

# MD PROGRAM

## Overview

Penn State College of Medicine offers a complete medical education program leading to the MD degree. Its central campus is located in Hershey, PA adjacent to Penn State Health Milton S. Hershey Medical Center, which is a part of Penn State Health's multi-hospital health system.

In addition to the program's central curriculum in Hershey, there are two parallel curricula options within the overall medical education program. Our Accelerated Pathways are located on the central campus in Hershey, and our University Park Curriculum is located in University Park, PA.

## Our Vision

Our goal is to train humanistic, systems-ready physicians who are adaptive, critical-thinking, collaborative, and scholarly.

All students will be expected to meet our 10 competencies (<https://students.med.psu.edu/md-students/medical-student-competencies-and-subcompetencies-for-graduation/>) and minimum essential standards ([https://students.med.psu.edu/md-students/handbook/#question\\_minimumessentialstandardsformatriculationpromotionandgraduation](https://students.med.psu.edu/md-students/handbook/#question_minimumessentialstandardsformatriculationpromotionandgraduation)) before graduating with an MD degree.

## Our Four-Pillar Model

Traditionally, medical education has focused on two pillars: medical science and clinical care. As healthcare delivery rapidly shifts from physician-centric to patient-centric, and patient care involves both the care of the individual and the care of populations, a more comprehensive model is needed.

At Penn State College of Medicine, the two pillars have transformed to four:

- Biomedical Sciences
- Health Humanities
- Clinical Science
- Health Systems Sciences

As an MD student, you will learn health, healing, and humanity through:

- Early patient experiences
- Small-group learning teams
- Longitudinal care in a team-based medical home
- Peers helping each other
- Quality improvement
- Supportive environment

## Admission Requirements

Penn State University College of Medicine is committed to developing tomorrow's diverse group of humanistic, systems-thinking physicians who will serve people in times of health and in times of illness. We seek strong applicants who come to medicine with a passion to serve and a commitment to excellence and life-long learning. In today's rapidly changing healthcare environment, physicians must acquire a depth of understanding in the life sciences, humanities, clinical sciences and health system sciences. We seek students who bring a full, rigorous and holistic background of study and experiences to medical school

and who are poised for the depth and breadth of learning demanded for tomorrow's physician scholars and leaders.

We accept students in good standing who will be graduates of accredited colleges and universities in the U.S. or Canada before matriculation to Penn State College of Medicine. There are no restrictions on the type of major a student chooses. The Medical College Admission Test (MCAT) is required and used along with other data to predict success in our educational program

## Prerequisite Preparation For Admission

Penn State College of Medicine recognizes that its applicants bring varied and rich undergraduate academic and personal experiences to their admissions credentials. In order to acknowledge the diversity and flexibility of preparation of our applicants, we have chosen to describe the competencies we expect of our students at the time of entry into medical school. Instead of listing prerequisite course requirements, we describe required competencies that will most often be met through traditional and/or newly established interdisciplinary courses of study in an accredited institution of higher learning. We define competency as the acquired knowledge to solve problems in the discipline. Applicants will indicate whether the acquired competency was obtained by course work or other activity such as research or work. Competitive applicants should demonstrate competency in each of the following five areas adapted from the MCAT description (<https://students-residents.aamc.org/applying-medical-school/article/whats-mcat-exam/>):

- **Biological and Biochemical Foundations of Living Systems:** The contribution of biomolecules to the structure and function of cells; the interaction of molecules, cells, and organs in carrying out the functions of living organisms; the interplay of complex systems, tissues and organs in sensing internal and external environments and maintaining internal environment stability in the setting of changing external environments.
- **Chemical and Physical Foundations of Biological Systems:** Application of physical principles to explain how complex living organisms transport materials, sense their environment, process signals and respond to changes; use of principles that govern chemical interactions and reactions to form the basis for the molecular dynamics of living systems.
- **Psychological, Social and Biological Foundations of Behavior:** Biological, psychological and sociocultural factors that influence how individuals perceive, think about and react to the world; how they influence behavior and behavior change, how we think about ourselves and interact with others, and how they influence well-being and access to resources that influence well-being.
- **Critical Analysis and Reasoning Skills:** Comprehension of texts, extrapolating ideas to new contexts; assessing the impact of introducing new factors, information or conditions to ideas from the text.
- **Scientific Inquiry and Thinking & Reasoning:** Knowledge of scientific principles, scientific reasoning and problem-solving, reasoning about the design and execution of research, data-based statistical reasoning, and general mathematical concepts and techniques.

Mastery of competencies is reflected by a strong performance in the classroom and on the MCAT, knowledge gained from formative experiences, and letters of reference. Applicants should have engaged in-depth study based on the AAMC-HHMI Scientific Foundations for Future Physicians (<https://store.aamc.org/scientific-foundations-for-future-physicians-pdf.html>) and AAMC-Behavioral and Social Science

Foundations for Future Physicians (<https://store.aamc.org/behavioral-and-social-science-foundations-for-future-physicians-pdf.html>).

In addition to the above Science and Thinking & Reasoning competencies, Penn State College of Medicine expects applicants to demonstrate achievement of Interpersonal and Intrapersonal competencies. The following competencies are derived from the interpersonal and intrapersonal descriptions within the AAMC Core Competencies for Entering Medical Students (<https://students-residents.staging.aamc.org/applying-medical-school/article/core-competencies/>).

- **Interpersonal:** desire to help others; aware that social and behavioral cues affect interactions and behaviors; interacts effectively with people from diverse backgrounds; works collaboratively in teams; listens effectively and conveys information clearly.
- **Intrapersonal:** behaves in an honest and ethical manner; fulfills obligations in a timely and satisfactory manner; tolerates and adapts to stressful or changing environments; sets for continuous improvement; reflects on actions and solicits feedback.

## Coursework and Experience

Though the most common methods of becoming competent in the Science, Thinking & Reasoning, Interpersonal and Intrapersonal competencies will be formal coursework and personal experiences, we acknowledge that students may accomplish the learning in other ways. Alternative methods of preparation, in combination with coursework, might include research or employment experiences.

## Advanced Placement Coursework

Penn State College of Medicine recognizes advanced placement courses for competencies only if they appear as earned credit on the applicant's college transcript. However, many of the most competitive applicants have fulfilled advanced course work in those same areas during their baccalaureate years.

## How to Apply

We encourage students from diverse backgrounds who have strong potential for leadership and service in broad areas of patient care, research, medical education, administration, and service to apply to our program.

The education of a physician comprises a preparatory phase in college, a rigorous course of professional education leading to the MD degree, postgraduate or residency training, and lifelong continuing education after the conclusion of formal training.

The award of the MD degree signifies the individual has acquired a broad base of knowledge and skills requisite for the practice of medicine. The medical school educational process prepares an individual to be a physician — not a surgeon, psychiatrist, or any other specialist.

We require an online application to be submitted through AMCAS (<https://students-residents.aamc.org/applying-medical-school-amcas/applying-medical-school-amcas/>) and a secondary application for the College of Medicine. Applicants judged to be most qualified are invited for an interview mid-September through March. See a detailed application timeline with deadlines (<https://med.psu.edu/md/apply/deadlines/>).

## Application Process

When applying to the MD Program, please adhere to the following procedure and guidelines:

- Complete and submit an online application (<https://students-residents.aamc.org/applying-medical-school-amcas/applying-medical-school-amcas/>) to the American Medical College Application Service (AMCAS), indicating Penn State College of Medicine as one of your medical schools of choice. For more information, call the Association of American Medical Colleges (AAMC) at 202-828-0600.
- Upon receipt of your initiated AMCAS application, beginning in July, Penn State College of Medicine will notify you via email to complete and submit our web-based Secondary Application.
- Provide AMCAS with official transcripts, service fees, and letters of recommendation. AMCAS will verify application information and send it electronically to Penn State College of Medicine. We must receive your fully verified and processed AMCAS application by November 15.
- Applicants seeking an application fee waiver are reviewed on an individual basis only after an AMCAS fee waiver has been granted and appropriate documentation submitted.
- Letters of recommendation are required from each institution that has granted you a degree and any institution you are attending or plan to receive a degree. A composite recommendation from a pre-professional committee is strongly recommended. If there is no such committee, letters should be solicited from individual faculty members as outlined in the secondary application instructions. If there is a pre-professional committee and a recommendation will not be forthcoming, you should explain why in a separate letter to the admissions committee. Applicants who have been enrolled in a graduate program are required to provide an additional letter of support from their graduate program. Please note: The College of Medicine is only accepting letters through the AMCAS letter system (<https://students-residents.aamc.org/applying-medical-school-amcas/applying-medical-school-amcas/>). You must send, or have sent, your letters directly to AMCAS. Please reference the website above or call AMCAS at 202-828-0600 for further clarification.
- It is the policy of the College of Medicine not to grant requests for late application.
- It is the applicant's responsibility to see that the application is complete. A completed application is one in which all necessary materials have been submitted with all questions on each form completely and answered, the \$80 application fee has been paid, and the required letters of recommendation have been received and processed by AMCAS.

