program of study. Students in all programs benefit from the College's campuses, which offer some of the most advanced facilities in biomedical, health sciences and health care education. College of Medicine faculty members are leaders in developing interactive computer-based learning tools, ranging from professional formation, biochemical exercises to simulated patients presenting ethical dilemmas. A comprehensive curriculum website, streaming lectures and online slide atlases for histology and pathology are all available.

Some of the College's key facilities and their features include:

Medical Simulation Centers

The College has state-of-the-art simulation centers for medical education at our campuses in University City in Philadelphia and in West Reading, Pennsylvania. The centers allow students to learn in simulated operating rooms and patient room settings.

Clinical Education Assessment Centers

Examination rooms with digital capture that simulate physicians' offices are linked to control and observation rooms for faculty. Students work with standardized patients to enhance their abilities in medical interviewing, physical examination and patient counseling.

Multidisciplinary Laboratories

A range of research facilities provide support for clinical and basic research activities, interdisciplinary programs to develop and implement research, translational research and mentoring to advance the training of physicians and scientists.

Libraries

The Drexel University Library system serves the needs of students, faculty and staff. The collections emphasize subjects relevant to the health sciences, with extensive online resources to meet the needs of the programs and departments across campuses.

All online resources (databases, electronic journals, etc.) are available to students, faculty and staff who are registered Drexel Library users, and can be accessed from off-campus locations.

The Library staff provides assistance to students and other library users through on-the-spot reference help, mediated literature searches and instructional sessions. Guides are available online to help with the use of Library services and resources.

Web-Based Instruction

Uses of web-based instruction range from providing a supplement to classroom instruction to teaching a whole course remotely. Many instructors post their syllabi on the web, distribute supplementary readings via the web and set up electronic discussion lists for their students. Having students submit assignments electronically is a common practice.

Unique faculty-developed tools, including offerings from the health care communication and professional formation portal, provide web-based video encounters between physician and patient, and help medical students improve their communication skills. Modules on physical exam skills, diagnostic reasoning, symptoms and signs, clinical procedures and other resources are available in the College of Medicine's online clinical skills portal. Medical students have exclusive access to these resources to develop the skills necessary to become physicians in the 21st century.

Doctor of Medicine (MD) Program

About the Program

Drexel University College of Medicine's MD program trains future physicians in the science and art of medicine. At Drexel, our medical students learn to combine cutting-edge technology with the highest level of compassion in the practice of medicine. Our supportive educational environment emphasizes collaboration and gives students a comfort level that lets them learn and thrive. Faculty members are concerned first and foremost with teaching and helping students.

Drexel's innovative MD curriculum, **Foundations and Frontiers**, is designed to create physicians for the 21st century. The curriculum instills all of the enduring qualities necessary for clinical excellence while also including essential competencies such as understanding of population health, health informatics, quality and patient safety, and health care systems and financing. Our longstanding partnerships with affiliate training sites (https://drexel.edu/medicine/about/affiliated-hospitals/) expose students to diverse patient populations and a variety of health conditions.

Foundations and Frontiers Highlights

Foundations and Frontiers was created with input from medical students, faculty, alumni and national medical education experts. The program builds on the College of Medicine's legacy in medical education and embraces Drexel University's reputation for innovation and collaboration.

Our curriculum is supported technologically by Drexel-developed iPad applications and state-of-the-art simulation and clinical education centers where medical students can apply what they have learned in the classroom with hands-on training.

Other hallmarks of the distinctive Frontiers and Foundations curriculum include:

- Early and frequent clinical exposure
- Integrated basic science and clinical education
- Team learning
- Technology-enhanced education
- Cultural competence
- Community and civic engagement
- An award-winning, nationally recognized Professional Formation program
- Enhanced opportunities for research and scholarly projects in basic science as well as other areas such as women's health, population health, health care economics and humanities

Campuses

Incoming medical students are assigned to one of two campuses located in Philadelphia and West Reading, Pennsylvania. Our Philadelphia campus is located in University City at the state-of-the-art Health Sciences Building, which also houses the College of Nursing and Health Professions and programs of the Graduate School of Biomedical Sciences and Professional Studies. Our West Reading Campus is located in close proximity to Tower Health's Reading Hospital. Both campuses provide vibrant student life with access to cultural, artistic and sporting activities, as well as opportunities to become involved in community outreach.

The Societies

Incoming medical students are placed into one of seven learning communities, or "societies," each taking its name from a famous Philadelphia or Reading landmark: Athenaeum, Liberty Bell, Physick House, Rocky Statue, Reading Terminal, Eakins House and Pagoda.

