

MEDICAL EDUCATION

Office of Medical Education
<https://medicine.yale.edu/edu>

INTEGRATED COURSE CURRICULUM

Master Courses

MD 1000, Introduction to the Profession The first course in the Yale School of Medicine curriculum is Introduction to the Profession (iPro). The goal of iPro is to introduce first-year medical students to their professional identity in medicine. The course also aims to introduce and foster a holistic approach to the learning and practice of medicine. The course focuses on topics related to professionalism, patient-centered care, interprofessional collaboration, health equity, bias and racism, community engagement, role power, and privilege amidst others. Beyond learning in large and small group settings in the classroom, students have early exposure to clinical environment through time at Yale New Haven Hospital, participate in simulation exercises and engage with local nonprofits that serve the New Haven community. The teaching methods in iPro include interactive and participatory classroom sessions, small group experiences in the community and museum, simulation exercises, hospital experiences, and patient centered learning. Open to M.D. and M.D.-Ph.D. students only.

MD 1025, Scientific Foundations This course introduces the core concepts and modes of thinking from several disciplines that are pillars of biomedical science and medicine: biochemistry, cell biology/histology, pathology, physiology, and pharmacology. Each discipline continues throughout the pre-clerkship curriculum where its content is woven into every integrated course. Scientific Foundations is thus fundamental for students' subsequent education and development as physician-scientists. The course organizes content from the above disciplines into the following themes: building a body, cell communication, cell energy, fluids and gradients, gene expression, life and death of a cell, and population health. Additional organ- and systems-related content for the above disciplines is distributed across the remaining pre-clerkship courses, as appropriate. Open to M.D. and M.D.-Ph.D. students only.

MD 1050, Genes and Development This course begins with an introduction to foundational genetics principles. It then transitions to embryology, presenting how the program for human development is controlled and how deregulation of this program results in birth defects. Students are then introduced to the field of clinical genetics and have the opportunity to apply their genetics knowledge as they learn about common genetic disorders affecting children and adults. This is followed by an overview of the first organ system in the curriculum, the hematologic system. This introduction to benign hematology serves as a foundation for the second part of the course, which focuses on cancer, which begins with cancer biology and pathology. In this portion of the course, students are introduced to the types of genetic changes that occur in somatic cells and enable tumorigenesis. Cancer biology and principles of neoplasia are integrated with developmental genetics and embryology, with students gaining an appreciation of neoplasia as a genetically-based aberration of normal development and

cellular regulation. This knowledge is further expanded as the students learn malignant hematology before moving on to learning about solid tumors. The course incorporates cancer pharmacology and clinical aspects of drug development and concludes with a broad introduction to the clinical oncology discipline. This content is integrated and sequenced for optimal learning utilizing a variety of teaching methods including lectures, demonstrations, team-based learning, small-group workshops, clinical-pathologic correlations, patient interviews, and labs. Open to M.D. and M.D.-Ph.D. students only.

MD 1075, Attacks and Defenses This course introduces principles of immunity, tissue injury and repair, and medical microbiology. These principles are integrated with the clinical fields of clinical immunology and allergy, infectious diseases, dermatology, and rheumatologic diseases. Students are introduced to the diagnosis and management of patients with infectious, allergic, autoimmune and immune deficiency related diseases. Selected examples of neoplastic disease, especially melanoma, are discussed due to the major impact of cancer immunotherapy on clinical care. Medical microbiology and infectious disease are taught during the entire course. Principles of immunobiology are taught concurrently with clinical immunology, followed by rheumatology and dermatology. All topics are taught with a mix of lectures, workshops, laboratories, and patient encounter sessions. Disease in underserved and diverse populations is a critical component of the course. Open to M.D. and M.D.-Ph.D. students only. Lectures may be audited with approval of the course directors.