## Correspondence Policy

The "preferred" addresses (mail and email) on applicants' AMCAS applications are the addresses to which any printed correspondence from Penn State College of Medicine will be sent. If your preferred addresses (mail or email) change after you have submitted your application to AMCAS, you will need to enter the new addresses on your electronic application, then re-certify and re-submit your application to AMCAS with the updated addresses.

Email is a primary and official mode of communication between the College of Medicine and its applicants. Some correspondence from the College of Medicine is sent only by email and will not be sent to you unless you provide an email address. Due to the importance of the admissions process, we recommend that applicants establish a unique email address for during the process and check that email address

regularly throughout the process. Be sure to keep both your email address and your preferred address up-to-date at all times.

It is the sole responsibility of the applicant to make sure that the email address indicated as "preferred" on the AMCAS application is functional. The College of Medicine is not responsible for email that unable be delivered or for emails deleted as bulk, spam, or the like.

## Interview Process

The interview is an essential component of the selection process. It provides vital information about the applicant that is impossible to obtain by any other means.

Faculty interviews with critical evaluations are the only method within the admissions process for the assessment of the important nonacademic attributes of applicants. The selection committee places great importance on these evaluations in making decisions on admission.

**Dates:** Monday, Wednesday and Friday, mid-September through March.

**Interview day:** One half of the applicants will interview in the morning and the other half in the afternoon. Both groups will tour the facility and lunch together. Two or three faculty members will interview each applicant.

## Interview Agenda

### Group 1

8:30 a.m.: Arrival and registration

8:45 a.m.: Welcome and overview of day's activities

9 to 11 a.m.: Faculty interviews

### Group 2

10:30 a.m.: Arrival and registration

10:45 a.m.: Welcome and overview of day's activities

### Groups 1 and 2

11:15 a.m.: College of Medicine presentation and Q&A

Noon: Lunch with medical students

1 p.m.: Tour of College of Medicine and Medical Center Complex

### Group 1

2 p.m.: Group checks out and is finished for the day

### Group 2

2 to 4 p.m.: Faculty interviews

4:15 p.m.: Group checks out and is finished for the day

Official action following the interview is made by the medical student selection committee. The action taken by the committee may be acceptance, hold, or rejection. Candidates will be notified of a decision within six to eight weeks of the interview.

## International Applicants

International applicants must complete all academic requirements for admissions in an accredited United States or Canadian college or university.

They must also follow the same application procedures (<https://med.psu.edu/md/apply/process/>), and adhere to the same timeline and deadlines (<https://med.psu.edu/md/apply/deadlines/>) as domestic applicants.

## Obtaining Visa Eligibility Documentation

If you're accepted to the College of Medicine, you will need to officially accept your offer of admission. After you have accepted your offer of admission, the Directorate of International Student and Scholar Advising (DISSA) will contact you by email to provide you with a link and a set of instructions for how to access their online system (iStart).

There, you will be directed to work through a pre-arrival checklist that helps guide newly admitted international students through the process of requesting visa eligibility documentation (I-20/DS-2019) and/or gaining clearance to register for classes, in addition to other crucial steps toward attending the Penn State College of Medicine.

**Please note:** All newly admitted international students need to access DISSA's iStart system and complete the **Request I-20/DS-2019 OR Provide Current Visa Documentation** step. It can take DISSA two to three weeks to process requests for an I-20/DS-2019. If you are outside the U.S. and must apply for a student visa, you should submit your request for an I-20/DS-2019 no later than May 15 of your year of matriculation, to allow time for you to obtain a visa and make travel arrangements. Please be guided accordingly in submitting documents to DISSA.

Accepted international applicants are sent a checklist detailing the above requirements, as well clearly indicating the deadlines for submission of these documents.

If the checklist items are not fulfilled by the indicated deadlines, candidates will be withdrawn from the entering class without the possibility of reinstatement.

## Financing Your Medical Education

Accepted international applicants must verify the ability to finance their medical education. Foreign nationals are not eligible for financial support from the federal government or Penn State University. Learn about the financial aid verification procedure for Penn State University and the College of Medicine (<https://global.psu.edu/category/you-arrive/>).

## Questions?

If you have questions about your application or about admissions, please contact the Penn State College of Medicine Office of Student Affairs at 717-531-8755 or [StudentAdmissions@pennstatehealth.psu.edu](mailto:StudentAdmissions@pennstatehealth.psu.edu).

If you have questions about your proof of finances and the verification procedure, please contact Student Aid at 717-531-7052 or [StudentAid@pennstatehealth.psu.edu](mailto:StudentAid@pennstatehealth.psu.edu).

## Core Curriculum and Competencies

The central curriculum and the two parallel tracks share numerous curricular elements, the result of deliberate educational program design that ensures comparability. At the core, they share the same vision, core curriculum, four-phase curriculum framework and the same graduation and education program competencies.

## MD Program Vision

To guide the development of a humanistic, systems-ready physician who is adaptive, critical thinking, collaborative and scholarly.

## Core Curriculum

The core curriculum, defined by the Committee on Undergraduate Medical Education (CUMED) is built on a four-pillar framework of 1) Biomedical Sciences, 2) Health Humanities, 3) Clinical Sciences, and 4) Health Systems Sciences.

## Four-Phase Curriculum Framework

The central curriculum and the two parallel curricula are designed around a four-phase framework:

- **Phase I - Foundations:** Students in Penn State College of Medicine, whether in the Hershey central curriculum (HC), the 3+ parallel track at Hershey (HC3+) or the University Park curriculum parallel track (UPC) engage in two common instructional formats – small group problem-based learning and direct patient experiences – with variations on the intensity with which each is used. For both HC and HC3+ lectures supplement the instructional formats. At UPC, which is a “no lecture” track, the more extensive small group problem-based learning sessions, which are referred to as Inquiry groups (IQ), and science seminars serve as the instructional formats that subsume the content expectations typically delivered in lectures. Students in HC/HC3+ take the foundational courses sequentially prior to clerkships. Students in UPC take some foundational courses before and some after clerkships.
- **Phase II - Clinical Core:** Student all complete the same eight core clerkships, though the instructional format may be blocks or longitudinal. All students must take USMLE Step 1 before progressing to Phases III/IV.
- **Phase III/IV - Discovery & Residency Prep:** Two required courses – Translating Health Systems Science to the Clinical Setting and Profession of Medicine III (Transition to Residency) are common for all students. Additionally, all students must complete two acting internships, a Humanities selective, and electives to enhance their-competency-directed progression in learning, professional identity formation and residency preparation.

The phases intersect and transitions are flexible, depending on the curriculum option.

## Core Competencies

The 10 core competencies for Penn State College of Medicine are:

1. Patient care
2. Knowledge for practice
3. Practice-based learning and improvement
4. Interpersonal and communication skills
5. Professionalism
6. Systems-based practice
7. Inter-professional collaboration
8. Personal and professional development
9. Medical humanities
10. Critical thinking

The central Hershey Curriculum and the two parallel curricula share, in addition, the following:

- Governed by the same curriculum committee (CUMED)
- Participate in the same course and clerkship directors' subcommittees of CUMED
- Report to the same Vice Dean for Educational Affairs
- Grades reported through a single individual
- Use the same curriculum management system
- Use the same student assessment system
- Use the same standardized approach to formative feedback
- Use the same mid-rotation feedback forms

- Use the same school-wide policies on mistreatment and respect in the learning environment
- Use the same criteria for grades in courses and clerkships
- Have the same clerkship requirements, NBME shelf exams and methods of grade calculations
- Use the same evaluation system for end of course and clerkship student feedback
- Require the Medical Student Research Project (MSR) for all students

## Hershey Curriculum

The practice of medicine is undergoing major changes. Many of these changes are part of a transformation that will alter the way healthcare is organized and delivered in the future.