Each society has elected student representatives, who are responsible for coordinating and planning society activities.

The society provides a social structure for each student, giving a small-school feel while maintaining all of the advantages and amenities of a large institution.

The program helps promote a greater sense of community and greater connection among the medical students and faculty. The society serves as the core unit for a variety of valuable activities including:

- Small-group learning
- Advising/peer mentoring program
- Community service projects
- Activities to promote student wellness
- Social activities
- Society-based competitions culminating in the coveted "Dean's Cup"

The Foundations and Frontiers curriculum information presented is subject to revision. Last updated July 1, 2022.

Additional Information

For more information, including admissions details, visit the College of Medicine's MD program (http://drexel.edu/medicine/academics/md-program/) website.

Three-Phase Curriculum

Foundations and Frontiers is a four-year curriculum that has been divided into three phases. Phase One (Years 1 and 2) lays the groundwork for basic and clinical science. Phase Two (Year 3) allows medical students to apply their patient care knowledge and skills to a variety of clinical settings. Phase Three (Year 4) focuses on advanced clinical skills and preparation for residency.

Phase 1: Foundations

The 18-month "Foundations" phase includes basic and clinical science courses that integrate multiple disciplines. Medical students also spend time in nontraditional classroom settings working in teams to apply knowledge to clinical problems. This phase of the curriculum also includes multiple experiences in our state-of-the-art simulation center working with high-fidelity mannequins and standardized patients. The basic science content begins with an introduction to cells and tissues and then proceeds into organ-based blocks with a focus on normal processes. During the second year, medical students revisit the major organ systems with a focus on abnormal processes.

Lectures, conferences, laboratory, simulation and other team-learning formats develop and extend the principles introduced in the case throughout the week.

A longitudinal practicum experience extends through the Foundations phase and exposes medical students to patients in varied community settings. It provides experiences in chronic care, service learning and interprofessional education, and is combined with a social justice and health disparities curriculum.

During four one-week blocks, medical students will be immersed in the "Frontiers" portion of the curriculum, providing cutting-edge study in such areas as health care informatics, population health, quality and patient safety, health care economics and principles of translational research.

Phase 2: Applications

The one-year "Applications" phase allows medical students to practice their patient care knowledge and skills in a variety of clinical settings. The year starts with participation in a two-week structured session, "*Intersession I: Transition to the Clinical Years*," which focuses on skills needed for medical students to function effectively on the wards.

During the third year, medical students rotate through clerkships in surgery, internal medicine, family medicine, pediatrics, psychiatry, neurology, ambulatory medicine, and obstetrics and gynecology. To enhance the diversity of their clinical experience, medical students work with faculty members at multiple sites in metropolitan centers, working-class neighborhoods, suburbs, inner city areas and rural communities.

All third-year clerkships take place on Drexel's academic campuses. Assignments for third year are based on the results of a lottery system, although medical students can elect year-long assignments at our seven regional medical campuses:

- Allegheny Health Network
- Bayhealth Medical Center
- Crozer-Chester Medical Center
- Kaiser Permanente – Bay Area
- UPMC Harrisburg
- Tower Health - Reading Hospital
- WellSpan York Hospital

Phase 3: Transitions

The "Transitions" phase focuses on advanced clinical skills and preparation for residency. The fourth-year curriculum is structured within "Pathways" — an advising system that gives medical students a well-rounded educational experience and also prepares them for potential career. Medical students may choose a discipline-specific Pathway or one that provides more broad-based experiences. All medical students have a Pathway-specific advisor who works with the student to balance the structure and flexibility of their learning needs, helps prepare the student to enter postgraduate training with confidence, and works to maximize the guidance and counseling available from preceptors.

The Pathway advisors help medical students focus their preparation for graduate medical education and careers. The Pathway program also gives medical students experience in fields of interest other than the one that is likely to be their career path. Medical students take both required courses and electives in the Pathway system. Six courses are required:

- Sub-internship in a core discipline
- Pathway-specific rotation
- Emergency medicine or critical care rotation
- Transition to residency
- Residency-immersion experience

Fourth-year medical students have opportunities to complete a variety of clinical elective rotations at hospitals and sites that are not Drexel clinical affiliates, including international rotations. In addition, during the fourth year, medical students may choose to leverage the expertise of one of Drexel's other colleges by studying for a graduate certificate in one of the Frontiers content areas. Alternatively, medical students may choose to conduct a scholarly project under the direction of a faculty member.