MD 1100, Connections to the World Connections to the World (CTW) focuses on the structure and functions of the nervous system and related disorders. CTW integrates several distinct courses taught previously in the first two years of medical student education: Fundamentals of Neuroscience, Neurophysiology and Biological Basis of Behavior, Psychiatry, Neurology, and Ophthalmology. CTW is built upon the neuraxis, beginning with a description of the anatomy and physiology of the spinal cord and ascending to the cerebral cortex, adding disease mechanisms and pathophysiology at each anatomical station. Students have a comprehensive understanding of the normal anatomy and physiology of the central and peripheral nervous system along with abnormalities in key neurological, psychiatric, and ophthalmologist disorders. The course incorporates neuropsychopharmacology, neuropathology, and neuroimaging into specific disease models and as distinct pedagogical entities. Topics in the biological basis of behavior and psychiatry include principles and neural mechanisms of learning and memory, neural systems involved in fear and anxiety, reward and drug addiction, stress, and neural systems attention. CTW blends didactic and interactive pedagogies in large and small group settings along with labs and patient presentations. An emphasis is placed on active learning with flipped curricula and interactive sessions with labs, workshops, and live patient presentations forming the majority of the course. It provides students with ample opportunities for spaced repetition, analytical thinking, and active application of their understanding of anatomy, physiology, pathophysiology, and pharmacology in diagnosing and treating disease. Students are introduced to and encouraged in their practice of clinical reasoning. Open to M.D., M.D.-Ph.D., and Neuroscience Ph.D. students only. The course cannot be audited.

MD 1125/1126, Homeostasis Homeostasis is one of the fundamental properties of any living organism. The heart, lungs, and kidneys work in concert to provide oxygen to and remove toxins from our cells, and they do so continuously from our first breath

to our last. The goal therefore of the Homeostasis course is to elucidate the complex biological communication and feedback, mediated via mechanical, soluble and cellular mechanisms, between the heart, the lungs, and the kidneys. Although crosstalk between these organ systems is essential to maintain body homeostasis, pathological states in one or more organs can lead to functional and structural dysfunction in the other organs. This course integrates cardiology, pulmonary, and renal content in this order. Physiology and pathophysiology of organ systems are integrated in workshops and are taught by both clinical and physiology faculty. The sessions are heavily case-based and aimed at preparing the students for their clinical rotations. Open to M.D. and M.D.-Ph.D. students only.

MD 1150, Energy and Metabolism The overall goal of this course is to introduce first-year students to topics broadly related to digestive diseases and endocrinology. The course is designed to provide an integrative approach, with faculty drawn from Departments of Anatomy, Physiology, Cell Biology, Pathology, Epidemiology, History of Medicine, and from clinical disciplines including medicine, surgery, pediatrics, and diagnostic imaging. The objective is to provide for learning in a cohesive fashion so that students understand how health and disease reflect the interplay of physiology, environment, nutrition, genetics, psychology, sociology, economic, and other factors. The topics that are covered are linked to the intake, absorption, and metabolism of food; the generation and storage of energy; and other topics related to gastroenterology and endocrinology. The schedule for the course maintains a thematic sequence, covering anatomy, cell biology and physiology, then introducing disease states. Emphasis is given to how alterations in one system can have effects on others. Open to M.D. and M.D.-Ph.D. students only.

MD 1175, Across the Lifespan The goal of this course is for medical students to acquire knowledge of normal and abnormal human development through all four stages of life: conception, pregnancy and birth, child and adolescent growth and development, the reproductive years, and middle age and senescence. The course integrates relevant sessions from longitudinal courses (anatomy) and threads (cell biology, embryology, genetics, pathology, diagnostic methods, pharmacology and diversity, equity, and inclusion). It starts with the uro-genital anatomy lectures, embryology, and reproduction physiology sessions so that students acquire the basic knowledge necessary to understand the material presented in each of the stages. The material is taught in a variety of formats, including lectures, small-group workshops that discuss patient cases, and laboratories, in a way that fosters the acquisition of clinical reasoning skills and prepares students to enter clerkships. Open to M.D. and M.D.-Ph.D. students only.