The four-phase curriculum is learner-centered and has been developed to prepare you for a successful career in a more integrated healthcare system.

The committee on undergraduate medical education, composed of faculty and students, meets regularly to evaluate and modify the curriculum to keep pace with new knowledge and changes in healthcare delivery.

Through our curriculum, you will gain:

- A well-grounded connection between medical science and patient care
- A commitment to evidenced-based medicine
- An appreciation of the patient experience of illness
- A commitment to humanistic patient care
- Advocacy for access to all and reduction in healthcare inequities

## Patient Navigator Program

Penn State College of Medicine is among 11 of the nation's medical schools – including the University of Michigan, Vanderbilt, and NYU – to be awarded a \$1 million grant from the American Medical Association to transform the way medical students are prepared for today's health system. One of our initiatives is the patient navigator program, an opportunity for students to guide patients through the complicated process of getting the care they need.

MORE INFORMATION ABOUT THE PATIENT NAVIGATOR PROGRAM (<https://med.psu.edu/md/hershey/>)

## Emphasis on Humanities

We value the art of healing – not just the science of it. Penn State College of Medicine was the first medical school in the country to have a dedicated humanities department, and this focus is reflected in our curriculum:

- **Phase 1:** Humanities coursework every Tuesday morning
- **Phase 2:** Humanities stripe across clerkships (“backstory rounds”)
- **Phase 4:** Month-long humanities selective (required). Recently offered courses include:
  - Human Virtue
  - Jazz and the Art of Medicine
  - Graphic Storytelling (<https://sites.psu.edu/graphicnarratives/>)
  - Medical Narratives

Additional humanities activities include the Farmers Market in Hershey, the arts and literature journal Wild Onions (<https://sites.psu.edu/>)

wildonions/), and the Kienle Center Players (<https://sites.psu.edu/kienlecenter/>), a drama group.

## Curriculum

### Year 1

#### • Transition to Medical School

- *Two weeks in the middle of July*
- This course, the first you will attend at Penn State College of Medicine, is designed to help you make the transition to medical education and training and to begin to build some of the skills necessary for success in medical school and a career in medicine. The transition to medical school is a very important time in the life of every doctor. No longer are you in college or a master's program, striving for high grades as an end in and of themselves, or as a ticket to gaining admission to medical school.

These first weeks mark that time when you join the collegial ranks of the profession, and medical school represents the first step of on-the-job training. The Transitions series continues throughout your medical school curriculum as you transition into clinical rotations and prepare for residency.

#### • Medical Humanities

- *Early August to Mid-December*
- Medical Humanities includes topics such as empathy, suffering and resilience, and the cultures of medicine and medical education.

#### • The Science of Mind-Body

- *January to Mid-February*
- The Science of Mind-Body explores topics such as placebos, learned helplessness, behavior change and groupthink.

#### • Critical Thinking

- *End of February to End of April*
- Critical Thinking takes up topics such as metacognition, cognitive errors and biases, intuitive versus analytic thinking, and medical decision-making in the face of uncertainty.

#### • Science of Health Systems

- *End of July through February, with breaks*
- This longitudinal course spans the full medical school experience with the main focus in Phases 1 and 2. In this new health systems component, students will experience a new Science of Health Systems curriculum, where they will learn the foundations of health systems, health care delivery, financing, insurance, population and public health, socio-ecological medicine, quality, safety, value, and teamwork and leadership. Additionally, students will serve as patient navigators within the health system. Both the curriculum and patient navigator experience will allow students to develop the knowledge, skills, and attitudes to function effectively amid the complexities of an evolving health system.

#### • Foundations of Patient-Centered Care

- *Middle of July through February, with breaks*
- This longitudinal course, which spans phases I and II of medical school training at Penn State College of Medicine, is administered within each student's respective Society and is integrated with other first- and second-year courses. The course consists of three components: communication/clinical interviewing, physical

examination, and integration, application and advancement teaching sessions.

#### • Scientific Principles of Medicine

- *End of July through Mid-September*
- This course will provides a wide-range of scientific knowledge that underlies medical practice. Relevant material for SPM is drawn from biochemistry, physiology, histology, genetics, cell biology, molecular biology, and hematology. In addition, fundamental concepts of pharmacology are introduced. Because of the breadth and depth of material presented in this course, SPM is a team-taught course involving faculty with multiple expertise. As a consequence of this diversity, you will be exposed to a number of different teaching philosophies.

#### • Host Defense/Host Response

- *Mid-September to Mid-November*
- The Host Defense/Host Response (HDHR) course addresses how the body maintains wellness and responds to threats. The primary learning goals focus on concepts in microbiology and infectious disease, immunology and oncology. This eight-week integrated course spans September to November of the Phase I first year. Problem-based learning (PBL) serves as the course's backbone, complemented by large-group interactive sessions, patient encounters and clinical reasoning sessions. There are also opportunities to integrate Health Systems Science, Health Humanities and frontiers of inquiry to add perspective and depth to the learning experience.

#### • Form and Function

- *Mid-April to End of May*
- This course has three major components. The first is dedicated to orthopedics, the second to rheumatology, and the third to dermatology. The course integrates dermatology, immunology, family medicine (sports medicine), internal medicine (rheumatology), orthopedics, pathology, and pediatrics (rheumatology). The subject matter is linked as joint disease connects orthopedics and rheumatology and, immunology connects rheumatology and dermatology. The lecture content and problem-based learning cases will help to illustrate the "connectedness" of this block of material.

#### • CardioRespiratory Medicine and Anatomy

- *Mid-November to End of February*
- The CardioRespiratory and Anatomy course is the students' first intensive exposure to integrative physiology. Cardio-Respiratory Medicine requires mastery of cardiovascular and respiratory physiology, anatomy, embryology, histology, pathology, immunology and pharmacology, as well as the clinical science underlying cardiovascular and respiratory disease.

Lectures and problem-based learning cases are augmented by hands-on EKG sessions, training in the techniques of cardiac physical examination, workshops, lung and heart sounds simulations and a ventilation simulation laboratory. Cardiovascular disease remains a leading killer of Americans and lung disease is prevalent; knowledge gained here will be useful throughout your entire medical career.

- **Renal Medicine**

- *End of February to End of March*
- The course provides an introduction to the physiology, anatomy, pharmacology, microbiology, and pathology of the kidneys and urinary tract. Topics include the relationship between structure and function of urinary system; fluid, electrolyte and acid/base homeostasis in health and disease; etiology and manifestations of common diseases of the kidneys; and cellular processes that mediate the actions of pharmacological agents active in the urinary system.

- **Clinical Skills Immersion**

- *End of March / Beginning of April*
- This is a week of clinical skills immersion.

- **Primary Care Preceptorship**

- *One week in April*
- The Primary Care Preceptorship is an optional experience during spring break that provides an opportunity for first-year medical students to participate in an organized educational experience with physicians who are board certified in the specialties of family medicine, internal medicine, and/or pediatrics. This course is scheduled for one week and requires each student to complete 40 hours within the ambulatory care setting of his/her designated preceptor.

All clinical training sites are reviewed to ensure the learning environment can provide students with the opportunity to achieve defined learning objectives and the physicians who teach are up-to-date on board certifications. The course offers a clinical experience early in the students' medical education and exposure to the fundamentals of patient care within the emerging models of health care in the 21st century. Students are offered clinical training experiences within the setting of the Commonwealth of PA, participating practices nationally, and an international track in affiliation with Global Brigades.

- **Objective Structured Clinical Examination (OSCE)**

- *May*
- This exam allows students to practice and demonstrate clinical skills in a standardized medical scenario. Students have the opportunity to demonstrate competency in communication, history taking, physical examination, clinical reasoning, medical knowledge, and integration of these skills. It is meant to be a fair and accurate way to assess competence, as well as identify areas that need more work and practice.

- **Medical Student Research and Global Health**

- *Summer, end of Year 1*
- Over the summer, students have the opportunity to do research for the Medical Student Research project and/or participate in Global Health opportunities.