Dual Degree Programs

MD/PhD Program

The MD/PhD program is designed for a limited number of individuals who are strongly motivated toward a career in academic medicine and medically oriented research. The program trains individuals in the fundamental clinical aspects of medicine and offers advanced training in biochemistry, microbiology and immunology, molecular and cellular biology, neuroscience and pharmacology, as well as medical engineering. Physicians with extensive research training are uniquely positioned to advance medical care and to teach at the cutting edge of medical discovery. Tuition scholarships and stipends for medical school and graduate school are provided for a limited number of students.

MD/MPH

With Drexel University's Dornsife School of Public Health, the College of Medicine offers a joint five-year program for highly qualified students to pursue both the MD and the Master of Public Health degrees. Students are taught to be physicians with a public-health orientation to the development, planning, delivery and evaluation of health care programs and policies.

MD/MBA

The MD/MBA degree meets a growing demand for physicians who wish to manage corporate medical practices, hospitals and related organizations, and contribute to the development of health policy. The joint program prepares physicians to apply management principles to individual or group practices or to move into management positions at many types of organizations. Students receive training at both the College of Medicine and at Drexel’s AACSB-accredited LeBow College of Business. The program lets students earn both degrees in five years.

MD/MS

Since clinical medicine and biomedical research have a unique synergy, the College of Medicine offers a Doctor of Medicine (MD)/Master of Science (MS) dual degree program for students who want to connect research and clinical care. This program prepares graduates for distinguished careers in clinical practice, teaching, research and public service.

Additional Information

For more information, visit the College's Dual Degrees (https://drexel.edu/medicine/academics/md-program/dual-degree-programs/) page.

Program Level Outcomes

MD program trainees must:

- Be able to provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health in all patients across the lifespan.
- Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
- Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to improve patient care based on constant self-evaluation and lifelong learning.
- Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and other health professionals.
- Demonstrate adherence to ethical principles, development of physician attributes and commitment to carrying out professional responsibilities.
- Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Medicine (MD)/PhD

Major: Medicine (MD) / PhD
Degree Awarded: Doctor of Medicine (MD) and Doctor of Philosophy (PhD)
Calendar Type: Semester
Minimum Required Credits: 60.0
Co-op Option: None
Classification of Instructional Programs (CIP) code: 26.0102
Standard Occupational Classification (SOC) code:

About the Program

The MD/PhD program allows students to integrate their medical education with intense research training by selecting a training mentor from one of the PhD programs. Once a research training mentor is selected, the student will be enrolled in the mentor's academically affiliated PhD program. MD/PhD students learn the fundamental clinical aspects of medicine and receive advanced training in a specific field of research. Physicians with extensive research training are uniquely positioned to advance medical care and to teach at the cutting edge of medical discovery.

For more information, please visit the MD/PhD (https://drexel.edu/medicine/academics/dual-degree-programs/md-phd/) web page.

Admission Requirements

MD/PhD Program Application Procedure

Applications are submitted to the medical college through AMCAS. Please select the MD/PhD option in the AMCAS application. After the verified application is received, Drexel University College of Medicine will send the secondary application. If the MD/PhD option was not initially selected in the AMCAS application, applicants may indicate their interest in the program by selecting the MD/PhD option in the secondary application.

Both options place the application in a separate review group specific to the MD/PhD dual degree program. Please ensure that at least one of the recommendation letters is from an individual who is able to assess the applicant's research capabilities and potential.

Required Application Materials

1. AMCAS application
2. Medical school supplemental application (sent via email after AMCAS application is verified in our system)
3. AMCAS letters of recommendation (make sure all of your recommenders have submitted their letters to AMCAS)
4. Photo (submitted with medical school supplemental application)

Eligibility

Applicants must be U.S. citizens or permanent residents. If the applicant is a permanent resident of the U.S., a copy of the applicant's green card is required when applying.

Degree Requirements

Students must complete all MD requirements, which also substitute for Year One PhD requirements. The remaining PhD requirements per program are listed below.

MD/PhD in Biochemistry of Health & Disease

Required Courses		
BIOC 506S	Biochemistry Journal Club *	5.0
BIOC 507S	Biochemistry Seminar Series *	5.0
BIOC 508S	Experimental Approaches to Biochemical Problems	3.0
BIOC 511S	Communication for Researchers	2.0
BIOC 521S	Introduction to Biochemical Data	2.0
BIOC 600S	Biochemistry Thesis Research *	45.0
IDPT 500S	Responsible Conduct of Research	2.0
IDPT 600S	Thesis Defense	9.0
Advanced Electives		**6.0**
Select at least two Advanced Electives for a minimum of 6.0 credits:		
BIOC 520S	Macromolecular Structure & Function	
BIOC 522S	Biochemistry of Drug Discovery & Design	
BIOC 603S	Advanced Topics in Biochemistry and Molecular Biology	
CBIO 510S	Cancer Biology	
CBIO 512S	Advanced Cancer Biology	

