

SCHOOL OF MEDICINE

The School of Medicine offers courses of study leading to the M.S., Ph.D., and M.D. degrees.

Undergraduate Programs in the School of Medicine

Many courses in the School of Medicine are open to any registered Stanford student who has fulfilled the prerequisites, subject to the usual limits of course enrollment and faculty approval. The school also offers courses specifically for undergraduates, as well as graduate-level courses where advanced undergraduates with backgrounds in the life sciences are welcome. Among the undergraduate offerings are numerous Stanford Introductory Seminars for freshmen and sophomores, the Emergency Medical Technician program, Stanford Immersion in Medicine Physician Shadowing, Pre-Vet Advisory, and courses in Community Health, including participation in the Stanford Free Clinics. The school also offers several undergraduate courses through the Department of Biology and the Interdisciplinary Program in Human Biology in the School of Humanities and Sciences. See the school's Undergraduate Studies (<http://med.stanford.edu/education/undergrad-studies.html>) web site for additional information.

M.S. and Ph.D. Programs in the School of Medicine

The School of Medicine is home to graduate programs covering a broad range of disciplines within biomedicine leading to Ph.D. or M.S. degrees. These programs focus on interdisciplinary training with in-depth investigation of an original problem of fundamental importance to the biosciences. Each degree program sets its own curriculum, but many courses are taught by groups of faculty from multiple programs and departments. Flexibility is a priority to ensure that all students obtain the best possible training for pursuing careers in their areas of interest. The school is dedicated to training students from diverse backgrounds, and to the promotion of diversity in graduate education. Admission is through one of about 15 home programs. These home programs enable students to carry out dissertation research and training with School of Medicine faculty, as well as investigators in the departments of Biology and Biophysics in the School of Humanities and Sciences. Detailed information on School of Medicine M.S. and Ph.D. programs, curricula, and research can be found at Stanford's School of Medicine Master's Degree Programs (<http://med.stanford.edu/education/masters-programs.html>) and Ph.D. Programs (<http://med.stanford.edu/education/phd-programs.html>) web site. Application information can be found at Stanford's Office of Graduate Admissions (<http://gradadmissions.stanford.edu>) web site.

M.D. Program in the School of Medicine

The School of Medicine seeks to attract students who are passionate about scholarship and wish to improve the health of the world's people through research, innovation, and leadership. The Stanford M.D. Discovery Curriculum (<http://med.stanford.edu/md/discovery-curriculum.html>) provides education in biomedical and clinical sciences along with study and independent research through scholarly concentrations. Emphasis is placed on interdisciplinary learning, with streamlined content, interactive approaches, and melding of basic science and clinical instruction across the curriculum. Blocks of unscheduled time allow for individual or group study, participation in elective courses, research, and reflection. The flexible Discovery Curriculum supports student's scientific discovery and self-discovery by offering multiple learning pathways at a more individualized pace and opportunities for pursuing a second degree, such as an M.P.H., M.B.A.,

Master's of Science in Epidemiology or Health Services Research, a Ph.D., or participating in longitudinal and global health research experiences.

The Discovery Curriculum features robust basic science content, integrated organ based learning, and compassionate patient-centered clinical training. Core foundational content is presented in the first year and broad clinical science education occurs throughout the curriculum with ample exposure to patient care and the practice of medicine. Students may begin clinical clerkships as early as May of the second year. The structure of clinical training is flexible, allowing customization of the order in which core clerkships are completed and offering a wide variety of selective/elective clerkships. The curriculum also features a strong emphasis on population health with courses that include classroom and experiential learning to provide understanding of the socioeconomic determinants of the health of patients and communities.

The required Scholarly Concentrations offer opportunities for developing skills that enhance basic science and clinical training in areas such as bioengineering, biomedical ethics and medical humanities, biomedical informatics, clinical research, community health, health services and policy research, and the molecular basis of medicine. Through the Scholarly Concentration program, these skills may be applied in clinical areas housed within centers at Stanford such as the Comprehensive Cancer Center, the Cardiovascular Institute, the Neuroscience Institute, the Institute of Immunity, Transplantation, and Infection, and Women's Health at Stanford. Study in a scholarly concentration typically includes course work and research activities. Funding for research and other scholarly opportunities may be supported through the Medical Scholars program, which funds student research projects at Stanford and overseas.

The Medical Scientist Training Program (MSTP) MD-PhD program provides a select group of medical students with an opportunity to pursue a training program designed to equip them for careers in academic investigative medicine. Individualization of the curricular and research programs of each trainee is the hallmark of the Program. Training for a combined MD-PhD includes the same content encountered by students who pursue each degree separately, but the total time of training should be less than the sum of the time normally taken for each degree. To this end, students must plan their training carefully and commit to a rigorous and intensive period of study. The flexible curriculum at Stanford Medical School allows each student to satisfy the requirements for the MD degree and to pursue an independent research program. In what follows, we provide a general outline of what to expect.

In addition to a variety of other dual degree opportunities, Stanford also collaborates with the University of California, Berkeley, to offer students opportunities for M.D./M.P.H. training. Details about these programs may be found at Stanford's Dual Degree and Multi-Degree Programs (<http://med.stanford.edu/education/dual-degree-programs.html>) web site.

Stanford is committed to representing the diversity of the U.S. and California populations by seeking a diverse body of students who are interested in the intellectual substance of medicine and committed to advancing the field of health care, broadly defined. Provided an applicant to the school has completed basic courses in physics, chemistry, and biology, the choice of an undergraduate major may reflect other interests, including the arts and humanities. Course work in advanced biology such as biochemistry, molecular biology, or genetics and the behavioral sciences is recommended because of their importance in understanding health care. Breadth of interests and depth of experiences play an important role in the selection of students from among those applicants having superior academic records.

The M.D. degree requires 12 quarters of registration at full Med-MD tuition; the joint M.D./Ph.D. degree requires 15 quarters. Completion of the M.D. degree must be achieved within six years, unless a petition is granted to extend this time frame. For further details on the M.D. degree, including admission requirements, see the Stanford (<http://>

med.stanford.edu/md/) MD Program (<http://med.stanford.edu/md.html>) website.

Multiple-Degree Programs in the School of Medicine

M.D./Ph.D.

Many M.D. students undertake a Ph.D. while they are at Stanford. Popular choices are School of Medicine programs in Bioengineering, Biomedical Informatics, or one of the 13 Biosciences home departments. At the School of Engineering, the Biomechanical Engineering M.D./Ph.D. program also makes a special effort to work with M.D. students.

Medical Scientist Training Program

The Medical Scientist Training Program (MSTP) provides medical students with an opportunity to pursue an individualized program of research and course work leading to both the M.D. and Ph.D. degrees. It is designed to equip students for careers in academic investigative medicine, and emphasizes flexibility of curricular and research programs for each trainee. Training for a combined M.D.-Ph.D. includes the same content encountered by students who pursue each degree separately, but the total training time is less than the sum of the time normally required for each degree. The flexible curriculum at Stanford's School of Medicine allows each student, in consultation with a preceptor and other advisers, to pursue a plan of study that satisfies the requirements for the M.D. and allows performance of doctoral-level research leading to the Ph.D. Students interested in joining the MSTP are considered for admission at the time of their application to the School of Medicine M.D. program and are asked to provide supplemental information relevant to their research background. Current Stanford M.D. students may also apply for admission to the MSTP.

M.D./M.B.A.

M.D. students interested in combining their medical training with training in business can take advantage of a dual degree M.D./M.B.A. program that allows students to obtain both degrees after completion of a 5-year curriculum. Students must apply to and be admitted by the Stanford Graduate School of Business, at the time of their admission to the medical school or after beginning their M.D. studies.

M.D./M.P.H.

A unique collaboration with UC Berkeley allows M.D. students to pursue and obtain a Master of Public Health degree while still at the Stanford School of Medicine. This dual degree M.D./M.P.H. program is open to M.D. students who participate in the Scholarly Concentration in Community Health. Students must apply to and be admitted by the UC Berkeley program; course work is undertaken at the UC Berkeley campus.

Ph.D./M.S.M.

The Master of Science in Medicine (<http://msm.stanford.edu/>) program admits current Stanford Ph.D. students who have a commitment to translational research, but are not interested in becoming clinicians. The goal of the program is to train researchers in human biology and disease to be better equipped to translate new scientific discoveries into useful medical advances. Students offered admission into any Ph.D. program at Stanford may apply for admission to the master's program. During their first five quarters, students take basic biomedical science courses with Stanford M.D. students. The School of Medicine M.D. curriculum is presented in a succinct format that allows time for students to concurrently complete their Ph.D. course requirements and lab rotations. By early in their second year, students choose a lab for their Ph.D. thesis research and complete their medical course work. They also elect a clinical co-mentor to discuss translational research needs and help to arrange a short clinical experience. Upon completion of the Program, participating students receive an M.S. in Medicine.

M.D./M.S. Degrees

Health Policy: The master's degree program in Health Policy seeks to train students in the quantitative analysis of issues in health and medical care. The program is based upon an individual development plan, and includes both course work and completion of a master's project under the direction of a program core faculty member. The typical student in the program is a physician who has completed residency training and is preparing for a research career; the program also admits Stanford medical students and others with a strong background in health policy analysis. The core faculty interests include outcomes research, health economics, health care organization, health care access, quality of care, decision analysis, clinical guidelines, and assessment of patient preferences and quality of life.