## Year 2

- **Medical Student Research and Global Health**

- *Summer, Start of Year 2*
- Over the summer, students have the opportunity to do research for the Medical Student Research project and/or participate in Global Health opportunities.

- **Medical Ethics and Professionalism**

- *August through Mid-December*
- Medical Ethics and Professionalism provides students with a framework for decision making in the face of common ethical challenges and addresses issues involving autonomy, informed consent, advance care planning, medical mistakes and truth-telling.

- **Science of Health Systems**

- *August through Mid-February, with breaks*
- This longitudinal course spans the full medical school experience with the main focus in Phases 1 and 2. In this new health systems component, students will experience a new Science of Health Systems curriculum, where they will learn the foundations of health systems, health care delivery, financing, insurance, population and public health, socio-ecological medicine, quality, safety, value, and teamwork and leadership. Additionally, students will serve as patient navigators within the health system. Both the curriculum and patient navigator experience will allow students to develop the knowledge, skills, and attitudes to function effectively amid the complexities of an evolving health system.

- **Foundations of Patient-Centered Care**

- *August through End of January, with breaks*
- This course, which spans Phases I and II of medical school training at Penn State College of Medicine, is administered within each student's respective Society and is integrated with other first- and second-year courses. The course consists of three components: communication/clinical interviewing, physical examination, and integration, application and advancement teaching sessions.

- **Gastroenterology and Nutrition & Anatomy**

- *August to Mid-September*
- This course provides exposure to the foundational basic science and advanced concepts necessary to understand the approaches used to diagnose, treat and manage disorders of nutrition, the oropharynx, esophagus, stomach, small and large bowel, pancreas, biliary system and liver. Foundational material will include integrative physiology of these organs.

The students will develop the ability to differentially diagnose, describe treatments, and review management of nutritional disorders and support as well as diseases of the GI organs and liver. The pathogenesis, pathology, differential diagnosis, clinical course, and complications of GI and liver diseases will be covered along with aspects of clinical management, especially the pharmacology of drugs used to treat them. The course will augment large-group classroom learning opportunities with problem-based learning, wet laboratory and simulation laboratory experiences.

- **Endocrinology and Reproductive Medicine and Anatomy**

- *Mid-September through Mid-November*
- The goal of this course is to learn about the general principles, physiology actions, causes and consequences of insufficiency or excess chemical messengers that function as hormones. These principles are then incorporated into the anatomy, histology and physiology of the female and male reproductive system, including pregnancy. Basic disease processes and therapeutics, including pharmacology, are also covered.

- **Neural and Behavioral Science and Anatomy**
  - *Mid-November to Middle of February, with break*
  - NBS incorporates basic neuroanatomy, neurophysiology, neurology, neuropathology, neuropharmacology, anesthesia, ophthalmology, radiology, behavioral science, and psychiatry. The goal is for students to understand the structure of the human nervous system, the biological mechanisms that underlie the functions of the nervous system, the neural basis of behavior, and the diagnosis, pathology and treatment of diseases that affect the nervous system by incorporating these topics with clinical relevance. The course also includes pathology wet labs and Neurology Day, where students interact in small groups with 14 patients who have various neurological disorders.
- **Communication**
  - *Beginning of January to Beginning of February, with break*
  - Communication focuses on exploring assumptions and biases that impact communication and communicating in dyads, teams, and larger systems.
- **Objective Structured Clinical Examination (OSCE)**
  - *December*
  - This exam allows students to practice and demonstrate clinical skills in a standardized medical scenario. Students have the opportunity to demonstrate competency in communication, history taking, physical examination, clinical reasoning, medical knowledge, and integration of these skills. It is meant to be a fair and accurate way to assess competence, as well as identify areas that need more work and practice.
- **Transition to Clerkships**
  - *End of February*
  - This course focuses on successfully transitioning students from preclinical to clinical training, building on the knowledge and clinical skills covered in Phase I. It includes advanced clinical skills training through simulation as well as several fundamental medical principles from various specialties that will be expanded and reinforced in subsequent clerkships. In addition, roles and responsibilities of a third-year medical student are covered through discussions on reflection, professionalism, and communication.
- **Clerkships**
  - *Beginning at the End of February*
  - Required core clinical clerkships begin toward the end of Year 2. Clerkships are taught in three blocks. See clerkship details here (<https://students.med.psu.edu/md-students/clerkships/>).
    - Block 1 clerkships are end of February through mid-June.
    - Block 2 clerkships are mid-June through mid-September.
    - Block 3 clerkships are mid-September through December.
- **Health Systems in Clerkships**
  - Health systems is embedded in the clerkships; there is an in-depth focus on health systems in the health equity clerkship.
- **Humanities (Kienle Groups)**
  - *Select Fridays during Clerkships, March through January*
  - The Kienle Group curriculum is part of a broader Humanities stripe across the entire Penn State curriculum and provides an opportunity for students to talk candidly about their personal challenges and perspectives as they move through their clinical

clerkships. The sessions take place on designated Fridays during the course of the clerkship year.

- **Clinical Assessment Week, Career Exploration and Synthesis**
  - *June*
  - Students take shelf exams during assessment weeks at the end of each block. The Career Exploration and Synthesis session will take place over a week and a half.
- **Integrated Science**
  - *Selected Fridays during Clerkships, March through January*
  - This course will focus on building an integrated sciences approach into third-year medical students' clinical training. Mastery of the processes covered by the course will enhance students' ability to think critically about complex, clinical problems through the respective lenses of biomedical sciences, systems and social sciences. This course incorporates a humanities stripe, known as Kienle Groups, dedicated to student reflection on clinical experiences while providing a supportive environment for sharing difficulties and insights.

### Year 3

- **Clerkships**
  - *Beginning at the End of February*
  - Required core clinical clerkships begin toward the end of Year 2 and continue in Year 3. Clerkships are taught in three blocks. See clerkship details here (<https://students.med.psu.edu/md-students/clerkships/>).
    - Block 1 clerkships are end of February through mid-June.
    - Block 2 clerkships are mid-June through mid-September.
    - Block 3 clerkships are mid-September through December.
- **Assessment Weeks, Career Exploration and Synthesis**
  - *September, December*
  - Two-week Career Exploration and Synthesis courses occur after the third rotation of each block. Students take shelf exams during assessment weeks at the end of each block.
- **Integrated Science**
  - *Select Fridays during Clerkships, March through January*
  - This course will focus on building an integrated sciences approach into third-year medical students' clinical training. Mastery of the processes covered by the course will enhance students' ability to think critically about complex, clinical problems through the respective lenses of biomedical sciences, systems and social sciences. This course incorporates a humanities stripe, known as Kienle Groups, dedicated to student reflection on clinical experiences while providing a supportive environment for sharing difficulties and insights.
- **Kienle Groups**
  - *Select Fridays during Clerkships, March through January*
  - The Kienle Group curriculum is part of a broader Humanities stripe across the entire Penn State curriculum and provides an opportunity for students to talk candidly about their personal challenges and perspectives as they move through their clinical clerkships. The sessions take place on designated Fridays during the course of the clerkship year.

- **Health Systems in Clerkships**
  - Health systems is embedded in the clerkships; there is an in-depth focus on health systems in the health equity clerkship.
- **Objective Structured Clinical Examination (OSCE)**
  - *January*
  - This exam allows students to practice and demonstrate clinical skills in a standardized medical scenario. Students have the opportunity to demonstrate competency in communication, history taking, physical examination, clinical reasoning, medical knowledge, and integration of these skills. It is meant to be a fair and accurate way to assess competence, as well as identify areas that need more work and practice.
- **USMLE Study**
  - *January through March*
  - Upon completion of Phase II clerkships, students are given a dedicated study period for USMLE I.
- **Translating Health Systems**
  - *End of March*
  - Phase III begins with a two-week Translating Health Systems intersession. This course is designed to help students apply concepts of patient safety, quality improvement, value and teams to the clinical setting. It provides students with opportunities to actively identify patient safety issues and develop a quality improvement project proposal. By design, this course emphasizes teamwork, an essential component in providing quality patient care. The goal is to guide learning in these concepts so that students will have the base knowledge to help improve care of their patients and the health system in which they will work during the fourth year of medical school and in residencies.
- **Phase III: Discovery**
  - Students enter Phase III: Discovery following USMLE Board Prep. The Discovery Phase provides students with opportunities for additional career explorations, time to synthesize principles learned in Phase II and additional time for focused research. This phase includes the Translating Health Systems course, where students apply learned health systems principles. As students confirm their residency choice, they move into Phase IV, Residency Prep.
- **Phase IV: Residency Prep**
  - Phase IV: Residency Prep provides students with opportunities to refine knowledge and skills as they prepare for entry into residencies. This phase includes variety of electives, two acting internships and a Humanities selective. Students also prepare for and take the USMLE Step 2 CK and CS in the earlier part of Year 4. The phase is completed by the capstone course, Transition to Internship, followed by graduation.