MCBG 506S	Advanced Cell Biology
MIIM 555S	Molecular Mechanisms of Microbial Pathogenesis
MIIM 604S	Special Topics in Virology
MIIM 630S	Advanced Molecular Biology
NEUR 609S	Graduate Neuroscience II
PHGY 503S	Graduate Physiology
PHRM 512S	Graduate Pharmacology
PHRM 525S	Drug Discovery and Development I
General Electives	
BIOC 502S	Biochemistry 1st Lab Rotation
BIOC 503S	Biochemistry 2nd Lab Rotation
BIOC 504S	Biochemistry 3rd Lab Rotation
IDPT 501S	Biostatistics I
IDPT 507S	Teaching Practicum I
IDPT 508S	Teaching Practicum II
IDPT 509S	Teaching Practicum III
Total Credits	**79.0**

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Taken each semester until the last, when only Thesis Defense is taken

MD/PhD in Microbiology & Immunology

Required Courses		
IDPT 500S	Responsible Conduct of Research	2.0
IDPT 600S	Thesis Defense	9.0
MIIM 502S	Microbiology and Immunology Journal Club *	5.0
MIIM 514S	Grant Building	2.0
MIIM 600S	Microbiology and Immunology Thesis Research *	45.0
MIIM 606S	Microbiology and Immunology Seminar *	5.0
Advanced Electives		**4.0**
Select at least two Advanced Electives for a minimum of 4.0 credits:		
MIIM 528S	Structural Bioinformatics	
MIIM 555S	Molecular Mechanisms of Microbial Pathogenesis	
MIIM 607S	Immunology II	
MIIM 613S	Emerging Infectious Diseases	
MIIM 615S	Experimental Therapeutics	
MIIM 625S	Advanced Molecular Virology	
MIIM 630S	Advanced Molecular Biology	
General Electives		
IDPT 501S	Biostatistics I	
IDPT 507S	Teaching Practicum I	
IDPT 508S	Teaching Practicum II	
IDPT 509S	Teaching Practicum III	
MIIM 504S	Microbiology and Immunology 1st Rotation	
MIIM 505S	Microbiology and Immunology 2nd Rotation	
MIIM 506S	Microbiology and Immunology 3rd Rotation	
Total Credits		**72.0**

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Taken each semester until the last, when only Thesis Defense is taken

MD/PhD in Molecular & Cell Biology & Genetics

Required Courses		
IDPT 500S	Responsible Conduct of Research	2.0
IDPT 600S	Thesis Defense	9.0
MCBG 506S	Advanced Cell Biology	2.0
MCBG 512S	MCBG Journal Club *	5.0
MCBG 513S	Molec & Cell Biology Seminar *	5.0
MCBG 600S	MCBG Thesis Research *	45.0
Advanced Electives		**7.0**
Select at least three Advanced Electives for a minimum of 7.0 credits:		

BIOC 508S	Experimental Approaches to Biochemical Problems
BIOC 511S	Communication for Researchers
BIOC 521S	Introduction to Biochemical Data
BIOC 603S	Advanced Topics in Biochemistry and Molecular Biology
CBIO 510S	Cancer Biology
CBIO 512S	Advanced Cancer Biology
MCBG 514S	Cell Cycle and Apoptosis
MIIM 508S	Immunology I
MIIM 555S	Molecular Mechanisms of Microbial Pathogenesis
MIIM 607S	Immunology II
MIIM 613S	Emerging Infectious Diseases
MIIM 615S	Experimental Therapeutics
MIIM 630S	Advanced Molecular Biology
NEUR 508S	Graduate Neuroscience I
NEUR 511S	Advanced Cellular and Developmental Neuroscience
NEUR 512S	Advanced Systems and Behavioral Neuroscience
PHRM 507S	Prin of Neuropharmacology
PHRM 512S	Graduate Pharmacology
PHRM 525S	Drug Discovery and Development I
PHRM 526S	Drug Discovery and Development II
PHRM 602S	Research Methods in Pharmacology
General Electives	
MCBG 501S	MCBG 1st Lab Rotation
MCBG 502S	MCBG 2nd Lab Rotation
MCBG 503S	MCBG 3rd Lab Rotation
IDPT 501S	Biostatistics I
IDPT 507S	Teaching Practicum I
IDPT 508S	Teaching Practicum II
IDPT 509S	Teaching Practicum III
Total Credits	**75.0**