Longitudinal Courses

MD 1001, Populations and Methods: The Application of Epidemiology and Biostatistics to Public Health Populations and Methods introduces students to issues, evidence, and techniques of importance to the health of populations. It is a course specifically for physicians in training; each topic is selected based on its importance to both public health and medicine. The course explores the social consequences of biological disorders (cancers, disabilities, substance use, obesity, infectious disease transmission, and mental health) and the health consequences of social challenges (environmental hazards, firearms, incarceration, migration, maternal and child health,

human rights violations, and climate change). The important role of physicians in addressing social disparities in health and of assuring health equity for patients is emphasized throughout the course. There is a focus on developing analytic skills and critical thinking. Epidemiology and biostatistics topics examine screening and diagnostic testing, evaluate observational and experimental research study designs, assess absolute and relative risks for disease, quantify temporal risk using survival analysis, explore causation, model the spread of infectious diseases, and quantify the financial costs and benefits of health-related interventions. A concentration on methodology makes the public health topics more rigorous, and attention to public health makes the methodological tools more relevant. All case studies used in the workshops integrate the public health subject matter with these quantitative methods. Open to M.D. and M.D.-Ph.D. students only.

MD 1200, Human Anatomy This longitudinal course runs concurrently with the master courses of the School of Medicine curriculum. It begins in the second term of first year and is completed at the end of the first term of the second year. Human Anatomy is integrated with the radiology, embryology, and pathophysiology activities of the master courses. Students engage in lectures, conferences, and cadaver dissections. Extensive use is made of computer software and Web-based radiologic, anatomic, and clinical reasoning activities. Four students are assigned to each cadaver; students work collaboratively; interpersonal and group process skills are stressed. Open to M.D. and M.D.-Ph.D. students only.

MD 1225, Professional and Ethical Responsibility This course runs longitudinally through the first year and features lectures, readings, and small-group case discussions. The course examines the various contexts (social, legal, financial, and organizational) in which the practice of medicine takes place, with a particular focus on principles and approaches to medical ethics. Specific ethical problems in the practice of medicine are addressed, both historical and current, and these issues are considered in the setting of individual patient encounters as well as on the societal level. In addition, practical and ethical aspects of the various components of the U.S. health care system are reviewed. Open to M.D. and M.D.-Ph.D. students only.

MD 1250, Scientific Inquiry: Research Methods and Responsible Conduct of Research

The goal of this course is to instill in students an understanding of the value of the Yale student research program and thesis and to provide a primer for success in the thesis. Emphasis is placed on how to choose an excellent thesis project and mentor in laboratory or clinical research, as well as in the areas of epidemiology and public health, international medicine, or medicine and the humanities. Students are instructed on the importance of the research environment, the selection of the best possible up-to-date methods, the importance of issues related to human investigation, and the requirements for HIC approval of protocols for medical student research. Open to M.D. and M.D.-Ph.D. students only. J. Rosenberg

MD 1300, Clinical Skills This course spans the first eighteen months of school for all medical students. Students begin to develop and refine their clinical skills, the essential elements of “doctoring” that physicians use during patient encounters. In Clinical Skills (CS), students learn to communicate with patients, families, and other members of the care team; examine patients; develop clinical reasoning skills; and understand the important role of a student-doctor in a patient’s care. Multiple teaching modalities are

utilized in CS, but the bulk of the experiences are designed to be hands-on, offering students the opportunity to develop clinical skills with direct faculty observation and feedback, frequently with the use of standardized patients. Throughout CS, emphasis is placed on taking a patient-centered approach to care. Students pass the course by attending all class sessions (attendance is mandatory) and performing a competent history and physical exam in a standardized assessment session at UConn. Course content is practiced and supplemented in the Interprofessional Longitudinal Clinical Experience (ILCE).