## Year 4

- **Phase IV: Residency Prep**
  - *July to May, with breaks*
  - Phase IV includes residency preparation, interviews and two total acting internships in different clinical fields or one acting internship and one critical care rotation.

Additional requirements include one humanities selective, completing six total electives (to include electives from Phase II and Phase III, and the Transition to Internship course. All graduation requirements are confirmed to be completed during

this time. The College of Medicine offers a variety of clinical, teaching and research electives for students during this phase.

- **USMLE Step 2 CK & CS**
  - *July to October*
  - Students prepare for and take the USMLE Step 2 CK and CS in the earlier part of Year 4.
- **Transition to Internship**
  - *Beginning of May to Mid-May*
  - The Transition to Internship course occurs at the end of each student's medical school career and builds on these concepts in preparation for residency training. Transition to Internship is the final requirement for each graduating fourth-year medical school class, taking place just prior to medical school graduation. Its structure includes both large group workshops (involving the entire fourth-year class) and a number of small group "selective" sessions. Transition to Internship was designed with goals of providing review and practice of key clinical skills and concepts, as well as introduction of new information regarding communication and collaboration with other health professionals, teaching and evaluation strategies for interns in their educator roles and practice in effective patient handoffs. The course also includes time for reflection on professional responsibilities, personal stressors and individual support systems.
- **Graduation**
  - *Mid-May*
  - See the graduation section of this site (<https://students.med.psu.edu/graduation-information/>) for more details.

## University Park Curriculum

Penn State College of Medicine's University Park curriculum uses an exciting inquiry-based educational model to promote learning. Our curriculum uses early clinical exposure to provide students with early exposure to patient care. This forms the substrate to holistically prepare students for the ongoing practice of evidence-based medicine in a rapidly changing healthcare environment.

Penn State College of Medicine has a tradition of excellence in education that is scientifically and clinically rigorous with a deep foundation in scholarship and humanistic care. Building on our experience, and benefiting from the resources that our regional campus in University Park offers, we invite you to learn in an environment that fosters inter-professional team skills, curiosity, and a commitment to the calling of medicine.

## Curriculum Highlights

### Patient-based Experiences

Early clinical immersion, integrated with active small group discussions, drives the exploration of the Four Pillars of the Penn State College of Medicine: Foundational Sciences; Clinical Sciences; Health Systems Science and Health Humanities.

### Individualized Mentoring

Our small class size allows for regular and frequent individual mentoring from core faculty as well. It also promotes longitudinal learning relationships with a diverse group of health professionals in our clinical practice and community service sites.



## Experiential Learning

The UP curriculum is designed to be experiential. Individuals learn best when connecting knowledge and skills to experience. Your learning centers around patients and health care communities you encounter, supported by colleagues, faculty, and the ample resources of the College of Medicine and Penn State.

## Community Engagement

You will engage with patients, community representatives, and health system leaders to learn and promote community-based solutions to improve healthcare outcomes.

## A Culture of Respect and Humanistic Care

Penn State College of Medicine is home to the nation's first Department of Humanities. We remain committed to developing humanistic, curious health care professionals. The UP Curriculum is designed to support and enhance the role of the Health Humanities through patient experiences, integrated small group reflection, and faculty mentorship.

## Curriculum

### Year 1

- **Transition to Medicine I**
  - *Last half of July*
  - This time helps you transition to University Park and build skills necessary for success in medicine.
  - These first weeks are when you join the collegial ranks of the profession, and begin first steps of your on-the-job training.
- **Patients and Sciences 1**
  - *Middle of July to middle of December, with November break*
  - The clinical experiences in Patients and Sciences 1 engage students in meaningful, patient-centered roles within primary care practice sites. Students bring patient cases to inquiry group (IQ) sessions to co-create learning objectives around the four core Penn State College of Medicine pillars (Biomedical, Health Humanities, Health Systems and Clinical Sciences) with faculty facilitators. Students then research the learning objectives for collaborative discussion, practical application, and additional question generation through the rest of the week and beyond. Students learn history, physical exam, and presentation skills in PS1 and PS2 and practice these skills in their clinical immersion sites. In addition to the IQ groups and clinical immersions, students participate in collaborative science tutorials for deeper exploration of biomedical science concepts.
- **Patients and Sciences 2**
  - *January to June*
  - The experiences in Patients and Sciences 2 build on what is learned in Patients and Sciences 1.
- **Career Exploration/Preceptorship Week**
  - *Middle of March*
  - This week provides first-year medical students the opportunity to explore medical specialties of their choice. Students are encouraged to engage with practices either in or outside of the State College area to experience different disciplines from a more personal vantage.

- **Reflection and Assessment Weeks**

- *End of Sept/Dec/March/May*
- These weeks are reserved for reflection on educational goals and accomplishment and formal assessment.

- **Portfolio Development**

- *Various times throughout first year*
- Beginning in the first year and continuing through until graduation, students will periodically work on their learning portfolios. These are compilations of the student's performance that provide some additional qualitative evidence of developmental progression towards the competencies and sub-competencies of the medical school.

- **Scholarship/Research and Global Health**

- *Summer, end of Year 1*
- Students have the opportunity to do research for the Medical Student Research project and/or participate in Global Health opportunities.

### Year 2

- **Scholarship/Research and Global Health**

- *Summer, start of Year 2*
- As above.

- **Transition to Clerkships II**

- *Beginning of Year 2*
- This course focuses on successfully transitioning students from preclinical to clinical training, building on the knowledge and clinical skills covered in Phase I. It includes advanced clinical skills training through simulation as well as several fundamental medical principles from various specialties that will be expanded and reinforced in subsequent clerkships. In addition, roles and responsibilities of a second-year medical student are covered through discussions on reflection, professionalism, and communication.

- **Clerkships**

- *August of 2nd year through July of 3rd year*
- Required core clinical clerkships in Internal Medicine, Family and Community Medicine, Psychiatry, Health Equity, Neurology, Obstetrics and Gynecology, Pediatrics and Surgery are offered at the UP campus. Clerkships at the UP campus are conducted through a Longitudinal Integrated (LIC) model. This model allows for continuity of learners, teachers, patients and practices over the course of an entire year and provides the student an opportunity to display developmental growth over all of the core clerkships.

- **Clinically Integrated Medical Sciences ("Marsh Rounds")**

- *Year 2, with breaks*
- This course will focus on building an integrated sciences approach into second-year medical students' clinical training. Mastery of the processes covered by the course will enhance students' ability to think critically about complex, clinical problems through the respective lenses of biomedical sciences, systems and social sciences. This course incorporates a humanities stripe dedicated to student reflection on clinical experiences while providing a supportive environment for sharing difficulties and insights. Dr. Marsh was the Founding Dean of the

University Park Regional Campus and continues to be a valued and beloved educator for the UP medical students.

- **Humanities**

- *Year 2, with breaks*
- Humanities coursework continues through Year 2 primarily through the use of "Kienle" small groups that are conducted most all weeks of the year. These groups are designed to directly address some of the difficult challenges that medical students encounter during their growth and professional development in this first clinical educational year. The Drs. Kienle were professors in the early years of the College of Medicine and were dedicated toward supporting the Office of Medical Humanities.

- **Health Systems in Clerkships**

- *Year 2, with breaks*
- Health Systems in Clerkships accompanies the Year 2 Clerkships.

- **Assessment**

- There are seven clerkship exams during Year 2.

### Year 3

- **Patients and Sciences 4**

- The experiences in Patients and Sciences 4 are designed to build on what is learned in Patients and Sciences 1 and 2. This return to basic science is specifically engineered to allow students deeper explorations of core foundational science elements having within a robust context of clinical experience. Roughly ½ day per week is maintained in a longitudinal clinical experience of the student's own choosing.