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Taken each semester until the last, when only Thesis Defense is taken

MD/PhD in Neuroscience

Required Courses		
IDPT 500S	Responsible Conduct of Research	2.0
IDPT 600S	Thesis Defense	9.0
NEUR 500S	Statistics for Neuro/Pharm Research	2.0
NEUR 520S	Neurobiology Topics I *	6.0
NEUR 521S	Neurobiology Topics II *	4.0
NEUR 600S	Neuroscience Thesis Research *	45.0
NEUR 609S	Graduate Neuroscience II	4.0
Advanced Electives		**1.0-4.0**
Select at least one of the following Advanced Electives:		
NEUR 511S	Advanced Cellular and Developmental Neuroscience	
NEUR 512S	Advanced Systems and Behavioral Neuroscience	
NEUR 634S	Motor Systems	
General Electives		
IDPT 507S	Teaching Practicum I	
IDPT 508S	Teaching Practicum II	
IDPT 509S	Teaching Practicum III	
MCBG 506S	Advanced Cell Biology	
NEUR 501S	Neuroscience 1st Lab Rotation	
NEUR 502S	Neuroscience 2nd Lab Rotation	
NEUR 503S	Neuroscience 3rd Lab Rotation	
NEUR 508S	Graduate Neuroscience I	
PHRM 507S	Prin of Neuropharmacology	
Total Credits		**73.0-76.0**

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Taken each semester until the last, when only Thesis Defense is taken

MD/PhD in Pharmacology & Physiology

Required Courses		
IDPT 500S	Responsible Conduct of Research	2.0
IDPT 600S	Thesis Defense	9.0
PHRM 502S	Current Topics in Pharmacology & Physiology *	5.0
PHRM 507S	Prin of Neuropharmacology	3.0
PHRM 516S	Advanced Topics in Physiology	1.0
PHRM 517S	Advanced Topics in Pharmacology	1.0
PHRM 600S	Pharmacology Thesis Research *	45.0
Advanced Electives		**4.0**
Select at least two Advanced Electives for a minimum of 4.0 credits:		
BIOC 520S	Macromolecular Structure & Function	
CBIO 510S	Cancer Biology	
MIIM 508S	Immunology I	
MIIM 521S	Biotechniques I: Molecular and Genomic Methods	
PHRM 518S	New Frontiers in Therapy	
PHRM 519S	Methods in Biomedical Research	
PHRM 525S	Drug Discovery and Development I	
PHRM 526S	Drug Discovery and Development II	
MLAS 536S	Animal Models for Biomedical Research	
General Electives		
CR 500S	Epidemiology	
CR 513S	Business Processes and Contemporary Concerns in Pharmaceutical R & D	
CR 514S	World Wide Regulatory Submissions	
CR 515S	Intro to Clinical Trials	
CR 520S	Applications of Clinical Research Biostatistics	
CR 525S	Scientific Writing and Medical Literature	
CR 535S	Current Federal Regulatory Issues in Biomedical Research	
CR 545S	Pharmaceutical Law	
CR 550S	Leadership Skills	
CR 555S	Compliance & Monitoring Issues	
CR 570S	Principles and Practice of Pharmacovigilance	
CR 600S	Designing the Clinical Trial	
CR 609S	Innovative Product Development	
CR 612S	Fundamentals of Compliance	
CR 614S	Introduction to Clinical Pharmacology	
CR 617S	Informatics in Pharm Res & Development	
CR 620S	Regulatory, Scientific and Social Issues Affecting Biotech Research	
CR 625S	Health Policy and Economics	
CR 635S	Strategic Planning	
IDPT 501S	Biostatistics I	
IDPT 507S	Teaching Practicum I	
IDPT 508S	Teaching Practicum II	
IDPT 509S	Teaching Practicum III	
NEUR 500S	Statistics for Neuro/Pharm Research	
PHRM 503S	Pharm & Phys 1st Lab Rotation	
PHRM 504S	Pharm & Phys 2nd Lab Rotation	
PHRM 505S	Pharm & Phys 3rd Lab Rotation	
Total Credits		**70.0**

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Taken each semester until the last, when only Thesis Defense is taken

Sample Plan of Study

MD/PhD in Biochemistry of Health & Disease

First Year

Fall	Credits	Spring	Credits
First Year MD Curriculum		First Year MD Curriculum	
	0		**0**

Second Year

Fall	Credits	Spring	Credits
Second Year MD Curriculum		Second Year MD Curriculum	
	0		**0**

Third Year

Fall	Credits	Spring	Credits
Third Year MD Curriculum		Third Year MD Curriculum	
	0		**0**