MD 1350, Foundations of Patient Care

- *Part 1: Combined M.D. and PA Course* The first part of the course is designed to help first-year health professional students from YSM's M.D. and Physician Associate (PA) programs begin to build a working knowledge of the clinical environment, health care organizations, and to learn to work effectively as part of the interprofessional health care team. The structure and content of the curriculum is based on the needs of our current health care and academic environment. Faculty tutors guide groups of students in interprofessional clinical experiences in a consistent patient care setting. Experiences also include planned group meetings designed to teach patient- and family-centered interviewing, physical examination skills, clinical reasoning, teamwork, and factors that impact health and the health care delivery system. Students also participate in clinical professional observations with health professionals including physical and occupational therapists, spiritual care providers, clinical nutritionists, and others.
- *Part 2: M.D. Student Patient Care Experience* After the PA students conclude their portion of the course, students in the M.D. program works in groups of three or four with a clinical tutor once a week from mid-March of their first year to the end of November of their second year. The main purpose of this part of the course is to prepare students to successfully complete the standardized history and physical exam assessment and to provide students opportunities to develop the skills they will need on the clerkships. Students see patients with physician tutors and develop their identities as future physicians.

INTEGRATED CLERKSHIPS

MD 2000/2025, Medical Approach to the Patient Clerkship This twelve-week integrated clerkship includes internal medicine (eight weeks) and neurology (four weeks) clinical components. Throughout the clerkship, students participate in integrated experiences that address the themes related to hospital-based care such as management of acute disease, diagnostic skills, transitions of care, quality improvement, and organ systems.

MD 2051/2076, Biopsychosocial Approach to Health Clerkship This twelve-week integrated clerkship comprises a six-week rotation in primary care and a six-week rotation in psychiatry. During the six-week primary care component, students spend 5–6 half-days each week working in a practice for adult primary care (i.e., general internal medicine, family medicine, or combined medicine/pediatrics) and 2–3 half-days each week working in a practice for general pediatrics. The psychiatry component of the clerkship includes three weeks of inpatient psychiatry, three weeks of consultation-liaison or emergency psychiatry, and six half-day sessions in a longitudinal outpatient

psychiatry or integrated primary care–psychiatry clinic. Primary care and psychiatry each have distinct classroom exercises. However, an integrated classroom curriculum brings students together each Thursday afternoon to explore the many topics that overlap primary care and psychiatry, including mood disorders, anxiety disorders, substance abuse, somatic symptom disorder, and pain.

MD 2100/2125, Surgical Approach to the Patient Clerkship This twelve-week integrated clerkship includes surgery (six weeks, general; three weeks, specialties) and emergency medicine (three weeks) clinical components. Throughout the clerkship students participate in integrated experiences that address themes of the OR experience such as perioperative care, emergency/trauma management, procedures, medical error and patient safety, and anesthesiology. Students also participate in a twelve-week mentoring program during the clerkship.

MD 2151/2176, Pediatrics, Obstetrics, and Gynecology Clerkship This twelve-week integrated clerkship includes clinical components in obstetrics and gynecology and pediatrics. Students participate in six weeks of OB/Gyn and six weeks of pediatrics, with a mix of inpatient and ambulatory clinical experiences in both specialties. Throughout the clerkship students participate in integrated experiences that cover themes such as health and development, preventive care, sexual health, families and communities, health promotion and disease prevention, and perinatal care. All students attend an evening session with the gynecologic teaching associates.

FOURTH-YEAR COURSE

MD 0001, Capstone Course The capstone course is required of fourth-year students in the spring term beginning the week of the internship match. Conceived more than ten years ago as a capstone to four years of medical school training, the course provides a review of some of the knowledge and skills needed for internship and beyond; discipline-specific bootcamps for hands-on pre-internship training; a forum for a comprehensive and critical evaluation of clinical cases; a chance to review some of the historical and economic factors that inform the practice of medicine; and an opportunity to reflect on the social, ethical, psychological, and even spiritual challenges of a life in medicine.

NONDEPARTMENTAL ELECTIVE COURSES

(For clinical specialty electives, please see departmental listings or visit <https://medicine.yale.edu/md-program>)

Clinical Longitudinal Elective, Tailored The student participates as an active member of the designated inpatient and/or outpatient service, participating in appropriate clinical cases at YNHH and/or the VA. A completed proposal with specific specialty learning objectives must be submitted to the elective director. The student attends regularly scheduled specialty conferences (to be determined by the student and the clinic preceptor). Assignment may be made weekly, twice monthly, or monthly as determined by the student's laboratory responsibilities and in association with the clinic preceptor. This is the equivalent of a two-week, full-time elective, pass/fail. The specific rotation dates are determined by the elective director. Open to Yale M.D./Ph.D. students only; students must have completed six months of clerkships. Director: L. Cohn