- **Assessment**

- There are serial formative quizzes and two summative exams.
- To benchmark basic science progress, the CBSE exam is delivered at the start and end of PS4.
- Two reflective writing exercises are submitted based on the students longitudinal clinical experience and are kept for the learner portfolio.

- **USMLE Study**

- USMLE study begins midway through the third year.
- Students are required to take USMLE Step 1 prior to the start of the Translating Health Systems course.
- Students will often take Step 2 CK shortly after taking USMLE Step 1. In any case, the examination must be taken prior to October 31st of the 4th year.
- USMLE Step 2 CS must be completed by the end of Dec in the 4th year.

- **Translating Health Systems**

- Phase III includes a two-week Translating Health Systems intersession. This course is designed to help students apply concepts of patient safety, quality improvement, value, and teams to the clinical setting. It provides students with opportunities to actively identify patient safety issues and develop a quality improvement project proposal. By design, this course emphasizes teamwork, an essential component in providing quality patient care. The goal is to guide learning in these concepts so that students will have the base knowledge to help improve care of their patients and the health system in which they will work during the fourth year of medical school and in residencies.

- **Phase III: Discovery**

- Phase III includes a discovery phase which allows for board preparation and career exploration as well as acting internships.

- **Phase IV: Residency Prep**

- Phase IV includes residency preparation, interviews and two total acting internships in different clinical fields or one acting internship and one critical care rotation.

### Year 4

- **Phase IV: Residency Prep**

- *Year 4, with breaks*
- Phase IV includes residency preparation, interviews and two total acting internships in different clinical fields or one acting internship and one critical care rotation. Students also prepare for and take the USMLE Step 2 CK and CS in the earlier part of Year 4. (see above)

- **Transition to Internship**

- *Spring (Usually the 1-2 weeks immediately preceding Commencement and Graduation)*
- Transition to Internship, occurs at the end of each student's medical school career and builds on these concepts in preparation for residency training. POM III is the final requirement for each graduating fourth year medical school class, taking place just prior to medical school graduation. Its structure includes both large group workshops (involving the entire fourth-year class) and a number of small group "selective" sessions. POM III was designed with goals of providing review and practice of key clinical skills and concepts, as well as introduction of new information regarding communication and collaboration with other health professionals, teaching and evaluation strategies for interns in their educator roles, and practice in effective patient handoffs. The course also includes time for reflection on professional responsibilities, personal stressors and individual support systems.

- **Graduation**

- *May*

## Accelerated Hershey Curriculum

Penn State College of Medicine has launched a set of "3+" pathways that allow students to select a concentration of study that will enhance/accelerate their professional development.

### Option 1: Three-Year MD Accelerated Pathways

Students will complete the medical degree in three years followed by residency training at Penn State in their chosen specialties, which currently include family medicine, emergency medicine, internal medicine, neurosurgery and orthopaedics. The benefits of the accelerated option include reduction of the cost of medical education and earlier career entry. The linkage of undergraduate and graduate medical education optimizes opportunities for continuity of patient care, mentoring and advising.

### Option 2: Clinician Scientist and Clinician Educator Pathways

These pathways allows students to achieve school-wide competencies and complete the core graduation requirements in three years while devoting the fourth year of medical school to either research (Clinician

Scientist Pathway) or a Master of Education degree (Clinician Educator Pathway).

MORE INFORMATION ABOUT THE ACCELERATED HERSHEY CURRICULUM (<https://med.psu.edu/md/accelerated/>)

## Curriculum

### Year 1

- **Profession of Medicine I**
  - *Two weeks in the middle of July*
  - This course, the first you will attend at Penn State College of Medicine, is designed to help you make the transition to medical education and training and to begin to build some of the skills necessary for success in medical school and a career in medicine. The transition to medical school is a very important time in the life of every doctor. No longer are you in college or a master's program, striving for high grades as an end in and of themselves, or as a ticket to gaining admission to medical school. These first weeks mark that time when you join the collegial ranks of the profession, and medical school represents the first step of on-the-job training. Profession of Medicine continues throughout your medical school curriculum as you transition into clinical rotations and prepare for residency.
- **Medical Humanities**
  - *Beginning of August to first week in November*
  - Medical Humanities includes topics such as empathy, suffering and resilience, and the cultures of medicine and medical education.
- **The Science of Mind-Body**
  - *December to end of February, with break*
  - The Science of Mind-Body explores topics such as placebos, learned helplessness, behavior change and groupthink.
- **Critical Thinking**
  - *March to end of April, with break*
  - Critical Thinking takes up topics such as metacognition, cognitive errors and biases, intuitive versus analytic thinking, and medical decision-making in the face of uncertainty.
- **Science of Health Systems**
  - *August through May, with breaks*
  - This 17-month longitudinal course spans the full medical school experience with the main focus in Phases 1 and 2. In this new health systems component, students will experience a new Science of Health Systems curriculum, where they will learn the foundations of health systems, health care delivery, financing, insurance, population and public health, socio-ecological medicine, quality, safety, value, and teamwork and leadership. Additionally, students will serve as patient navigators within the health system. Both the curriculum and patient navigator experience will allow students to develop the knowledge, skills, and attitudes to function effectively amid the complexities of an evolving health system.
- **Foundations of Patient-Centered Care**
  - *Middle of July to next June, with breaks*
  - This course, which spans the first 19 months of medical school training at Penn State College of Medicine, is administered within each student's respective Society and is integrated with other first- and second-year courses. The course consists of three components: communication/clinical interviewing, physical examination, and integration, application and advancement teaching sessions.
- **Scientific Principles of Medicine**
  - *End of July through October*
  - This course is offered as part of the Hershey track.
- **Anatomy**
  - *End of October to beginning of June, with breaks*
  - Anatomy is taught through a series of block systems courses throughout Year 1: Musculoskeletal System, Hematology, Cardio-Respiratory Medicine and Renal Medicine.
- **Musculoskeletal System, Dermatology and Rheumatology**
  - *End of October to middle of December (with break)*
  - This course has three major components. The first is dedicated to orthopedics, the second to rheumatology, and the third to dermatology. The course integrates dermatology, immunology, family medicine (sports medicine), internal medicine (rheumatology), orthopedics, pathology, and pediatrics (rheumatology). The subject matter is linked as joint disease connects orthopedics and rheumatology and, immunology connects rheumatology and dermatology. The lecture content and problem-based learning cases will help to illustrate the "connectedness" of this block of material.
- **Hematology**
  - *End of December to middle of January, with break*
  - The goal of the hematology course is to provide students with an introduction to the pathophysiology, clinical manifestations, and the principles of treatment of diseases of the blood and blood-forming organs.
- **Cardio-Respiratory Medicine**
  - *Middle of January to beginning of April*
  - The Cardio-Respiratory course is the students' first intensive exposure to integrative physiology. Cardio-Respiratory Medicine requires mastery of cardiovascular and respiratory physiology, anatomy, embryology, histology, pathology, immunology and pharmacology, as well as the clinical science underlying cardiovascular and respiratory disease. Lectures and problem-based learning cases are augmented by hands-on EKG sessions, training in the techniques of cardiac physical examination, workshops, lung and heart sounds simulations and a ventilation simulation laboratory. Cardiovascular disease remains a leading killer of Americans and lung disease is prevalent; knowledge gained here will be useful throughout your entire medical career.
- **Renal Medicine**
  - *End of April through May*
  - The course provides an introduction to the physiology, anatomy, pharmacology, microbiology, and pathology of the kidneys and urinary tract. Topics include the relationship between structure and function of urinary system; fluid, electrolyte and acid/base homeostasis in health and disease; etiology and manifestations of common diseases of the kidneys; and cellular processes that mediate the actions of pharmacological agents active in the urinary system.

- **Clinical Skills Immersion**

- *Second week in April*
- This is a week of clinical skills immersion.