Fourth Year

Fall	Credits	Spring	Credits
BIOC 506S	1.0	BIOC 506S	1.0
BIOC 507S	1.0	BIOC 507S	1.0
BIOC 508S	3.0	BIOC 511S	2.0
BIOC 600S	9.0	BIOC 521S	2.0
IDPT 500S	2.0	BIOC 600S	9.0
	16		**15**

Fifth Year

Fall	Credits	Spring	Credits
BIOC 506S	1.0	BIOC 506S	1.0
BIOC 507S	1.0	BIOC 507S	1.0
BIOC 600S	9.0	BIOC 600S	9.0
Advanced Elective	3.0	Advanced Elective	3.0
	14		**14**

Sixth Year

Fall	Credits	Spring	Credits
BIOC 506S	1.0	IDPT 600S	9.0
BIOC 507S	1.0		
BIOC 600S	9.0		
	11		**9**

Seventh Year

Fall	Credits	Spring	Credits
Fourth Year MD Curriculum		Fourth Year MD Curriculum	
	0		**0**

Total Credits 79

MD/PhD in Microbiology & Immunology

First Year

Fall	Credits	Spring	Credits
First Year MD Curriculum		First Year MD Curriculum	
	0		**0**

Second Year

Fall	Credits	Spring	Credits
Second Year MD Curriculum		Second Year MD Curriculum	
	0		**0**

Third Year

Fall	Credits	Spring	Credits
Third Year MD Curriculum		Third Year MD Curriculum	
	0		**0**

Fourth Year

Fall	Credits	Spring	Credits
IDPT 500S	2.0	MIIM 502S	1.0
MIIM 502S	1.0	MIIM 514S	2.0
MIIM 600S	9.0	MIIM 600S	9.0

MIIM 606S	1.0	MIIM 606S	1.0
Advanced Elective	2.0	Advanced Elective	2.0
	15		**15**

Fifth Year

Fall	**Credits**	**Spring**	**Credits**
MIIM 502S	1.0	MIIM 502S	1.0
MIIM 600S	9.0	MIIM 600S	9.0
MIIM 606S	1.0	MIIM 606S	1.0
	11		**11**

Sixth Year

Fall	**Credits**	**Spring**	**Credits**
MIIM 502S	1.0	IDPT 600S	9.0
MIIM 600S	9.0		
MIIM 606S	1.0		
	11		**9**

Seventh Year

Fall	**Credits**	**Spring**	**Credits**
Fourth Year MD Curriculum		Fourth Year MD Curriculum	
	0		**0**

Total Credits 72

MD/PhD in Molecular & Cell Biology & Genetics

First Year

Fall	**Credits**	**Spring**	**Credits**
First Year MD Curriculum		First Year MD Curriculum	
	0		**0**

Second Year

Fall	**Credits**	**Spring**	**Credits**
Second Year MD Curriculum		Second Year MD Curriculum	
	0		**0**

Third Year

Fall	**Credits**	**Spring**	**Credits**
Third Year MD Curriculum		Third Year MD Curriculum	
	0		**0**

Fourth Year

Fall	**Credits**	**Spring**	**Credits**
IDPT 500S	2.0	MCBG 506S	2.0
MCBG 512S	1.0	MCBG 512S	1.0
MCBG 513S	1.0	MCBG 513S	1.0
MCBG 600S	9.0	MCBG 600S	9.0
Advanced Elective	3.0	Advanced Elective	2.0
	16		**15**

Fifth Year

Fall	**Credits**	**Spring**	**Credits**
MCBG 512S	1.0	MCBG 512S	1.0
MCBG 513S	1.0	MCBG 513S	1.0
MCBG 600S	9.0	MCBG 600S	9.0
Advanced Elective	2.0		
	13		**11**

Sixth Year

Fall	**Credits**	**Spring**	**Credits**
MCBG 512S	1.0	IDPT 600S	9.0
MCBG 513S	1.0		
MCBG 600S	9.0		
	11		**9**

Seventh Year

Fall	**Credits**	**Spring**	**Credits**
Fourth Year MD Curriculum		Fourth Year MD Curriculum	
	0		**0**

Total Credits 75

MD/PhD in Neuroscience

First Year

Fall	Credits	Spring	Credits
First Year MD Curriculum		First Year MD Curriculum	
	0		**0**

Second Year

Fall	Credits	Spring	Credits
Second Year MD Curriculum		Second Year MD Curriculum	
	0		**0**

Third Year

Fall	Credits	Spring	Credits
Third Year MD Curriculum		Third Year MD Curriculum	
	0		**0**