Creating Health Care and Life Science Ventures This course gives students a broad understanding of the major “new venture” opportunities in health care and medicine – health care delivery, health care IT and the digital health landscape, biotechnology, medical devices, and health care process redesign especially in the surgical space. In each of these areas, they learn the canonical path to commercialization including how to identify “unmet clinical needs” market opportunities; who is the customer; how to build interdisciplinary teams; regulatory hurdles to commercialization; and creation of a business strategy. The course is designed for a diverse student body including students from management, natural sciences, medicine, law, nursing, and health care management programs. The course comprises lectures, raw cases, guest speakers, and in-class projects with coaching from the venture investor community. This thirteen-week class is held at Yale School of Management, Evans Hall, and is open to all medical students. For questions, contact the instructors at christopher.loose@yale.edu or ayesha.khalid@yale.edu. Also MGT 657. Directors: C. Loose, A. Khalid

Evidence-Based Clinical Information Skills: Cushing/Whitney Medical Library

This two-week elective is designed to introduce students to three of the four As of evidence-based practice: Ask, Acquire, Assess, as a framework for effective searching of the biomedical literature (the elective does not cover the fourth A, Apply, as this process is best assessed during clinical training). Students develop proficiency in identifying and appraising the best available evidence for patient care as part of their current and future clinical practice. Students develop skills needed in order to apply existing and evolving biomedical literature to inform their care of patients and advance the health of individuals and populations. Open to second-, third-, and fourth-year students. Director: J. Spak

Evolution and Medicine Flipped curriculum: the lectures are recorded and available online. Each week the assigned lectures and corresponding assigned readings should be viewed/read before coming to class. That assignment is tested with short-answer quizzes and reading responses, which must be submitted before class. Those who have not submitted those responses are not allowed to come to class. Class consists of discussion of the points in the lectures and readings that were found to be difficult and of recent research papers relevant to the topic at hand. The course writing assignment for medical students is to substantially improve the Wikipedia page on a topic of their choice in evolutionary medicine. Enrollment limited to fifteen. Required text: Stearns and Medzhitov, *Evolutionary Medicine* (2015). Director: S. Stearns

Family and Transgender Medicine Elective (Oneonta, New York) This is a unique opportunity to experience the full spectrum of family practice in a small-town environment. In this elective, students (1) learn how to approach the practice of family medicine in a small town with limited access to specialists and how to use available resources to provide high-quality care, (2) learn about care coordination with larger health care systems in this practice setting, (3) learn about the practice of medicine in a small community and how physicians are integrated into that community, and (4) develop a family systems-based approach to providing care. The preceptor is a Yale graduate who provides primary care for a diverse population in both the hospital and clinic setting. In addition to both inpatient and outpatient family medicine, the preceptor also has a large practice in transgender medicine for both youths and

adults, providing a unique practice opportunity. One student every two or four weeks. Director: P. Ellis

Family Medicine Elective (Middlesex Hospital) This elective exposes students to the wide variety of clinical situations encountered in a national model, community-based family medicine residency program. In offices in Middletown, Portland, and East Hampton, students see and examine patients, present their findings and differential diagnosis, develop a plan of investigation and management with their supervisor, and explain the plan to their patients. Students manage and document care using electronic health records. In Middlesex Hospital, students are members of the team on the family medicine inpatient service, which provides medical, pediatric, newborn, maternity, and consultative care. Formal teaching activities include both didactic and interactive sessions, daily bedside teaching rounds, several weekly conference series, and weekly three-hour hands-on seminars. All three offices are equipped with facilities for minor surgery, casting, colposcopy, spirometry, audiometry, complete vision screening, electrocardiograms, various cultures, and rapid, enzyme-based diagnostic tests. Patients are from all walks of life and all ages and seek medical care for a wide variety of acute and chronic conditions. The emphasis is on continuity in ambulatory, nursing home, and hospital care. One student every four weeks. Director: M. Cardona