Epidemiology: The Graduate Interdisciplinary Program in Epidemiology is a research oriented program that offers instruction and research opportunities leading to the M.S. degree in Epidemiology, the study of the distribution and determinants of diseases in populations.

Biomedical Informatics: An option for anyone who wishes to either perform research in Biomedical Informatics as clinical faculty at a school of medicine or for those who wish to continue into the health care industry or government. There is high need for trained individuals who understand the practice of medicine and who are able to develop and implement applications in biomedical informatics.

Biomedical Investigation (<http://med.stanford.edu/md/discovery-curriculum/BergScholarsProgram.html>): In this program, M.D. students complete the core pre-clerkship curriculum of the M.D. program then undertake additional coursework related to their research interests as one of the pathways in the Discovery Curriculum. The program was designed to address the decreasing number of physician-scientists by shortening the training period without compromising the quality of research. Biomedical Investigation is a sub-plan of the M.S. in Medicine. It is a research-oriented program resulting in an M.S. in Medicine in Biomedical Investigation.

Biomechanical Engineering: Bioengineering is a fusion of engineering and the life sciences that promotes scientific discovery and the invention of new technologies and therapies through research and education. It encompasses both the use of biology as a new engineering paradigm and the application of engineering principles to medical problems and biological systems. The discipline embraces biology as a new science base for engineering.

M.D./M.P.P. Degree

Matriculated M.D. students from Stanford's School of Medicine may apply for admission to the joint M.P.P./M.D. degree program (<http://med.stanford.edu/education/dual-degree-programs.html>). Applications are accepted anytime after a student has completed one year in the M.D. program. Students must obtain the permission of the School of Medicine to participate in the joint degree program. Students are required to devote two continuous years of full-time study to the completion of the first two years of the core M.D. curriculum. Students then devote one continuous academic year of study to the completion of the M.P.P. core curriculum. At other times, the student may be enrolled in either unit and may take courses from either unit to satisfy the joint degree requirements.

Departmental Dual Degrees

Education: The Individually designed M.A. in Education is designed for Stanford doctoral students enrolled outside of the School of Education. Individuals enrolled at the doctoral level at Stanford can be considered for this program.

E-IPER: Stanford's Emmett Interdisciplinary Program in Environment and Resources (E-IPER) gives students a focused science, engineering, and

technology background, allowing them to integrate science with law and business to address critical environmental and sustainability issues.

Public Policy: Stanford University offers two master's programs in Public Policy. A Master's of Public Policy (M.P.P.) is a two-year professional degree and the Masters of Arts in Public Policy (M.A.) is a one-year non-professional degree. Students currently enrolled in other Stanford graduate programs, and applicants to those programs, may apply for either of the Public Policy master's programs. M.D. students are eligible to apply for a dual M.A. degree program. See above for the joint M.D./M.P.P. program.

Dean: Lloyd Minor

Senior Associate Dean for Graduate Education and Postdoctoral Affairs: William Talbot

Senior Associate Dean for Medical Education: Charles Prober

Medicine Interdisciplinary Courses

INDE 201. Practice of Medicine I. 8 Units.

Six quarter series extending throughout the first two years of the MD program, interweaving core skills training in medical interviewing and the physical examination with other major threads addressing the context of medical practice: information literacy, nutrition principles, clinical epidemiology and biostatistics, evidence-based practice, psychiatry, biomedical ethics, health policy, population health. Core clinical skills are acquired through hands-on practice, and evaluated through an extensive program of simulated medical encounters, in which students interview, examine, and manage patients in a mock clinic. The information literacy thread introduces students to informatics and knowledge management, biomedical informatics, and evidence-based medicine searching. Nutrition principles are acquired through interactive, web-based instruction, and reinforced through problem-based learning cases, which run in parallel to the basic science components over the first year. In epidemiology students learn the taxonomy of epidemiological studies, how to critically read a journal article, and how to recognize and understand the concepts behind different clinical study designs. Topics include bias, confounding, diagnostic testing and screening, and "how statistics can lie." Psychiatry introduces students to the unique role of medical students in talking with patients, the difference between process and content in patient communication, how to respond to breaks in the patient-physician relationship, and the relationship between the quality of the patient-physician interaction and health outcomes. Health care policy covers such topics as health insurance, physician payment, health care costs, access, measurement and improvement of quality, regulation and health care reform. Biomedical ethics includes important ethical issues in medical practice, such as confidentiality, privacy, and ethical issues relating to medical students. The population health curriculum exposes students to concepts of public health, community action, and advocacy, and includes a year-long, community-based project. At the end of this quarter students participate in a performance-based assessment of the medical interview skills. Course offered to MD and MSPA students only.

INDE 202. Practice of Medicine II. 5 Units.

Medical interview and physical examination skills, information literacy, nutrition principles, evidence-based practice, health policy, and population health are covered. At the end of this quarter, students participate in a performance-based assessment of their medical interview and physical examination skills. See INDE 201 for a complete description of the Practice of Medicine course series. Course open to MD and MSPA students only.

INDE 203. Practice of Medicine III. 6 Units.

Medical interview and physical examination skills, biomedical literature retrieval and appraisal, nutrition principles, evidence-based practice, biomedical ethics, and population health are covered. Students begin clinical problem-solving sessions to learn the approach to common and important clinical problems. Cases integrate other course themes of population health, evidence-based practice, clinical ethics, nutrition, health policy, and behavioral medicine. Students begin transition from comprehensive to problem-focused patient encounters. Students also gain exposure to geriatrics, pediatrics, and interprofessional healthcare teams, and practice mental health interview skills. At the end of this quarter, students participate in a performance-based assessment of their medical interview and physical examination skills. See INDE 201 for a complete description of the Practice of Medicine course series. Course open to MD and MSPA students only.

INDE 204A. Practice of Medicine IV-A. 4 Units.

The second year of the Practice of Medicine series (INDE 204 and 205) emphasizes clinical reasoning, clinical practicum, and clinical procedures. Students continue clinical problem-solving sessions to learn the approach to common and important clinical problems. Cases integrate other course themes of population health, evidence-based practice, clinical ethics, nutrition, health policy, and behavioral medicine. Students spend one-half day per week in a clinical setting, practicing medical interview, physical examination skills, oral presentations, and clinical note-writing under the mentorship of a clinical tutor. In the practicum, students also gain experience with other practical aspects of patient care. The Clinical Procedures segment introduces common and important procedures in clinical practice, including phlebotomy, intravenous line insertion, and electrocardiography.

INDE 204B. Practice of Medicine IV-B. 4 Units.

The second year of the Practice of Medicine series (INDE 204 and 205) emphasizes clinical reasoning, clinical practicum, and clinical procedures. Students continue clinical problem-solving sessions to learn the approach to common and important clinical problems. Cases integrate other course themes of population health, evidence-based practice, clinical ethics, nutrition, health policy, and behavioral medicine. Students spend one-half day per week in a clinical setting, practicing medical interview, physical examination skills, oral presentations, and clinical note-writing under the mentorship of a clinical tutor. In the practicum, students also gain experience with other practical aspects of patient care. The Clinical Procedures segment introduces common and important procedures in clinical practice, including phlebotomy, intravenous line insertion, and electrocardiography.

INDE 205A. Practice of Medicine V. 3 Units.

Continued emphasis on clinical reasoning, clinical practicum, and clinical procedures. Students continue clinical problem-solving sessions to learn the approach to common and important clinical problems. Cases integrate other course themes of population health, evidence-based practice, clinical ethics, nutrition, health policy, and behavioral medicine. Students spend one-half day per week in a clinical setting, practicing medical interview, physical examination skills, oral presentations, and clinical note-writing under the mentorship of a clinical tutor. In the practicum, students also gain experience with other practical aspects of patient care. For the Clinical Procedures segment, students will have an opportunity in the Emergency Department to practice performing procedures learned in the previous quarter. At the end of this quarter, students participate in a comprehensive four-station objective structured clinical examination (OSCE) performance-based assessment of their medical interview, physical examination, and clinical problem-solving skills.

INDE 205B. Practice of Medicine V. 3 Units.

Continued emphasis on clinical reasoning, clinical practicum, and clinical procedures. Students continue clinical problem-solving sessions to learn the approach to common and important clinical problems. Cases integrate other course themes of population health, evidence-based practice, clinical ethics, nutrition, health policy, and behavioral medicine. Students spend one-half day per week in a clinical setting, practicing medical interview, physical examination skills, oral presentations, and clinical note-writing under the mentorship of a clinical tutor. In the practicum, students also gain experience with other practical aspects of patient care. For the Clinical Procedures segment, students will have an opportunity in the Emergency Department to practice performing procedures learned in the previous quarter. At the end of this quarter, students participate in a comprehensive four-station objective structured clinical examination (OSCE) performance-based assessment of their medical interview, physical examination, and clinical problem-solving skills.

INDE 206. Practice of Medicine VI. 5 Units.

This last segment of the Practice of Medicine series is an intensive, four-week learning experience to consolidate clinical skills from prior quarters, and a final preparation for transition to clerkships. An extensive series of workshops covers topics such as dermatology, ophthalmology, advanced clinical reasoning, advanced presentations, bedside skills, ethics, palliative medicine, advanced sexual history, electronic medical record, ekg interpretation, intravenous fluid and electrolyte management. Students practice clinical procedures with task trainers and on a cadaver. This quarter also includes a professionalism series to prepare students for entry into clinical practice. Special clinical practice sessions are held as a capstone to clinical skills preparation. Students must enroll in both INDE 224 and INDE 206.