Fourth Year

Fall	Credits	Spring	Credits
IDPT 500S	2.0	NEUR 500S	2.0
NEUR 520S	2.0	NEUR 521S	2.0
NEUR 600S	9.0	NEUR 600S	9.0
NEUR 609S	4.0	Advanced Elective	1.0-4.0
	17		**14-17**

Fifth Year

Fall	Credits	Spring	Credits
NEUR 520S	2.0	NEUR 521S	2.0
NEUR 600S	9.0	NEUR 600S	9.0
	11		**11**

Sixth Year

Fall	Credits	Spring	Credits
NEUR 520S	2.0	IDPT 600S	9.0
NEUR 600S	9.0		
	11		**9**

Seventh Year

Fall	Credits	Spring	Credits
Fourth Year MD Curriculum		Fourth Year MD Curriculum	
	0		**0**

Total Credits 73-76

MD/PhD in Pharmacology & Physiology

First Year

Fall	Credits	Spring	Credits
First Year MD Curriculum		First Year MD Curriculum	
	0		**0**

Second Year

Fall	Credits	Spring	Credits
Second Year MD Curriculum		Second Year MD Curriculum	
	0		**0**

Third Year

Fall	Credits	Spring	Credits
Third Year MD Curriculum		Third Year MD Curriculum	
	0		**0**

Fourth Year

Fall	Credits	Spring	Credits
IDPT 500S	2.0	PHRM 502S	1.0
PHRM 502S	1.0	PHRM 517S	1.0
PHRM 516S	1.0	PHRM 600S	9.0
PHRM 600S	9.0	Advanced Elective	2.0
	13		**13**

Fifth Year

Fall	Credits	Spring	Credits
PHRM 502S	1.0	PHRM 502S	1.0
PHRM 507S	3.0	PHRM 600S	9.0

PHRM 600S	9.0		
Advanced Elective	2.0		
	15		**10**
Sixth Year			
Fall	**Credits**	**Spring**	**Credits**
PHRM 502S	1.0	IDPT 600S	9.0
PHRM 600S	9.0		
	10		**9**
Seventh Year			
Fall	**Credits**	**Spring**	**Credits**
Fourth Year MD Curriculum		Fourth Year MD Curriculum	
	0		**0**

Total Credits 70

Program Level Outcomes

MD/PhD students must meet the program level outcomes of their selected PhD program, as well as those of the MD program, which include:

- Be able to provide patient care that is compassionate, appropriate and effective for the treatment of health problems and the promotion of health in all patients across the lifespan.
- Demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.
- Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to improve patient care based on constant self-evaluation and lifelong learning.
- Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families and other health professionals.
- Demonstrate adherence to ethical principles, development of physician attributes and commitment to carrying out professional responsibilities.
- Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.

Medical Science (MD/MS)

Major: Medical Science
Degree Awarded: Medical Doctor/Master of Science (MD/MS)
Calendar Type: Semester
Minimum Total Credit Hours: 30.0
Classification of Instructional Programs (CIP) code: 26.9999
Standard Occupational Classification (SOC) code: 11-9121

About the Program

The MD/MS in Medical Science (MD-MS) dual-degree program is designed to prepare physician scientists for careers as lifetime learners. The program is built on the foundation that clinical medicine and biomedical research enjoy a unique synergy. Physician scientists are uniquely poised to recognize, understand, apply and expand clinical applications of basic research or identify novel or emerging areas of scientific inquiry that are needed to support clinical efforts.

The MD/MS in Medical Science degree accepts Drexel medical students who are in good academic standing following completion of the required medical school coursework as outlined in the plan of study, and transfers them into the Graduate School of Biomedical Sciences and Professional Studies where they are enrolled in the second year of the MMS program. If they successfully complete the required coursework, they are eligible for the Master of Science in Medical Science.

At the conclusion of this one-year course of study, students will transfer back to the medical school to complete their requirements for the MD degree.