Inflammation This course covers fundamentals of inflammation from a broad biological perspective. Both physiological and pathological aspects of inflammation are the focus of this course, which is primarily for pre-clerkship medical students. Director: R.M. Medzhitov

Medical Education Course This course provides health care professional students with a unique opportunity to explore their roles as teachers, a role that is deeply intertwined with their role as physicians. The course makes use of didactic lectures, observations, group exercises, and teaching activities. Diverse and talented faculty facilitate the development of the knowledge, skills, and attitudes necessary to help students develop their experience and identity as teachers as they transition to the next phase of their career. Open only to students enrolled in the Medical Education Concentration. Director: J. Hafler

Medical Education Course Supervised Research Block Students enrolled in this supervised research block work with a designated mentor to complete a medical education scholarly project or thesis that addresses an unmet need or area of scholarship in medical education. Open only to students enrolled in the Medical Education Concentration. Director: J. Hafler

Medical Education Practicum This practicum consists of twenty hours of hands-on teaching experience, both at Yale and in the greater New Haven community. Students gain first-hand experiences as teachers and skills are refined through observation and feedback, reflective writing, and mentorship by a faculty member who has previously conducted medical education research or educational scholarship. Open only to students enrolled in the Medical Education Concentration. Director: J. Hafler

Medical Simulation Elective During this two- or four-week medical simulation elective at the Yale Center for Healthcare Simulation (YCHS), participants gain an immersive experience participating in medical simulation for medical education within the Yale School of Medicine. During the elective, students participate as learners

in high-fidelity medical simulation cases and procedural sessions on topics related to the individual student's desired specialty/topic of interest. A student's topic of interest is decided on by the student and discussed with the course director prior to the start of the elective. Students also participate in medical simulation as educators and facilitators by participating as actors in medical simulation cases for medical students and residents rotating through YCHS. Students have the opportunity to participate in all educational activities within YCHS including simulation cases, debriefing sessions, procedural sessions, and in-situ simulations (simulations which take place in the clinical environment). Students also create and program a medical simulation case during their rotation on their topic of interest under the mentorship of YCHS faculty, using evidence-based medicine resources. Students are given one-on-one instruction on how to program their case. Students can also participate in simulation-based journal clubs, a simulation debriefing course, and simulation-based medical student preceptor sessions if they fall during the time of their selected rotation.

Palliative/Hospice Medicine Elective (Branford, Connecticut) This fifty-two-bed inpatient program at the nation's first hospice provides intensive palliative care for patients with terminal illness. The medical, psychological, and spiritual needs of these patients and their families are met through the coordinated efforts of an interdisciplinary team (IDT) of physicians, nurses, social workers, pharmacists, clergy, art therapists, and volunteers. Students work one-on-one with an attending physician caring for patients approaching the end of life and their families. They participate fully in admissions, morning rounds, family conferences, and IDT conferences. This elective offers students an opportunity to acquire advanced knowledge and skills in the management of symptoms (pain, anxiety, insomnia, etc.), which will benefit them in their future care of all patients, both those approaching the end of life as well as those who are acutely or chronically ill. It is the only elective in which symptom management receives a major focus. The goal of this elective is to learn to provide optimal symptom management and, as members of the IDT, to learn to care for patients approaching the end of life and to give support to their families. A four-week rotation, which allows for optional time spent with allied services and/or home care, is recommended, although a two-week rotation is available. One or two students every two or four weeks. Director: J. Sacco

Primary Care and Community Health Advanced Clinical Elective at Chinle, Arizona

This advanced clinical elective in primary care and community health provides the learner with an immersion experience in primary care at a unique, underserved site: Chinle Health Center. This month-long rotation supervised by Steve Williams, M.D., and colleagues provides an opportunity to work with Navajo on the reservation in rural, northeast Arizona. Students appreciate working with traditional native American healers in a remote, beautiful landscape, addressing health needs created by poverty and injustice, and learning about career opportunities with the Indian Health Service. This elective is offered to senior students, who are expected to assume full responsibility for their patients, under the supervision of expert attending physicians. Director: P. Ellis