INDE 207A. Medical Mandarin I: Beginning. 2-3 Units.

Develops conversational communication skills and essential medical vocabularies. Teaches in pinyin pronunciation system, which provides an accessible method of learning basic phrases. The foundations of taking a comprehensive patient history in Mandarin and doing medical interviews at individual hospital divisions, including making introductions, soliciting symptoms, explaining health concepts (e.g. diseases and prescriptions) as well as daily survival conversations. Main goals are to improve rapport with Chinese patients through Mandarin fluency in the medical setting and to promote understanding of Chinese culture in the context of health care as well as daily life. Students registering for 3 units participate in clinic visits and field activities.

INDE 207B. Medical Mandarin II: Intermediate. 2-3 Units.

For students who already have a basic command of spoken Chinese. Conversational communication skills practiced in a more advanced setting, including more sophisticated assessment of patient history and different tasks such as giving medical instructions and doing labs and tests. Builds working vocabulary for organ system, disease assessment to conduct a full physical exam, and to describe treatment modalities for Chinese-speaking patients (diagnostic and therapeutic). Students registering for 3 units participate in clinic visits and field activities. Prerequisite: one year of college-level Chinese or instructor assessment of fluency.

INDE 207C. Medical Mandarin III: Advanced. 2-3 Units.

Access advanced professional medical vocabulary, conduct medical research, and engage in discussions in Chinese. Aims at a proficiency level of medical interpreting or doing other independent work in Chinese. Students are also assisted in doing a project or projects related to a specific field of medicine. Students registering for 3 units participate in clinic visits, field activities or projects. Prerequisite: completion of Medical Mandarin II, or advanced Chinese proficiency.

INDE 207D. Professional Mandarin I. 2-3 Units.

Designed for students who seek professional development via Mandarin. Coursework includes lectures, online classes, language partnerships, selected topics, projects and field activities. Goal is to enhance students' language abilities as professionals and facilitate a career. Students choose to enroll for 2 units or 3 units depending upon an agreed- upon workload approved by the instructor.

INDE 208A. Medical Mandarin I: Beginning. 2-3 Units.

Continuation of 207A. See description for 207A. Students participating in classroom and online instruction only register for 2 units. Students registering for 3 units participate in clinic visits and field activities as well.

INDE 208B. Medical Mandarin II: Intermediate. 2-3 Units.

Continuation of 207B. See description for 207B. Students participating in classroom and online instruction only register for 2 units. Students registering for 3 units participate in clinic visits and field activities as well.

INDE 208C. Medical Mandarin III: Advanced. 2-3 Units.

Access advanced professional medical vocabulary, conduct medical research, and engage in discussions in Chinese. Aims at a proficiency level of medical interpreting or doing other independent work in Chinese. Students are also assisted in doing a project or projects related to a specific field of medicine. 3 units Includes clinic visits and field activities. Prerequisite: completion of 207C, or advanced Chinese proficiency.

INDE 208D. Professional Mandarin II. 2-3 Units.

Continuation of INDE 207D. Designed for students who seek professional development via Mandarin. Coursework includes lectures, online classes, language partnerships, selected topics, projects and field activities. Goal is to enhance students' language abilities as professionals and facilitate a career. Students choose to enroll for 2 units or 3 units depending upon an agreed- upon workload approved by the instructor. Prerequisite: INDE 207D.

INDE 209. Analysis of Public Companies in the Life Sciences. 2 Units.

Student lead: Life Science companies are often valued with a different methodology than traditional valuation metrics. This course will serve to teach students how to analyze a publicly traded life science company or sector using publicly available materials online such as 10-K, 13-F, conference calls, and financial & technical analysis. In addition, students will learn how to access various Stanford resources (analyst reports, Bloomberg, etc). Students will work in teams throughout class and publish an investment analysis at the end of the course.

INDE 209A. Medical Mandarin III: Beginning. 2-3 Units.

Continuation of 207A/208A. See description for 207A. Students participating only in classroom and online instruction register for 2 units. Students registering for 3 units participate in clinic visits and field activities as well.

INDE 209B. Medical Mandarin III: Intermediate. 2-3 Units.

Continuation of 207B/208B. See description for 207B. Students participating only in classroom and online instruction register for 2 units. Students registering for 3 units participate in clinic visits and field activities as well.

INDE 209C. Medical Mandarin III: Advanced. 2-3 Units.

Access advanced professional medical vocabulary, conduct medical research, and engage in discussions in Chinese. Aims at a proficiency level of medical interpreting or doing other independent work in Chinese. Students are also assisted in doing a project or projects related to a specific field of medicine. 3 units Includes clinic visits and field activities. Prerequisite: completion of 208C or advanced Chinese proficiency.

INDE 209D. Professional Mandarin III. 2-3 Units.

Continuation of INDE 208D. Designed for students who seek professional development via Mandarin. Coursework includes lectures, online classes, language partnerships, selected topics, projects and field activities. Goal is to enhance students' language abilities as professionals and facilitate a career. Students choose to enroll for 2 units or 3 units depending upon an agreed- upon workload approved by the instructor. Prerequisite: INDE 208D.

INDE 211. Creative Writing. 1 Unit.

For medical students - all levels of writing skill. Examines uses of creative writing, including understanding the experience of medical training. May be repeated for credit.

INDE 212. Medical Humanities and the Arts. 2 Units.

The interdisciplinary field of medical humanities: the use of the arts and humanities to examine medicine in personal, social, and cultural contexts. Topics include the doctor/patient relationship, the patient perspective, the meaning of doctoring, and the meaning of illness. Sources include visual and performing arts, film, and literary genres such as poetry, fiction, and scholarly writing. Designed for medical students in the Biomedical Ethics and Medical Humanities Scholarly Concentration, but all students are welcome.

INDE 214. Stanford Medical Student Journal. 1 Unit.

Provides an opportunity for editors of all levels to cultivate their skills and assist in preparing pieces submitted by colleagues for publication in the Stanford Medical Student Journal. Students enrolled in the course work closely with student authors as well as other editors. Editors examine multiple categories of writing, including opinion pieces, poetry, memoirs, book reviews, case reports and investigative reports. The Journal is published two to three times per year and highlights the diverse talents of Stanford medical students in both scientific writing and the humanities.

INDE 215. Queer Health & Medicine. 1 Unit.

Explores specific, pertinent, and timely issues impacting the health of the lesbian, gay, bisexual, and transgender community; examines the role of the primary care physician in addressing the health care needs of this community. Guest lecturers provide a gender-sensitive approach to the medical care of the LGBT patient, breaking down homophobic barriers and reaffirming patient diversity. May be repeated for credit.

INDE 217. Physician Scientist Hour. 1 Unit.

Enrollment is limited to MD, PhD, or MD-PhD students interested in careers as physician scientists. Focus is on aspects of developing careers in biomedical research through a mix of research lectures, clinical case presentations, and physician-scientist guest speakers.

INDE 218. Histology. 1 Unit.

This course focuses on the microscopic structure of the major organ systems, including the cardiovascular, respiratory, gastrointestinal, renal, and reproductive systems. Sessions examine the unique features of the cells and tissues that comprise the major organs, describe how they contribute to the organs' functions, and explore how the form the foundation for many pathologic processes. Course open to MD and MSPA students only.

INDE 221. Science of Medicine I. 12 Units.

First course in three-sequence Science of Medicine block. Focus is on structure, function, disease, and therapeutics of the respiratory system and the cardiovascular system. The Science of Medicine block presents organ system-based histology, pathology, physiology, pharmacology, and infectious disease in a sequence of interdisciplinary courses. Each organ-specific integrated course includes a review of the anatomy and related histology, normal function of that organ system, how the organ system is affected by and responds to disease including infection, and how diseases of that organ system are treated (therapeutics).

INDE 222A. Science of Medicine II-A. 7 Units.

Focus is on structure, function, disease, and therapeutics of the renal, gastrointestinal, and hepatic systems. Science of Medicine presents organ system-based histology, pathology, physiology, pharmacology, and infectious disease in a sequence of interdisciplinary courses. Each integrated course includes a review of the anatomy, related histology, and normal function of one or more organ systems, how the organ systems are affected by and respond to disease including infection, and how diseases of those organ systems are treated (therapeutics).

INDE 222B. Science of Medicine II-B. 7 Units.

Focus is on structure, function, disease, and therapeutics of the endocrine and musculoskeletal systems and on Women's Health. Science of Medicine presents organ system-based histology, pathology, physiology, pharmacology, and infectious disease in a sequence of interdisciplinary courses. Each integrated course includes a review of the anatomy, related histology, and normal function of one or more organ systems, how the organ systems are affected by and respond to disease including infection, and how diseases of those organ systems are treated (therapeutics). Prerequisites if applicable: INDE-221, completed or concurrent INDE-222-A.

INDE 223A. Science of Medicine III-A. 5 Units.

Focus is on structure, function, disease, and therapeutics of the nervous system and skin. Science of Medicine presents organ system-based histology, pathology, physiology, pharmacology, and infectious disease in a sequence of interdisciplinary courses. Each integrated course includes a review of the anatomy, related histology, and normal function of one or more organ systems, how the organ systems are affected by and respond to disease including infection, and how diseases of those organ systems are treated (therapeutics). Prerequisites if applicable: INDE-221, INDE-222-A.