Additional Information

Drexel University College of Medicine
Division of Pre-medical and Pre-health Programs
Health Sciences Building, 10th floor
60 North 36th Street
Philadelphia, PA 19104
267.359.2761
Email: CoM_MedicalSciences@drexel.edu

Degree Requirements

Required Courses		
MMSP 501S	Research in Medical Science I	6.0
MMSP 502S	Research in Medical Science II	6.0
MMSP 503S	Research Seminar I	3.0
MMSP 504S	Research Seminar II	3.0
MMSP 505S	Introduction to Biomedical Research	2.0
Transfer credits from MD program		10.0
Elective Course		
NEUR 500S	Statistics for Neuro/Pharm Research	
Total Credits		**30.0**

Sample Plan of Study

Second Year

Fall	Credits	Spring	Credits
MMSP 501S	6.0	MMSP 502S	6.0
MMSP 503S	3.0	MMSP 504S	3.0
Transfer credits from MD program	10.0		
MMSP 505S	2.0		
	21		**9**

Total Credits 30

Program Level Outcomes

- Demonstrate medical sciences knowledge and competencies comparable to first year medical school curriculum.
- Demonstrate the ability to be creative, critical, and analytical thinkers.
- Demonstrate knowledge base and skill set compatible with success in health professional programs.
- Demonstrate research design competencies.
- Demonstrate ability to execute a variety of laboratory techniques relevant to their field of research.
- Demonstrate competencies with statistics, data analysis, and interpretation.
- Demonstrate ability to critically read and analyze their own work and the scientific literature and understand its impact on medicine and society.
- Demonstrate their ability to communicate effectively.
- Understand how to conduct research in an ethical manner.
- Build the foundations of a robust professional network.
- Develop a knowledge base, technical skills, and a sense of professionalism necessary for a career that encompasses discovery.
- Develop as a well-rounded, competitive applicant for future educational endeavors in the medical and health sciences.

Public Health MD/MPH

Major: Public Health/Medicine
Degree Awarded: Medical Doctor (MD) and Master of Public Health (MPH)
Calendar Type: Quarter
Minimum Required Credits: 56.0 quarter credits for MPH
Co-op Option: None
Classification of Instructional Programs (CIP) code: 51.2201
Standard Occupational Classification (SOC) code: 11-9111; 21-1091; 25-1071; 21-1094

About the Program

Drexel University College of Medicine offers a five-year dual degree with Drexel University's Dornsife School of Public Health for students to pursue both a medical degree and a master's degree in public health. Most MD/MPH students complete a year of MPH coursework between the 3rd and 4th year of medical school.

In this program, students learn to be physicians with a public-health orientation. The program, built on a foundation of health and human rights, provides strong interdisciplinary training in clinical medicine and population health sciences, including community health and prevention, health care management and policy, epidemiology, biostatistics, and environmental health. Students will choose one of the existing MPH majors to pursue and will complete the selected major requirements.

Students are awarded the MD and MPH degrees at the end of the dual degree program once all degree requirements for the MD and MPH are completed.

Additional Information

For more information about this program, please contact:

DSPH Academic Advising Team
Office of Education
dsphadvising@drexel.edu

Additional information can be found on the Dornsife School of Public Health website, including admissions criteria and how to apply.

Degree Requirements

Program Requirements		
Shared credits with DUCOM for medical school coursework completed		12.0
BST 571	Introduction to Biostatistics	3.0
EPI 570	Introduction to Epidemiology	3.0
HMP 505	Qualitative Data and Mixed Methods Analysis	3.0
PBHL 500	Practical Experience for the Master of Public Health	0.0
PBHL 510	Public Health Foundations and Systems I	4.0
PBHL 511	Public Health Foundations and Systems II	4.0
Major Courses, Electives, and Integrative Learning Experience*		**27.0**
Total Credits		**56.0**

*

Students will follow the required curriculum of their chosen MPH major.

Sample Plan of Study

First Year					
Fall	**Credits**			**Spring**	**Credits**
Drexel University College of Medicine Coursework				Drexel University College of Medicine Coursework	
	0				**0**
Second Year					
Fall	**Credits**			**Spring**	**Credits**
Drexel University College of Medicine Coursework				Drexel University College of Medicine Coursework	
	0				**0**
Third Year					
Fall	**Credits**			**Spring**	**Credits**
Clinical Rotations - 3rd year Clerkships				Clinical Rotations - 3rd year Clerkships	
	0				**0**
Fourth Year					
Fall	**Credits**	**Winter**	**Credits**	**Spring**	**Credits**
BST 571	3.0	EPI 570	3.0	HMP 505	3.0
PBHL 510	4.0	PBHL 511	4.0	PBHL 500	0.0
Major Courses, Electives, and Integrative Learning Experience*	9.0	Major Courses, Electives, and Integrative Learning Experience*	9.0	Major Courses, Electives, and Integrative Learning Experience*	9.0
Shared credits with DUCOM for medical school coursework completed	12.0				
	28		**16**		**12**
Fifth Year					
Fall	**Credits**			**Spring**	**Credits**
4th Year Medical Rotations				4th Year Medical Rotations	
	0				**0**
Total Credits 56					

*

Students will follow the required curriculum of their chosen MPH major.

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