- **Primary Care Preceptorship**

- *One week in April*
- The Primary Care Preceptorship is an optional experience during spring break that provides an opportunity for first-year medical students to participate in an organized educational experience with physicians who are board certified in the specialties of family medicine, internal medicine, and/or pediatrics. This course is scheduled for one week and requires each student to complete 40 hours within the ambulatory care setting of his/her designated preceptor. All clinical training sites are reviewed to ensure the learning environment can provide students with the opportunity to achieve defined learning objectives and the physicians who teach are up-to-date on board certifications. The course offers a clinical experience early in the students' medical education and exposure to the fundamentals of patient care within the emerging models of health care in the 21st century. Students are offered clinical training experiences within the setting of the Commonwealth of PA, participating practices nationally, and an international track in affiliation with Global Brigades.

- **Reflection and Assessment**

- *First week in June*
- This is a week of reflection and assessment.

- **Acceleration Clerkships/Electives**

- *Middle of March through end of Year 2*
- This is the time when you will be accelerating your education to allow you to finish in 3 years.

## Year 2

- **Scholarship/Research and Global Health**

- *Summer, start of Year 2*
- Over the summer, students have the opportunity to do research for the Medical Student Research project and/or participate in Global Health opportunities.

- **Medical Ethics and Professionalism**

- *Middle of August through October*
- Medical Ethics and Professionalism provides students with a framework for decision making in the face of common ethical challenges and addresses issues involving autonomy, informed consent, advance care planning, medical mistakes and truth-telling.

- **Science of Health Systems**

- *Middle of August to early February of following year, with breaks*
- This 17-month longitudinal course spans the full medical school experience with the main focus in Phases 1 and 2. In this new health systems component, students will experience a new Science of Health Systems curriculum, where they will learn the foundations of health systems, health care delivery, financing, insurance, population and public health, socio-ecological medicine, quality, safety, value, and teamwork and leadership. Additionally, students will serve as patient navigators within the health system. Both the curriculum and patient navigator experience will allow students to develop the knowledge, skills,

and attitudes to function effectively amid the complexities of an evolving health system.

- **Foundations of Patient-Centered Care**

- *Middle of August through January, with breaks*
- This course, which spans the first 19 months of medical school training at Penn State College of Medicine, is administered within each student's respective Society and is integrated with other first- and second-year courses. The course consists of three components: communication/clinical interviewing, physical examination, and integration, application and advancement teaching sessions.

- **Gastrointestinal and Nutrition**

- *Middle of August to third week in September*
- This course provides exposure to the foundational basic science and advanced concepts necessary to understand the approaches used to diagnose, treat and manage disorders of nutrition, the oropharynx, esophagus, stomach, small and large bowel, pancreas, biliary system and liver. Foundational material will include integrative physiology of these organs. The students will develop the ability to differentially diagnose, describe treatments, and review management of nutritional disorders and support as well as diseases of the GI organs and liver. The pathogenesis, pathology, differential diagnosis, clinical course, and complications of GI and liver diseases will be covered along with aspects of clinical management, especially the pharmacology of drugs used to treat them. The course will augment large-group classroom learning opportunities with problem-based learning, wet laboratory and simulation laboratory experiences.

- **Endocrinology and Reproductive Medicine**

- *Last week of September through middle of November*
- The goal of this course is to learn about the general principles, physiology actions, causes and consequences of insufficiency or excess chemical messengers that function as hormones. These principles are then incorporated into the anatomy, histology and physiology of the female and male reproductive system, including pregnancy. Basic disease processes and therapeutics, including pharmacology, are also covered.

- **Neural and Behavioral Science**

- *End of November to middle of February, with break*
- NBS incorporates basic neuroanatomy, neurophysiology, neurology, neuropathology, neuropharmacology, anesthesia, ophthalmology, radiology, behavioral science, and psychiatry. The goal is for students to understand the structure of the human nervous system, the biological mechanisms that underlie the functions of the nervous system, the neural basis of behavior, and the diagnosis, pathology and treatment of diseases that affect the nervous system by incorporating these topics with clinical relevance. The course also includes pathology wet labs and Neurology Day, where students interact in small groups with 14 patients who have various neurological disorders.

- **Communication**

- *Early November to middle of February, with break*
- Communication focuses on exploring assumptions and biases that impact communication and communicating in dyads, teams, and larger systems.

- **Profession of Medicine II**
  - *Last two weeks of February; Third week in April*
  - This course focuses on successfully transitioning students from preclinical to clinical training, building on the knowledge and clinical skills covered in Phase I. It includes advanced clinical skills training through simulation as well as several fundamental medical principles from various specialties that will be expanded and reinforced in subsequent clerkships. In addition, roles and responsibilities of a third-year medical student are covered through discussions on reflection, professionalism, and communication.
- **Health Systems in Clerkships**
  - *March through end of Year 2*
  - Health Systems in Clerkships accompanies the Year 2 Clerkships.
- **Clerkships**
  - *Beginning of March through end of next March*
  - Required core clinical clerkships begin toward the end of Year 2. Clerkships are taught in three blocks. See clerkship details here (<https://students.med.psu.edu/md-students/clerkships/>).
    - Block 1 clerkships are May to August.
    - Block 2 clerkships are August through third week of November.
    - Block 3 clerkships are end of November through March.
- **Career Exploration and Synthesis**
  - *Three weeks over end of July/beginning of August*
  - This is a week and a half Career Exploration and Synthesis session.
- **Clinically Integrated Medical Sciences**
  - *Middle of May to middle of March, next year*
  - This course will focus on building an integrated sciences approach into third-year medical students' clinical training. Mastery of the processes covered by the course will enhance students' ability to think critically about complex, clinical problems through the respective lenses of biomedical sciences, systems and social sciences. This course incorporates a humanities stripe dedicated to student reflection on clinical experiences while providing a supportive environment for sharing difficulties and insights.
- **Assessment Week**
  - *Second week in August*
  - This is a reflection and assessment week at the end of Year 2.
- **Career Exploration and Synthesis**
  - *End of July, beginning of August*
  - This is a week and a half Career Exploration and Synthesis session.
- **Clinically Integrated Medical Sciences**
  - *Middle of May through middle of March, next year, with breaks*
  - This course will focus on building an integrated sciences approach into third-year medical students' clinical training. Mastery of the processes covered by the course will enhance students' ability to think critically about complex, clinical problems through the respective lenses of biomedical sciences, systems and social sciences. This course incorporates a humanities stripe dedicated to student reflection on clinical experiences while providing a supportive environment for sharing difficulties and insights.
- **Acceleration Clerkships/Electives**
  - *August through end of Year 2*
  - This is the time when you will be accelerating your education to allow you to finish in 3 years.
- **Kienle Groups**
  - *Year 3, with breaks*
  - The Kienle Group curriculum is part of a broader Humanities stripe across the entire Penn State curriculum and provides an opportunity for students to talk candidly about their personal challenges and perspectives as they move through their clinical clerkships. The sessions take place on designated Fridays during the course of the Clerkship year.
- **Health Systems in Clerkships**
  - *Beginning of March through end of Year 3 clerkships*
  - Health Systems in Clerkships accompanies the Year 3 Clerkships.
- **Assessment Week**
  - *Second week in August; Third week in November*
  - These are reflection and assessment weeks during Year 3.
- **Formative OSCE**
  - *Second week in November*
  - Students take formative and summative OSCEs prior to starting Phase III.
- **Career Exploration and Synthesis**
  - *July/August; Early November; Middle of March*
  - These are week-and-a-half Career Exploration and Synthesis sessions.

### Year 3

- **Clerkships**
  - *Middle of March*
  - Required core clinical clerkships begin toward the end of Year 2 and continue in Year 3. Clerkships are taught in three blocks. See clerkship details here (<https://students.med.psu.edu/md-students/clerkships/>).
    - Block 1 clerkships are May through the first two weeks of August.
    - Block 2 clerkships are August through most of November.
    - Block 3 clerkships are the end of November to the last week of March.
- **USMLE Study**
  - *January to March*
  - USMLE study begins midway through the third year.
- **Translating Health Systems**
  - *End of March*
  - Phase III begins with a two-week Translating Health Systems intersession. This course is designed to help students apply concepts of patient safety, quality improvement, value, and teams to the clinical setting. It provides students with opportunities to actively identify patient safety issues and develop a quality improvement project proposal. By design, this course emphasizes teamwork, an essential component in providing quality patient

care. The goal is to guide learning in these concepts so that students will have the base knowledge to help improve care of their patients and the health system in which they will work during the fourth year of medical school and in residencies.