INDE 223B. Science of Medicine III-B. 5 Units.

Focus is on structure, function, disease, and therapeutics in the areas of Hematology and Autoimmune Disease. Science of Medicine presents organ system-based histology, pathology, physiology, pharmacology, and infectious disease in a sequence of interdisciplinary courses. Each integrated course includes a review of the anatomy, related histology, and normal function of one or more organ systems, how the organ systems are affected by and respond to disease including infection, and how diseases of those organ systems are treated (therapeutics).

INDE 224. Pathophysiology Capstone. 4 Units.

The Pathophysiology Capstone (PC) is a newly developed Science of Medicine (SOM) Year 2 capstone experience in Quarter 6 that will be integrated with the Practice of Medicine (PON) course called "Transition to Clerkships." This four-week long intensive spring quarter course, including 25-32 hours of instruction, focuses on the re-introduction of core pathophysiology concepts as well as delving into advanced topics, treatment, and breakthroughs based on essentials taught in the SOM series in quarters 3-5. Students must enroll in both INDE 224 and INDE 206. Prerequisites: Successful completion of Science of Medicine (SOM) I,II,III.

INDE 230A. Topics in Scientific Management. 1 Unit.

Broadly discusses foundational topics in pursuing academic careers, including the academic and faculty career landscape, establishing a writing practice, establishing an independent research agenda, issues of diversity, equity and inclusion, presentation skills, self-advocacy, creativity in research, establishing collaborations, and grantsmanship. Topics may vary annually.

INDE 230B. Topics in Scientific Management. 1 Unit.

Reviews management skills necessary for successfully assuming leadership roles in scientific research. Addresses some of the most difficult aspects of developing, directing, and managing people and projects and running a research group, especially issues that new faculty have traditionally learned by trial and error over a number of years. Topics include: the faculty job search process and strategies, key elements in starting a lab, basic principles regarding legal dimensions of scientific activity (intellectual property, royalties, links with industry), team science, research ethics, communication and negotiation skills, writing and securing grants. Topics may vary annually.

INDE 230C. Topics in Scientific Management. 1 Unit.

Deep dive into topics in mentorship, which may include mentoring in a research environment, navigating all directions of mentoring relationships within academia, conflict management and resolution, communication styles, setting expectations, giving feedback, cultivating ethical behavior, promoting research self-efficacy, and navigating intercultural dynamics. Topics may vary annually.

INDE 233. Medical Education Seminar Series. 1 Unit.

For pre-clinical and clinical medical students. A series of sessions rotating among the following formats: Medical Education journal club; education works-in-progress; topics in medical education design, implementation, and evaluation; teaching M&M; hot topics and controversies in medical education. May be repeated for credit.

INDE 238. Managing Difficult Conversations. 3 Units.

(Crosslisted with GSBGEN 368) This elective 3-unit course is offered to all medical students, residents, and fellows, and to GSB students who aspire to improve their ability to deal effectively with difficult interpersonal situations. The course will be taught by William F. Meehan III, the Raccoon Partners Lecturer in Strategic Management, Stanford Graduate School of Business and Charles G. Prober, M.D., Professor of Pediatrics, Microbiology & Immunology and Senior Associate Vice Provost for Health Education, Stanford School of Medicine. The course, which will be case-based, will involve frequent student-to-student and student-to-instructor role-playing in authentic difficult professional and interpersonal situations. Topic-specific experts often will be present to participate as class guests. Relevant principles of professionalism, leadership, and psychology underlie the course pedagogy. Students will be expected to attend all classes unless excused in advance. Class preparation will include reading of assigned cases; analysis of the cases and recommendations as to how to confront specific difficult conversations (consistent with assigned study questions); and reading of assigned background material. It is important that all students participate actively in classroom discussions. Class size will be limited to 40 students per the following: (1) a maximum of 20 MBA students and (2) a maximum of 20 non-GSB graduate students. MD student enrollment only in INDE 238, GSB students enroll under GSBGEN 368.

INDE 240. Humanistic Medicine: Engaging Difference by Design. 1 Unit.

In the changing healthcare landscape, maintaining a human connection with patients is more essential than ever. Humanistic medicine is defined by its focus on building a patient-provider relationship grounded in compassion and empathy. It's medicine practiced with sensitivity to diverse cultural backgrounds, values, and preferences. How do our own unique identities as healthcare practitioners intersect with those of our patients? Our colleagues? This course incorporates experiential activities with active discussion to explore the complex ways that identities intersect in medicine, starting with our own.

INDE 257. Global Health Storytelling. 1 Unit.

Global health storytelling is a hands-on workshop that teaches global health students the art of performing compelling stories. Participants will focus on seeking, structuring, and sharing stories culminating in a live performance in front of their peers. Through the workshop, students will learn the narrative structure of a story, practice active listening, examine the importance of body language and dramatic techniques, and understand the power of narrativizing medical research and clinical experiences.

INDE 258. PSTP Career Development Symposium. 1 Unit.

Enrollment is limited to senior MD program students. Preference given to MSTP and Berg Scholars Program participants. Focus is on providing guidance to students who are pursuing physician-scientist careers. Topics include introduction to physician investigator careers, identifying a research area and mentor, how to maintain a research focus in a clinical environment, clinical research: challenges and rewards, staffing and funding a research group. Guest speakers include Stanford faculty physician-scientists and physician-scientist assistant professors for a panel discussion. Prerequisites: Must be a senior MD program student. Priority will be given to MSTP and Berg Scholars Program participants.

INDE 260A. Pharmacological Treatment of Disease. 1 Unit.

This course will provide an overview of how drugs and therapeutics are used in the treatment and prevention of diseases and disorders. It aims to review the general principles of drug action, including drug absorption, distribution, metabolism, elimination, pharmacokinetics, and pharmacodynamics of the major drug classes. For each major drug class, we will review selected prototype drugs and discuss their molecular mechanisms of action, therapeutic indication, adverse effects, contraindications and drug-drug interactions.

INDE 260B. Pharmacological Treatment of Disease. 1 Unit.

This course will provide an overview of how drugs and therapeutics are used in the treatment and prevention of diseases and disorders. It aims to review the general principles of drug action, including drug absorption, distribution, metabolism, elimination, pharmacokinetics, and pharmacodynamics of the major drug classes. For each major drug class, we will review selected prototype drugs and discuss their molecular mechanisms of action, therapeutic indication, adverse effects, contraindications and drug-drug interactions.

INDE 263. Microbiology and Infectious Diseases I. 3 Units.

First course in a two-course series exploring microbiology, pathogenesis, and clinical issues associated with infectious diseases. Patient cases springboard discussion on viral, bacterial, fungal, protozoal and helminthic pathogens. Online videos and self-assessments followed by interactive sessions and problem sets.

INDE 265. Microbiology and Infectious Diseases III. 2 Units.

Second course in a two-course series exploring microbiology, pathogenesis, and clinical issues associated with infectious diseases. Patient cases springboard discussion on microbiomes, diarrhea, hepatitis, STIs, helminths, zoonoses, and systemic diseases. Online videos and self-assessments followed by interactive sessions and problem sets.

INDE 267. Planning and Writing a Research Proposal. 1 Unit.

Students will gain fundamental skills in developing research questions and writing research proposals through a series of engaging workshops. Topics include developing a research idea; writing an executive summary, i.e. NIH-style 1-page specific aims; outlining the research plan to include rigor; and designing career development training plans. Students will develop early drafts of key proposal documents, such as the 1-page Specific Aims, and receive feedback from an instructor or Grant Coach. Students in the Medical Scholars Research Program or Biosciences Program may enroll in the course.

INDE 268. Early Clinical Engagement. 1 Unit.

Early Clinical Engagement (ECE) is an innovative course for first year medical students to participate in clinical experiences that inform their vision as future physicians. Course goals include integration into the clinical setting with preceptors, development of concrete skills, and introduction to different career paths. ECE includes three components: (1) clinical experiences, (2) interactive large group seminars, and (3) small group sessions for reflection of clinical sessions. Same as: ECE

INDE 273. Medical Improvisation. 1 Unit.

Medicine, like theater, is both a skill set and an art form. The practice of medicine demands exceptional communicative, cognitive, and interpersonal skills in order to respond to unpredictable situations while interacting with a wide variety of individuals. Improvisational theater skills have a surprising and substantial overlap with those required of clinicians. Improv is a genre of performance art grounded in principles of spontaneity, adaptability, collaboration, and skilled listening. In this course, the principles and training techniques of improvisational theater are used to highlight and improve awareness, communication, and teamwork in the field of medicine. Limited enrollment. Class meets on five consecutive Mondays 9/30, 10/7, 10/14, 10/21, 10/28 from 5:30-7:30 pm.

INDE 274. Medical Spanish. 2 Units.

Medical Spanish is a new elective course for MD and MSPA students to engage in 40-hours of medical Spanish curriculum through an online platform then solidify their knowledge through workshops for practical dialogue with faculty members at Stanford Medicine in multiple subspecialties who have native Spanish fluency. Students take part in online curriculum that is differentiated into 3 proficiency levels, therefore all levels of learners from beginners to native speakers are encouraged to participate. The online content covers over 36 medical specialties to provide a broad base of clinically relevant knowledge. The platform has validated pedagogy to meet the needs of individual learners with clinical scenarios that are relevant to medical engagements across all disciplines and inclusive of a culturally relevant approach to clinical care. Subspecialty faculty will lead the language workshops: Dr. Reena Thomas, Clinical Associate Professor of Neurology; Dr. Matias Bruzoni, Associate Professor of Surgery; Dr. Katherine Bianco, Clinical Associate Professor of Obstetrics and Gynecology; Dr. Felipe Perez, Clinical Assistant Professor of Anesthesiology; Dr. Moises Gallegos, Clinical Assistant Professor of Emergency Medicine.