Primary Care and Community Health Advanced Clinical Elective at HAVEN

(Longitudinal) This advanced clinical elective in primary care and community health provides the learner with an experience in primary care at a unique, underserved site: HAVEN, the Yale student-run free clinic, which serves predominantly Hispanic, adult, uninsured persons. This is an opportunity for students to gain clinical experience and

help serve an underserved population in an urban medical site where students also help teach and supervise students earlier in their training. Students choose eight or fifteen Saturdays to work during the year, flexibly scheduled with oversight by the student leadership at HAVEN. Saturday hours are typically 8 a.m.–2 p.m., beginning with morning meeting, followed by direct patient care, ending with afternoon case presentation and didactic presentation. This elective is offered to senior students, who are expected to assume full responsibility for their patients, under the supervision of attending physicians. Director: B. Richards

Primary Care and Community Health Advanced Elective at San Francisco Free Clinic

This advanced clinical elective in primary care and community health provides the learner with an immersion experience in primary care at a unique, underserved site: San Francisco Free Clinic. During this month-long rotation supervised by Yale medical school alumni Patricia and Richard Gibbs and colleagues, students assume significant autonomy in seeing diverse patients. Students with interest in orthopaedics can sometimes accompany Dr. Richard Gibbs to provide orthopaedic care to members of the San Francisco Ballet. This elective is offered to senior students, who are expected to assume full responsibility for their patients, under the supervision of expert attending physicians. Director: P. Ellis

Primary Care and Community Health Advanced Clinical Elective in Appalachia Six-week advanced clinical elective in primary care and community health. Director: L.C. Mayes

Primary Care Wednesday Evening Clinic This one-year weekly outpatient elective in the Primary Care Center provides experience in the longitudinal care of adults. Students are directly responsible for care of medical problems and preventive care as well as coordination of specialty care for their own patient panel. There are weekly pre-clinic conferences, which include Journal Club and primary care case-centered topics presented by students or specialty attending physicians. The clinic is held every Wednesday evening, 5–9 p.m., except the day before Thanksgiving and between Christmas and New Year's. It is open to a limited number of students who have completed at least half of their clerkships (M.D./Ph.D.) or all of their clerkships (M.D.). Students must have completed the MAP clerkship. Director: P. Oray-Schrom; staffed by rotating attending physicians

Seminar in Biomedical Ethics Each morning and afternoon, students participate in a ninety-minute seminar consisting of a thirty-minute talk by a faculty member followed by a sixty-minute discussion. Subjects include history of bioethics, clinical ethics consultations, narrative ethics, the role of bioethics in policy making, ethical issues in OB/GYN, ethical issues related to the care of those with mental illness, pediatric ethics, landmark cases, and more. Director: M. Mercurio

Seminar in Healer's Art This innovative discovery model course in values clarification and professionalism for first- through fourth-year medical students is offered annually at more than ninety U.S. medical schools as well as medical schools around the world. Designed in 1991 by Rachel Naomi Remen, M.D., and offered at the School of Medicine since 1999, the course offers a safe learning environment for a personal, in-depth exploration of the time-honored values of service, healing relationship, reverence for life, and compassionate care. It utilizes principles of adult education, contemplative studies, humanistic and transpersonal psychology, cognitive psychology, formation

education, creative arts, and storytelling to present and explore human dimensions of medicine rarely discussed in medical training. Topics include deep listening, presence, acceptance, loss, grief, healing, relationship, encounters with awe and mystery, and self-care practices. The curriculum enables students to uncover and strengthen the altruistic values, sense of calling, and intention to serve that have led them to medicine, creating a firm foundation for meeting the challenging demands of contemporary medical training and practice. In a rigorous standardized course evaluation, the thousands of students nationwide and internationally who take the course every year report that it fills a gap in their existing curriculum and enables them to make the practice of medicine uniquely their own. Faculty are often as profoundly affected by the course as the students, reporting a renewal of their enthusiasm for teaching and their love of medicine. Students and faculty participate together in a discovery model that transcends the divisiveness of expertise to explore service as a way of life. The process-based curriculum takes a highly innovative, interactive, contemplative, and didactic approach to enabling students to uncover and recognize the personal and universal meaning in the daily work of medicine. Dates to be determined. Director: T. Sanft