- **Residency Prep**

- Phase IV includes residency preparation, interviews and two total acting internships in different clinical fields or one acting internship and one critical care rotation. Additional requirements include one humanities selective, completing six total electives (to include electives from Phase II and Phase III), and the Profession of Medicine III course (Transition to Internship). All graduation requirements are confirmed to be completed during this time. The College of Medicine offers a variety of clinical, teaching and research electives for students during this phase.

- **USMLE**

- *End of January through beginning of May*
- Students prepare for and take USMLE Step 1, Step 2 CS and Step CK before the end of Year 3.

## Competencies and Subcompetencies for Graduation

1. Patient Care: Provide patient-centered care that is compassionate, appropriate, and effective for the promotion of health and treatment of health problems
  - **PC 1.1.** Perform a problem-focused and complete history and physical examination
  - **PC 1.2.** Use clinical information to formulate differential diagnosis; identify and interpret clinical and diagnostic test information to formulate a prioritized differential diagnosis and management plan
2. Knowledge for Practice: Demonstrate knowledge of established and evolving biomedical, clinical, and healthcare delivery sciences, as well as the application of this knowledge to patient care
  - **KP 2.1.** Demonstrate knowledge of the biomedical and clinical sciences and apply this knowledge to diagnostic and therapeutic decision-making and clinical problem-solving
  - **KP 2.2.** Contribute to the creation, dissemination, application, and translation of knowledge and practices
3. Practice-Based Learning and Improvement: Demonstrate the ability to investigate and evaluate one's care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care
  - **PBLI3.1/PPD 8.1.** Incorporate reflection and self-assessment in the development of one's own professional identity, systematically analyze one's own performance to identify strengths and challenges, set individual learning and improvement goals, and engage in appropriate learning activities to meet those goals.
  - **PBLI 3.2.** Identify one's own knowledge gaps as they emerge in patient care activities, formulate an appropriate question to address the gap, utilize clinical informatics to locate, appraise, and assimilate evidence to inform patient care
4. Interpersonal and Communication Skills: Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals
  - **ICS 4.1.** Communicate effectively with patients, families, and other individuals across a broad range of backgrounds, beliefs, and identity
  - **ICS 4.2.** Demonstrate the ability to document and organize patient information both orally and in the medical record
  - **ICS4.3/IPC7.3.** Communicate effectively with others on an interprofessional team
5. Professionalism: Demonstrate a commitment to behaving in a professional manner and adhering to ethical principles
  - **Prof 5.1.** Act in the best interest of individual patients and patient populations
  - **Prof 5.2/MH9.3.** Act with honesty, integrity, accountability, and reliability, adhering to ethical norms and principles for the practice of medicine
6. Systems-Based Practice: 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
  - **SBP 6.1.** Demonstrate knowledge of the basic principles of healthcare delivery, organization and finance
  - **SBP 6.2.** Incorporate considerations of value-based care in decisions about patients and/or populations
  - **SBP 6.3.** Identify and analyze adverse events, medical errors, and systems issues and propose interventions that will improve the value of healthcare
  - **SBP 6.4.** Analyze factors that affect the health outcomes of patients, populations, and communities
7. Interprofessional Collaboration: Demonstrate the ability to engage in an interprofessional team in a manner that optimizes safe, effective patient- and population-centered care
  - **IPC 7.1.** Apply principles of team dynamics in interactions with other health professionals, patients, and families, in the context of shared knowledge, shared goals, and mutual respect
  - **IPC 7.2.** Use the knowledge of one's own roles and responsibilities and those of other health professionals – to optimize health care
  - **IPC 7.3/ICS4.3.** Communicate effectively with others on an interprofessional team
8. Personal and Professional Development: Demonstrate the qualities required to sustain lifelong personal and professional growth
  - **PPD 8.1/PBLI3.1.** Incorporate reflection and self-assessment in the development of one's own professional identity, systematically analyze one's own performance to identify strengths and challenges, set individual learning and improvement goals, and engage in appropriate learning activities to meet those goals
  - **PPD 8.2.** Manage the balance between personal and professional expectations
  - **PPD 8.3.** Articulate potential rewards and challenges of future phases of one's own career
9. Medical Humanities: Demonstrate respect for the diverse values, beliefs and practices one encounters in the field of healthcare, while embodying a commitment to becoming an ethical, reflective, humble, informed, and compassionate physician
  - **MH 9.1.** Demonstrate compassion, humility, and respect toward all persons regardless of their diverse identities, values, beliefs, and experiences.

- **MH 9.2.** Demonstrate the application of humanities and/or the arts to illuminate the lived experience of illness and to enhance the care of the patient
  - **MH 9.3/Prof 5.2.** Act with honesty, integrity, accountability, and reliability, adhering to ethical norms and principles for the practice of medicine
10. Critical Thinking: Apply higher-order cognitive skills and deliberate thinking that leads to action that is context appropriate
- **CT 10.1.** Demonstrate skepticism, curiosity, and a willingness to acknowledge uncertainty when confronted with new information or situations
  - **CT 10.2.** Demonstrate mindful interrogation of one's own thinking process and biases in making decisions

Adapted from: Englander R, Cameron T, Ballard AJ, Dodge J, Bull J, Aschenbrenner CA. Toward a common taxonomy of competency domains for the health professions and competencies for physicians. *Acad Med.* 2013; 88(8):1088-94.

## Tuition and Financial Aid

The Office of Student Aid at the College of Medicine is here to assist you. We can help you understand your options, apply for financial assistance and make well-informed choices about financing your education.

### Contact Us

If you have questions about financial aid, please contact the Office of Student Aid at 717-531-7052 or [StudentAid@pennstatehealth.psu.edu](mailto:StudentAid@pennstatehealth.psu.edu).

### Applying for Financial Aid

Most students in the MD program rely on financial aid to help pay for their education and housing expenses. In 2016-17, 87.6% of our students received some form of financial aid.

Sources of aid include:

- **Loans:** These include need-based university loans awarded by the Office of Student Aid and federal loans (Direct Unsubsidized and GradPlus).
- **Scholarships:** These include both merit- and need-based university scholarships awarded by the Office of Student Aid.

LEARN HOW TO APPLY FOR FINANCIAL AID (<https://students.med.psu.edu/md-students/financial-aid/>)

### Cost of Attendance

The annual Cost of Attendance is not finalized until the University Board of Trustees establishes tuition charges at their annual July meeting. This website provides cost of attendance information for the current academic year. This information will be updated annually after tuition charges are established each July.

The cost of attendance is based upon educational expenses and modest, but adequate living expenses for the student.

### Tuition

Tuition in the MD program is the same for Pennsylvania and non-Pennsylvania residents.

Living expenses are approximately the same for on- and off-campus residents.

Tuition and fees are based on actual costs for the 2017-2018 academic year. Tuition fees are subject to change based on approval from the Penn State Board of Trustees.

USMLE costs were estimated at the time the costs were determined. Changes in curriculum can alter the academic year in which a student will incur these costs.

Disability insurance is required and the amount is based on the actual 2017-18 academic year.

Registered students are required to carry medical insurance. This can be purchased through the university for \$3,622 for first-year students, or \$3,418 for second- through fourth-year students for 2017-18. Students have the option to purchase medical insurance on their own as long as it meets university requirements.

## Accreditation

The Penn State College of Medicine's MD Program is fully accredited by the Liaison Committee on Medical Education (LCME) (<https://lcme.org>), the national accreditation authority for medical education programs leading to the MD degree in the United States and Canada.

LCME accreditation is a peer-reviewed process of quality assurance that determines whether the medical education program meets established standards. To achieve and maintain accreditation, a program leading to the MD degree in the United States and Canada must meet the LCME accreditation standards. Accreditation status is reviewed by a team of site visitors every eight years. The next review date for the College of Medicine is the 2025-2026 academic year.

## Professional Licensure/Certification

Many U.S. states and territories require professional licensure/certification to be employed. If you plan to pursue employment in a licensed profession after completing this program, please visit the Professional Licensure/Certification Disclosures by State (<https://www.psu.edu/state-licensure-disclosures/>) interactive map.

## Contact

### MD Program

Penn State College of Medicine  
500 University Drive  
Hershey, PA 17033

717-531-8755

[StudentAdmissions@pennstatehealth.psu.edu](mailto:StudentAdmissions@pennstatehealth.psu.edu)