INDE 281. Ethics, Science, and Society. 1 Unit.

This discussion focused Ethics, Science, and Society interactive mini-course will engage Immunology graduate students, postdoctoral fellows, and faculty in learning and conversations on topics in responsible research (including animal subjects, authorship, collaboration, conflicts of interest, data management, human subjects, mentor-mentee relationships, peer review, publication, research misconduct, and social responsibility) and diversity in science, informed by readings, case studies, individual reflections, and more. Some of the driving themes in this course include: what it means to do research well and how to and not to achieve this, why doing research well and with integrity is important, and who are researchers currently and who should they be. Prerequisite: MED 255.
Same as: IMMUNOL 258

INDE 290A. Walk With Me: A Patient and Family Centered Exploration of Health & The Health Care System. 1 Unit.

This innovative course for first year students places patients, families, and caregivers front and center in the journey to explore health from a person-centered perspective and better understand the challenges of managing optimal health in a complex health care system. The curriculum is organized around a monthly workshop series, which explores a different health systems science topic each month through lectures from experts from Stanford and the community and from the perspectives of an individual patient or caregiver, or panel, with time to engage in discussion and explore patient-centered solutions to real-world problems. Students are also paired with a patient partner for the year with whom they meet (online) monthly, outside of class, to explore the patient and caregiver journey by developing an individual relationship. Participation in this course can fulfill the ECE requirement. Enrollment by Instructor Approval Only. Please submit an application by September 11 at 11:59PM: https://stanfordmedicine.qualtrics.com/jfe/form/SV_bvzt6ZZqAg5Vvvp. Those selected will be informed by September 14 at 11:59PM so that they may enroll in the course. For questions, please email Marcello Chang (TA): marcelkc@stanford.edu.

INDE 290B. Walk With Me: A Patient & Family Centered Exploration of Health & The Health Care System. 1 Unit.

Continuation of monthly workshop series begun in INDE 290A, with new monthly topics. Students will continue the partnership with their patient and gain further understanding of the challenges of managing optimal health in a complex health care system. Enrollment by Instructor Approval Only. This course can be fulfills the ECE requirement for pre-clinical students.

INDE 290C. Walk With Me: A Patient & Family Centered Exploration of Health & The Health Care System. 1 Unit.

Continuation of monthly workshop series begun in INDE 290A and INDE 290B, with new monthly topics. Students will continue the partnership with their patient and gain further understanding of the challenges of managing optimal health in a complex health care system. Enrollment by Instructor Approval Only.

INDE 292. Exploration of The Health Care System : Clinical Partnership Development. 1-2 Unit.

For second year medical students who wish to continue their existing longitudinal clinical partnerships begun in year 2. 1/2 day clinical immersion, by arrangement with preceptor. 2-unit option includes clinical quality improvement or other approved project. Director approval required.

INDE 295. Bioethics and Anthropology Interdisciplinary Directed Individual Study. 3-5 Units.

Supervised individualized study in bioethics and anthropology for a qualifying paper, research proposal, or project with an individual faculty member. May be repeated for credit.

INDE 297. Reflection and Contextual Medicine. 4 Units.

Required for all MD students enrolled in clerkships at Stanford affiliated sites. Two-year curriculum designed to provide structured time for students to step back from clerkships, in order to promote reflection on and reinforcement for their learning in the clinical environment. The goals of this course are: to offer a regular opportunity for students to discuss challenging issues faced in their clinical training; to ground students in strategies for managing challenging situations they are likely to experience in their personal and professional lives while on clerkships; and to provide opportunities for students to develop and expand their reflective and communication skills. Components of this curriculum include the "Doctoring with CARE" small groups, the "MeD-ReST" Medical Student Resiliency Skills Training sessions, and the "Contextual Medicine: Communication, Connection and Creativity in Practice" lunch and lecture series. All students in clinical clerkships must participate in all aspects of RCM Days. Students enrolled in Selective II Clerkships (Sub-internships) may choose to participate in clinical duties but are expected to communicate their absence to course faculty/staff in advance. Prerequisite: Concurrent enrollment in clinical clerkships. Please note, students will enroll in this course their final quarter of enrollment prior to graduation to receive retroactive credit for all session. Only enroll the last quarter of enrollment.

INDE 298. Women's Health Independent Project. 1 Unit.

Women's Health Scholarly Concentration. Students pursue individual projects under the supervision of a faculty member. Prerequisite: consent of instructor.

Medicine Courses**MED 1A. Leadership in Multicultural Health. 2 Units.**

Designed for undergraduates serving as staff for the Stanford Medical Youth Science Summer Residential Program (SRP). Structured opportunity to learn, observe, participate in, and evaluate leadership development, multicultural health theories and practices, and social advocacy. Utilizes service learning as a pedagogical approach to developing an understanding of the intersections between identity, power and privilege and disparities (health, education, environment), fostering knowledge and skills to become social advocates to address forms of inequities. Students explore approaches for identifying and tackling issues of equity (health and education) as well as learn fundamental skills necessary to implement activities for the Summer Residential Program.

MED 1B. Identity, Power and Privilege in Multicultural Health. 1 Unit.

An independent study service learning course designed to develop students' understanding of the intersection between identity, power, privilege, and disparities (health, education, environment). Students submit a written reflective term paper based on their experience as staff for the Summer Residential Program as well as their understanding of how constructs of identity, power and privilege impact low-income and underrepresented students in their pursuit of higher education. Prerequisite MED 1A.

MED 18SI. Artificial Intelligence in Medicine and Healthcare Ventures. 1-2 Unit.

The face of healthcare is changing - innovative technologies, based on recent advances in artificial intelligence, are radically altering how care is delivered. Startups are offering entirely new ways to diagnose, manage, treat, and operate. Few ever reach the patient - those that do have much more than an idea and an algorithm; they have an intimate understanding of the healthcare landscape and the technical knowhow to successfully integrate AI solutions into the medical system. In this course, we tackle the central question: How can young students find feasible and impactful medical problems, and build, scale, and translate technology solutions into the clinic. Together, we will discover the transformative technologies of tomorrow that we can build today. Please see the syllabus for more information. We encourage students of all backgrounds to enroll- the only prerequisite is a strong passion for technology in healthcare. Syllabus: rebrand.ly/aihealth.

MED 50N. Translational Research: Turning Science into Medicine. 3 Units.

Investigates how scientific research informs how physicians take care of patients and how clinical research informs how scientific experiments are conducted. Topics include how these two processes have improved health and have resulted in innovation and scientific progress; specific human disease areas in allergy and immunology that affect all ages of patients globally, including food allergy; scientific concepts of research that helped in discovery of novel diagnostics and treatment of disease; ethical roles of physicians and scientists in conducting translational research in human disease.

MED 50Q. Respiration. 3 Units.

Preference to sophomores. Topics include: the biological basis for use of oxygen for aerobic metabolism in animals, human lung physiology and pathophysiology, comparative physiology of respiration in fish, birds and mammals, new insights into mammalian lung development, current challenges in human respiratory health including air pollution and lung cancer. Student presentations on specific topics based on literature research developed in consultation with the instructor. Application required.

MED 51B. Compassionate Presence at the Bedside: The Healer's Art. 3 Units.

Students in this class must have already completed MED51Q. This quarter is a skill-based practicum. The skills component of this course is focused on communication and presence at the patient's bedside. Students will learn the theoretical aspects of respectful communication and cultural competence. They will then participate in a variety of immersive simulation activities including role-play, video enacting, class presentations, reflective exercises to understand the nuances of empathetic communication. The focus of the second quarter is to practice the art of communication honestly and compassionately with patients, learning empathy and cultivating the skill of being present at the bedside of a patient. Students will be assigned a panel of seriously ill patients and they do mentored house calls and provide support to patients and families as a volunteer. The idea here is that the knowledge and skills acquired in the first quarter will be utilized in real-life settings to practice compassionate and respectful communication strategies, learn how to be a calm, compassionate and healing presence at the bedside of seriously ill patients. We believe that medical school curricula do not have a strong focus on essential doctoring skills related to communication and a compassionate presence at the bedside. By offering this course to pre-med students, we believe that the doctors of the future will become skilled and compassionate healers.

MED 51Q. Aging, Dying, and End-of-Life Care. 3 Units.