Seminar in Life Worth Living What makes a life worth living in medicine? In an era when the prevalence of physician burnout is high, and there is much change in the profession, we ask ourselves, “How should I live my life? What really matters? What makes a life worth living?” We engage these questions in a small-group discussion format, modeled after the course by the same name taught at Yale College (Humanities 411) and adapted for the School of Medicine. This is a course of “applied philosophy,” in which we address questions of meaning and purpose in our profession and reflect upon our own practice. In particular, we explore the question “What makes a life worth living in medicine?” We consider original texts and seminal works from Judaism, Buddhism, Christianity, and Islam, as well as contemporary thought leaders and evidence-based research. Special attention is given to the role that money, power, justice, and social prestige play in shaping our profession. Director: B.R. Doolittle

Seminar in Narrative Medicine: Close Reading and Reflective Writing This six-session seminar explores the vital connection between storytelling and the art of healing. Narrative medicine integrates the power of literature with the practice of medicine, enriching healthcare delivery, provider well-being, and the patient experience. We examine diverse works, including fiction and non-fiction in a variety of formats such as short stories, popular press, memoirs, and other illness narratives. We engage in reflective writing exercises inspired by these narratives, enabling participants to hone their voices while exploring the craft of storytelling. We learn how narrative medicine can: enhance patient care by cultivating deeper empathy, improving communication skills, and building stronger collaborative relationships; combat burnout by fostering resilience and helping participants find new meaning in their clinical practice; and encourage self-discovery by providing methods to explore personal experiences through reflective writing. Open to all medical students beyond second year and PA students. Director: A. Merritt

Seminar in Poetry and Medicine In a 2007 essay, Stephanie Burt and others wondered “Does poetry have a social function?” In that essay she argues that “one of poetry’s chief aims is to illumine the walls of mystery, the inscrutable, the unsayable.” She goes on to say that poetry is “an opportunity to learn to live in doubt and uncertainty.” Many of us pursue medicine in search of reason and precision, and some of our greatest challenges

in medicine, and in life, are when things are uncertain. It is here that poetry might help us and our patients. This elective seminar explores poetry's relevance to health care including students, doctors, nurses, physician assistants, and our patients and their families. The relationship between poetry and science has a long, rich history including such greats as John Keats (1795–1821), Oliver Wendell Holmes (1809–1894) and William Carlos Williams (1883–1963). Today, the tradition of physician-poet lives on in the work of such contemporary authors as C. Dale Young, Raphael Campo, Michael Salzman, Jack Coulehan, Audrey Shafer, Molly O'Dell, Richard Berlin, and others. The false dichotomy between art and science is a modern concept. This course explores how poetry can inform our pursuits as practitioners. Six weeks; Open to fourth- and fifth-year M.D. students.

Uncertainty in Medicine: Critical Thinking and Decision-Making The goal for this course is to recognize that while much of medical education is traditionally centered on accrual of information for rapid recall, the health care profession is riddled with uncertainty and incomplete information. Health care providers are faced with multidimensional and multidisciplinary problems whose solutions require a combination of rigor, creativity, and collaboration. While our current approach to medical education is only reinforced by emphasis on short-answer standardized tests as metrics of aptitude, this course aims to combat that emphasis and prepare students for the complexities of the medical field by focusing on critical thinking and problem-solving skills in a case-based collaborative environment. We use case-based exercises to analyze topics that have contemporary relevance to medicine, e.g., development of screening programs for cancer or reporting and reduction of medical error. These exercises utilize a collaborative approach aimed at developing several distinct skills: defining the scope of a complex problem, reducing a problem into definable parts, examining each part from multiple angles, prioritizing the parts and their potential solutions, and committing to an actionable solution while acknowledging unaddressed complexities and unknowns. Open to all medical students. Enrollment limited to twenty. The class meets weekly at noon from mid-June to early August. Director: G. Lister