

# MD PROGRAM

## 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.