This is a Community-Engaged Virtual Healthcare Course for undergraduate students. This course is designed to prepare students to critically examine values, attitudes, and contexts that govern perspectives toward and engagement of patients within the context of aging and end of life. The course prepares students to responsibly and reflectively interact with aging and seriously ill patients in a mentored setting as follows: (a) Students will learn about the history, evolution, principles and practice of geriatrics and palliative care in class through didactics and lectures by guest lecturers (b) Through mentored fieldwork, students will learn the basic competencies of communicating with older adults from diverse backgrounds in a respectful and compassionate manner. Students will be exposed to the challenges faced by patients from diverse backgrounds and their caregivers. Each student will be assigned a small panel of patients. Due to COVID, all patient and family interaction will be virtual. Students will work with an inter-disciplinary team, conduct virtual calls on patients in their panel, and write progress notes, which will become a part of the patients' electronic medical records. (c) Weekly assignments will help students reflect on their interactions with the patients and lessons they learned. (d) All students will complete a mentored capstone project (either individually or in small groups as they choose) and present this project at the end of the quarter. Our goal is to train future leaders in healthcare and especially in the space of aging and end-of-life care. PLEASE NOTE: This Introductory Seminar is a Cardinal Course. Students who enroll in MED 51Q will be working virtually with patients. As a prerequisite for patient-care, all students (a) must complete HIPAA training, patient safety training, and a background check. All tests required will be provided free of cost and have to be completed with specific agencies affiliated with Stanford. Failure to complete paperwork will result in student being dropped from the class. Dr. Periyakoil will send more specific directions after students are enrolled in MED 51Q.

MED 52Q. What is a Human? Scientific and Mythological Approaches to Meaning. 3 Units.

Reconciling our mythology and current scientific consensus is a worthwhile pursuit to establish a balanced, congruent personal philosophy toward life. In this sophomore seminar, we will first explore scientific perspectives on the origin and evolution of humans utilizing archaeology, genetics, and evolutionary psychology. With this framework secured, we will sample major religious texts such as Genesis, The New Testament, and Eastern texts. Throughout the course, each student will have opportunities to reflect deeply on his or her own personal worldview (past, present, and future) to tailor a personalized philosophy for life. This course will provide you with an overview of a fascinating subject that can impact progress on your life journey and career.

MED 53Q. Storytelling in Medicine. 3 Units.

Stories are at the core of medical practice, but the skills developed are applicable across disciplines, including technology and business. Storytelling in Medicine is a new sophomore seminar designed to teach skills in multiple modalities of storytelling including narrative, oral, social media, academic presentations and visual storytelling for different audiences. This seminar combines small groups, interactive workshops, and guest speakers who are experts in their fields of medicine. This will also include editing and support to complete your own story by the end of the seminar.

MED 54Q. Decolonizing Global Health. 3 Units.

In this seminar, we will look at how global health discourse has changed over the years and discuss possible future directions for global health exchanges. This course will introduce students to the various definitions of global health from colonial times, through international health, tropical medicine, and now global health. We will consider what moral imperative leads to global health work, and how conventional thought about the relationships between providers, patients and systems in the global North and South is shifting. Global health has transitioned through various stages. In the 1800s, missionary doctors provided medical care while also spreading religion and colonial interests. During the twentieth century, great strides were made in sanitation and infectious disease treatment as part of systems and government based international health and tropical medicine. Paradoxically, in the last two decades, as the world becomes more intertwined, global health has generally involved shorter term encounters, usually with specialists at the vanguard. With the epidemiological transition and increasing communicable disease prevalence in developing countries, systems strengthening, and capacity building are the main priorities. It is argued that the current global health infrastructure does not focus on building long term partnerships or assign equitable worth to participants from the global North and South. We will investigate how effective our current efforts are and think critically about the meaning of decolonizing global health as regards population outcomes and the flow of resources. We will review each of these stages in global health development and use examples of long-term partnerships that have yielded considerable success, such as Partners in Health (PIH) and Academic Model Providing Access to Healthcare (AMPATH). We will also briefly discuss overlapping concepts in global health equity and health and social justice in the US. Guest speakers from primary care fields and with global health backgrounds will stimulate further dialogue and speak from their experiences on the front lines.

MED 71N. Hormones in a Performance-Enhanced Society. 3 Units.

(Formerly 117Q) Preference to first-year students. Explores how the availability of hormone therapy has affected various aspects of daily lives. Topics include the controversies concerning menopause and its treatment; use of hormones in athletics; cosmetic use of hormones to enhance growth, strength, and libido; use of hormones as anti-aging drugs; and how the hormone system has influenced our notions of gender. Includes the biochemistry and physiology of the human endocrine system; how hormones influence behavior, and how to read a scientific paper.

MED 73N. Scientific Method and Bias. 3 Units.

Offers an introduction to the scientific method and common biases in science. Examines theoretical considerations and practical examples where biases have led to erroneous conclusions, as well as scientific practices that can help identify, correct or prevent such biases. Additionally focuses on appropriate methods to interweave inductive and deductive approaches. Topics covered include: Popper's falsification and Kuhn's paradigm shift, revolution vs. evolution; determinism and uncertainty; probability, hypothesis testing, and Bayesian approaches; agnostic testing and big data; team science; peer review; replication; correlation and causation; bias in design, analysis, reporting and sponsorship of research; bias in the public perception of science, mass media and research; and bias in human history and everyday life. Provides students an understanding of how scientific knowledge has been and will be generated; the causes of bias in experimental design and in analytical approaches; and the interactions between deductive and inductive approaches in the generation of knowledge.

MED 110. Patient Health Advocate. 2 Units.

The "Patient Health Advocate" course is designed to introduce students to population health concepts in primary care, providing a clinical experience and an opportunity to contribute towards patient care. With guidance from faculty members, students will learn important preventive health care topics, gain skills in patient health coaching, and design and implement a quality improvement project to address a population health measure of their choice. Students will also be exposed to clinical care through clinic shadowing and pre-visit planning with resident physician mentors. Prerequisites: MED 143A/243A or equivalent.

MED 114. Frontier Technology: Understanding and Preparing for Technology in the Next Economy. 2 Units.

The next wave of technological innovation and globalization will affect our countries, our societies, and ourselves. This interdisciplinary course provides an introduction to frontier technology, the intersection where radical forward thinking and real-world implementation meet. Topics covered include artificial intelligence, additive manufacturing and advanced robotics, smart cities and urban mobility, telecommunications with 5G, and other key emerging technologies in society. These technologies have vast potential to address the largest global challenges of the 21st century, ushering in a new era of progress and change. Limited enrollment, contact instructors for application. Same as: CEE 114, CEE 214, MED 214, PSYC 114

MED 121. Translational Research and Applied Medicine. 2-3 Units.

(Same as MED 121; undergraduate students enroll in MED 121) Open to graduate students and medical students, this course enables students to learn basic principles in the design, performance and analysis of translational medical research studies. The course includes both didactic seminars from experts in translational medicine as well as the opportunity to design and present a translational research project. Students enrolling for 3 units are paired with a TRAM translational research project and work as a team with TRAM trainees and faculty on a weekly basis, as arranged by the instructor, and present a final project update at the end of the quarter. Same as: MED 221

MED 124. Global Child Health. 3-5 Units.

(HUMBIO students must enroll in HUMBIO 124C. Med/Graduate students must enroll in MED 124 or PEDS 124.) This course introduces students to key challenges to the health and well being of children worldwide. We explicitly focus on child and public health problems in low- and middle-income countries (LMIC) to reflect the global burden of disease among children. We will review the scope and magnitude of the leading causes of morbidity and mortality, as well as examine regional variations. We will then identify both medical and non-medical causes, effects of, as well as interventions to address, some of the biggest child health problems. The course will also present an overview of the role of culture, gender, and non-state actors (NGOs, foundations, etc.) on health and health policy. Optional: The course will be taught in conjunction with an optional two-unit community engaged learning component. Please view the course syllabus for more information. Upper division course with preference given to upperclassmen. Prerequisites: Human Biology Core or equivalent or Biology Foundations.

Same as: HUMBIO 124C, PEDS 124

MED 129. Health Care Systems Around the World. 4 Units.

This course will explore the role of health care systems in societies around the world, identifying the common challenges facing health care systems and how different institutional structures in different countries perform in response to these challenges. We will structure the course around general conceptual frameworks related to key health system institutions (including financing, insurance, provider payment, patient cost-sharing, and the regulation of medical technology). From this foundation, we will draw on the experience of individual countries (high and low income, with heavy chronic disease and infectious disease burdens) to illustrate the function of these institutions under real-world circumstances observed around the globe. Prerequisite: Human Biology Core or Biology Foundations or equivalent or consent of instructor.

Same as: HUMBIO 129W

MED 130. Yesplus: Meditation practices for wellbeing. 1 Unit.

"Meditation Practices for Wellbeing" is a 1-unit course that provides students with tools and strategies to develop a sustainable approach to their happiness and wellbeing. Students will learn breathwork and meditation based techniques to decrease stress and increase peace and focus in day to day life. Students will also study happiness-based research and participate in community building discussions, yoga, and mindfulness processes to learn how wellness can be sustained as a personal practice. Class meets 5 evenings throughout the quarter, along with a mandatory mini retreat during the third week (Thursday 7 - 10 pm, Friday 7 - 10 pm, Saturday 12 - 3 pm). Open to all students, including freshmen and those new to meditation. Enrollment limited to 25.

Admission by application, details at first class. See yesplus.stanford.edu for more information.

MED 131. Exploring Israel's Ecosystem in Human and Planetary Health. 1-2 Unit.

Israel's innovation ecosystem is one of the most admired in the world. Israel is a leader in health, environmental, and ecological innovation, and despite its small size, Israel is home to a disproportionate number of successful start-ups. Israel combines history, culture, politics, and religion in unparalleled ways that influence not only the human and planetary health innovation ecosystem, but all aspects of life. Students in this course will (1) develop an understanding of how socio-cultural conditions, including political, regulatory, military, and academic institutions; geographical, historical, environmental, and technological conditions; and human cultures and activities have shaped the innovation ecosystem in human and planetary health in Israel into one of the world's most productive centers; (2) gain an appreciation of the advantages and disadvantages faced by entrepreneurs in Israel, how they have evolved, and how they compare to the experience of entrepreneurs in the US and elsewhere; and (3) develop a strategy for delving more deeply into these themes in Israel. Note, this course will meet a total of four times during spring term. REGISTRATION is limited to undergraduate students participating in the Bing Overseas Study Program in Israel, Summer 2020. Prerequisites: This course is limited in enrollment to undergraduate students who will be participating in the Summer 2020 Bing Overseas Study Program (BOSP) Seminar in Israel, Exploring Israel's Innovation Ecosystem in Human and Planetary Health: Can A startup Culture and Technology Change the World?.

MED 142. Modern Ethical Challenges in Neuroscience and Organ Transplantation. 3 Units.

Today we face unprecedented innovations in neuroscience and medicine. While these advances offer new hope, they also challenge medical, legal, and ethical paradigms. We will explore the ethical constructs surrounding topics including brain death, brain-computer interfaces and other adaptive technologies, and organ transplantation. The course material will include clinical and legal cases, scientific literature, film and popular culture, and experiential learning at Stanford Hospital. We will also focus on cultural comparisons between the US and Japan, where brain death is not widely accepted and deceased donor organ donation is rare. Course evaluation will be based on participation, written work, and team projects.

Same as: HUMBIO 171N

MED 147. Methods in Community Assessment, Evaluation, and Research. 3 Units.

Development of pragmatic skills for design, implementation, and analysis of structured interviews, focus groups, survey questionnaires, and field observations. Topics include: principles of community-based participatory research, including importance of dissemination; strengths and limitations of different study designs; validity and reliability; construction of interview and focus group questions; techniques for moderating focus groups; content analysis of qualitative data; survey questionnaire design; and interpretation of commonly-used statistical analyses.

Same as: CHPR 247, MED 247

MED 157. Foundations for Community Health Engagement. 3 Units.

Open to undergraduate, graduate, and MD students. Examination and exploration of community health principles and their application at the local level. Designed to prepare students to make substantive contributions in a variety of community health settings (e.g. clinics, government agencies, non-profit organization, advocacy groups). Topics include community health assessment; health disparities; health promotion and disease prevention; strategies for working with diverse, low-income, and underserved populations; and principles of ethical and effective community engagement.

MED 159. Oaxacan Health on Both Sides of the Border. 2 Units.

Required for students participating in the Community Health in Oaxaca summer program. Introduction to the health literacy and health-seeking behaviors of Oaxacan and other Mexican migrants; the health challenges these groups face. Through discussion and reflection, students prepare for clinical work and community engagement in Oaxaca, while also gaining knowledge and insight to make connections between their experiences in Mexico and their health-related work with Mexican immigrants in the Bay Area. Service Learning Course (certified by Haas Center). Prerequisite: application and acceptance into the Community Health in Oaxaca Summer Program (<http://och.stanford.edu/oaxaca.html>).

MED 160. Physician Shadowing: Stanford Immersion in Medicine Series. 1 Unit.

Undergraduates are paired with a physician mentor at Stanford Hospital and Clinics, Lucile Packard Children's Hospital, or the Veteran's Administration Hospital. May be repeated for credit. Prerequisite: Application and acceptance to the SIMS program. Same as: SIMS

MED 164. Covid-19 Case Investigation and Contact Tracing. 3-6 Units.

In this service-learning course students will learn how to identify people who have COVID-19 and those who have been exposed to people with COVID-19. Students will learn basics about the biology and health effects of SARS-CoV-2 and the epidemiology of COVID-19. Students will be taught important skills in healthcare communication including motivational interviewing, health education, and health coaching. Students will work as volunteers together with Santa Clara County staff to interrupt the chains of transmission of COVID-19 as they apply skills they have learned to help people with the illness and those who have been exposed understand the importance of isolation, quarantine, and other critical aspects of public health needed to control and manage this disease. Students will need to be willing to commit 20 hours per week to this course for 10 weeks over 2 quarters. Requires application and instructor approval. Please contact Course Director, Lars Osterberg MD, MPH for an application form and approval for enrollment. Same as: CHPR 235, MED 264

MED 181. Preparation for Early Clinical Experience at the Cardinal Free Clinics. 1-2 Unit.

Training course for new undergraduate volunteers at the Cardinal Free Clinics (CFCs). Topics include introduction to methods for providing culturally appropriate, high quality transitional medical care for underserved patient populations, clinic structure and roles, free clinics in the larger context of American healthcare, foundations in community health, cultural humility and implicit bias in healthcare, motivational interviewing and patient advocacy skills, and role-specific preparation. Application only; must be an accepted CFC volunteer. Visit <https://cfc.stanford.edu> for more information. 1-2 units.

MED 182. Early Clinical Experience at the Cardinal Free Clinics. 1-2 Unit.

The Cardinal Free Clinics, consisting of Arbor and Pacific Free Clinic, provide culturally appropriate, high quality transitional medical care for underserved patient populations in the Bay Area. Students volunteer in various clinic roles to offer services including health education, interpretation, referrals, and labs. In clinic students are guided in the practice of medical interviews, history-taking and physical examinations as appropriate, and work with attending physicians to arrive at a diagnosis and management plan. Visit <http://cfc.stanford.edu> for more information. For questions related to the course or volunteering, please email arborclinic@stanford.edu and/or pacific@med.stanford.edu. Application only; must be an accepted CFC volunteer. Same as: MED 282

MED 184. Team Leadership in the Cardinal Free Clinics I. 1 Unit.

Introduction to skills for effective leadership, including topics such as conflict resolution, team dynamic. Applied learning through shifts at the Cardinal Free Clinics and related project work. Enrollment limited to Cardinal Free Clinic Managers. Same as: MED 284

MED 199. Undergraduate Research. 1-18 Unit.

Students undertake investigations sponsored by individual faculty members. Prerequisite: consent of instructor.

MED 200. Primary Care Presentations. 1 Unit.

This course is a lecture series offered during the winter quarter. The aim of this seminar is to allow medical students to experience the mindset of primary care physicians in real time. Classes feature presentations of patient cases submitted by Stanford faculty. Faculty presenters are provided with the diagnostic information for the cases in a sequential manner during and not in advance of each class, allowing students to learn from the thought process of physicians in real time as they put together the differential diagnosis, interpret diagnostic information, deliberate treatment and management options, and discuss other thoughts about the cases.

MED 201. Internal Medicine: Body as Text. 1 Unit.

Body as Text refers to the idea that every patient's body tells a story. The narrative includes the past and present of a person's social and medical condition; it is a demonstration of the phenotype. The art of reading the body as text was at its peak in the first half of the 20th century, but as technology has become ascendant, bedside skills and the ability to read the text have faded. Beyond scientific knowledge and medical facts, it is this often forgotten craft which is at the heart of the excitement of being an internist. This course introduces students to the art of the clinical exam, to developing a clinical eye, and learning to see the body in a completely different way. Enrollment will be based on a lottery system, for which details will be sent to first year students at the end of mini quarter.

MED 202. Alternative Spring Break: Rosebud Resilience: Community, Health and Learning in Lakota Nation. 1 Unit.

Open to MD, graduate, and undergraduate students. Classroom preparation followed by a one week spring break service learning experience on a reservation in South Dakota. Introduces students to the challenges and promise of Native American and rural health care, and the role of communities as leaders and problem solvers. Includes lectures, discussion and readings pertaining to Native American culture, current research in Native American health, and the methods and practice of community based participatory research.

MED 206. Meta-research: Appraising Research Findings, Bias, and Meta-analysis. 3 Units.

Open to graduate, medical, and undergraduate students. Appraisal of the quality and credibility of research findings; evaluation of sources of bias. Meta-analysis as a quantitative (statistical) method for combining results of independent studies. Examples from medicine, epidemiology, genomics, ecology, social/behavioral sciences, education. Collaborative analyses. Project involving generation of a meta-research project or reworking and evaluation of an existing published meta-analysis. Prerequisite: knowledge of basic statistics. Same as: CHPR 206, EPI 206, STATS 211

MED 207. History of Medicine. 1 Unit.

Begins with studying Shamanistic medicine, practiced by humans throughout the globe, for millennia. Covers magico-religious medicine developed in ancient Egypt, Mesopotamia and Greece; the 4th Century BC with Hippocrates beginning to separate medicine from religion and magic; the slow progress in ancient Rome, the medieval period, and during the Renaissance; and the acceleration in the pace of discoveries in the last few centuries, as medicine became more scientific, complex, and specialized as Pasteur developed the germ theory of disease, Darwin and Mendel publications begin the development of Evolution and of Genetics, Watson and Crick solved the mystery of DNA structure, organ transplants began, and imaging procedures such as CT and MRI came into being. Lectures are profusely illustrated, and, for the sake of comparison, two equally ancient systems of medicine, the traditional Chinese and the Vedic, are briefly reviewed.

MED 210. Principles and Practice of Healthcare Quality Improvement. 1 Unit.

This course will introduce students to foundational concepts in healthcare quality improvement, and provide tools for translating these principles into practice. Topics include: current state, A3, SMART goals, root-cause analysis, metrics and measures, PDCA cycles, process controls, systems, and sustainability. Students have the option of completing the course curriculum in conjunction with a quality improvement/patient safety project offered by the SMS Quality Improvement Interest Group. This course will meet for four in-class sessions throughout the quarter, with students reviewing the online materials before each session. May be repeated for credit up to three quarters with continued work on a quality improvement project, and all units count towards the Quality Improvement Scholarly Concentration. Open to all.

MED 212. Methods for Health Care Delivery Innovation, Implementation and Evaluation. 2 Units.

Preference given to postgraduate fellows and graduate students. Focus is on implementation science and evaluation of health care delivery innovations. Topics include implementation science theory, frameworks, and measurement principles; qualitative and quantitative approaches to designing and evaluating new health care models; hybrid design trials that simultaneously evaluate implementation and effectiveness; distinction between quality improvement and research, and implications for regulatory requirements and publication; and grant-writing strategies for implementation science and evaluation. Students will develop a mock (or actual) grant proposal to conduct a needs assessment or evaluate a Stanford/VA/community intervention, incorporating concepts, frameworks, and methods discussed in class. Priority for enrollment for CHPR 212 will be given to CHPR master's students. Same as: CHPR 212, HRP 218

MED 214. Frontier Technology: Understanding and Preparing for Technology in the Next Economy. 2 Units.

The next wave of technological innovation and globalization will affect our countries, our societies, and ourselves. This interdisciplinary course provides an introduction to frontier technology, the intersection where radical forward thinking and real-world implementation meet. Topics covered include artificial intelligence, additive manufacturing and advanced robotics, smart cities and urban mobility, telecommunications with 5G, and other key emerging technologies in society. These technologies have vast potential to address the largest global challenges of the 21st century, ushering in a new era of progress and change. Limited enrollment, contact instructors for application. Same as: CEE 114, CEE 214, MED 114, PSYC 114

MED 215A. Health Policy Graduate Student Tutorial I. 1-2 Unit.

Seminar series is the core tutorial for first-year Health Policy PhD students and all MS Health Policy students. Major themes in fields of study including health insurance, healthcare financing and delivery, health systems and reform and disparities in the US and globally, health and economic development, health law and policy, resource allocation, efficiency and equity, healthcare quality, measurement and the efficacy and effectiveness of interventions. Blocks of session led by Stanford expert faculty in particular fields of study. 2 unit registration requires written responses to assigned reading questions. Same as: HRP 201A

MED 215B. Health Policy Graduate Student Tutorial II. 1-2 Unit.

Second in a three-quarter seminar series, the core tutorial is for first-year Health Policy PhD students and all MS Health Policy students. Major themes in fields of study including health insurance, healthcare financing and delivery, health systems and reform and disparities in the US and globally, health and economic development, health law and policy, resource allocation, efficiency and equity, healthcare quality, measurement and the efficacy and effectiveness of interventions. Blocks of session led by Stanford expert faculty in particular fields of study. Same as: HRP 201B

MED 215C. Health Policy Graduate Student Tutorial III. 1-2 Unit.

Third in a three-quarter seminar series, the core tutorial is for first-year Health Policy PhD students and all MS Health Policy students. Major themes in fields of study including health insurance, healthcare financing and delivery, health systems and reform and disparities in the US and globally, health and economic development, health law and policy, resource allocation, efficiency and equity, healthcare quality, measurement and the efficacy and effectiveness of interventions. Blocks of session led by Stanford expert faculty in particular fields of study. Same as: HRP 201C

MED 216. Clinical Integration. 1 Unit.

The practice of clinical medicine requires the integration of several fields of knowledge including Embryology, Anatomy, Physiology, Pathology, Pharmacology, and Microbiology. In this exciting course, we will systematically review subjects such as Cardiology, Gastroenterology, Nephrology, Pulmonology, Endocrinology, Neurology, and Hematology/Oncology. I will provide power points and an outline as a reference point for the content. The majority of the classroom time will be spend with guided review of an excellent question bank. This will serve as an excellent review of the subjects after they have been formally taught during the M2 year. I have almost a decade of experience guiding students through the USMLE Step 1 exam with significant success. Utilizing my experience, I hope to help *connect the dots* in the above fields and prepare the student to think about *pathophysiology* as a guide to clinical reasoning.

MED 217. Inpatient Medicine Shadowing Rotation. 1 Unit.

The objective of this rotation is to provide second year medical students the opportunity to experience the application of their medical education to clinical scenarios in the hospital. Students will have a one-day weekend shadowing opportunity (either on Saturday or Sunday morning) with a dedicated internal medicine team and witness the evaluation and management of patients to better understand the roles of the different team members, the flow of rounds, and the functions of history taking and physical examinations to perform a patient assessment. Following the experience, the students will debrief with the course directions. Students will also attend virtual weekly lectures/discussions on Friday afternoon from 1:30-2:20pm to learn about the ins and outs of inpatient rotation logistics.

MED 218. Principles of Business Strategy. 3 Units.

Organizations need frameworks to plan for growth, respond to challenges and/or changes in the market, or tackle gaps in performance. This course explores how to assess business opportunities in dynamic, competitive environments to develop the insights that can lead to success. The frameworks developed in this course apply to for-profit and not-for-profit firms in the health care industry including provider organizations, pharmaceutical and medical device firms, payers, and information technology firms. In the course, students will explore the complexity of analyzing markets and assessing business strategy in an era of globalization and increasing uncertainty. Must have active enrollment within the Master of Clinical Informatics Management program.

MED 219. What Keeps Us Up at Night. 1 Unit.

This lunchtime seminar series will bring Patients and Families, Clinicians and Hospital Administrative Leadership together in the classroom to discuss real world healthcare issues that directly affect all of us. In-class discussion will focus around current events and the impact on patient care and the learning health system. Participants will engage in conversation and gain insight into where innovation and is occurring within Stanford Health Care, and what opportunities exist to get involved and effect change.

MED 220. Bioethical Challenges of New Technology. 1 Unit.

How might we apply ideas from ethical theory to contemporary issues and debates in biotechnology? This course will provide critical encounters with some of the central topics in the field of bioethics, with an emphasis on new technologies. Controversies over genetic engineering, stem cell research, reproductive technologies, and genetic testing will provide an opportunity for you to critically assess arguments and evidence. We will begin with an overview of the field and the theoretical approaches to bioethics that have been derived from philosophy. You will then have the opportunity to engage in debate and learn how to identify underlying values and how to apply ideas from ethical theory to contemporary problems. Prerequisites: Must have active enrollment within the Master of Clinical Informatics Management program.

MED 221. Translational Research and Applied Medicine. 2-3 Units.

(Same as MED 121; undergraduate students enroll in MED 121) Open to graduate students and medical students, this course enables students to learn basic principles in the design, performance and analysis of translational medical research studies. The course includes both didactic seminars from experts in translational medicine as well as the opportunity to design and present a translational research project. Students enrolling for 3 units are paired with a TRAM translational research project and work as a team with TRAM trainees and faculty on a weekly basis, as arranged by the instructor, and present a final project update at the end of the quarter.

Same as: MED 121

MED 223. Cardiovascular and Pulmonary Sciences Seminar. 2 Units.

Weekly seminar series featuring cardiovascular research by faculty. This course is intended for medical students, graduate students, and advanced undergraduate students. On Tuesdays, students attend Frontiers in Cardiovascular Science. On Thursdays, a faculty member will present to students their research, followed by Q&A session with the students.

MED 224. Social Entrepreneurship and Innovation Lab (SE Lab) - Human & Planetary Health. 3-4 Units.

Social Entrepreneurship and Innovation Lab (SE Lab) - Global & Planetary Health is a Collaboratory workshop for students/fellows to design and develop innovative social ventures addressing key challenges in health and the environment, especially in support of the UN Sustainable Development Goals (SDGs 2030). Your mandate in identifying problems and designing solutions is broad and flexible! SE Lab is open to students and fellows across Stanford and combines design thinking exercises, short lectures & case studies, workshops, small group teamwork, presentations, guest speakers, and faculty, practitioner and peer feedback to support you and your team in generating and developing ideas and projects that will change the world! Join SE Lab with an idea or simply the desire to join a team. Enrollment limited to 30.

Same as: HRP 224, PUBLPOL 224

MED 225. Drug Development: From a Concept to the Clinic. 1 Unit.

This course is designed for medical students, trainees, basic scientists, clinicians and clinician-scientists at Stanford to provide an educational and practical perspective on the essential issues in drug development. Using a blend of seminars and dynamic workshops, the curriculum is focused on educating the audience on all stages of drug development and related research and business processes - from discovery and translational science and how to launch new projects to analyzing data, communication and interpretation of results of clinical trials, regulatory issues and commercial considerations in product development. The emphasis will be on cardiovascular applications. Proposed seminar topics are attached and include How Drugs Are Discovered and Developed, Case Studies of the various challenges in Drug Development, Cardiac Safety, Moving a Compound through the Drug Development Process, and the FDA Advisory Committee Process. <http://med.stanford.edu/cvi/education/cvi-courses/med225.html>.

MED 226. Practical Approaches to Global Health Research. 1-3 Unit.

(Formerly IPS 290 and HRP 237) How do you come up with an idea for a useful research project in a low resource setting? How do you develop a research question, prepare a concept note, and get your project funded? How do you manage personnel in the field, complex cultural situations, and unexpected problems? How do you create a sampling strategy, select a study design, and ensure ethical conduct with human subjects? This course takes students through the process of health research in under-resourced countries from the development of the initial research question and literature review to securing support and detailed planning for field work. Students progressively develop and receive weekly feedback on a concept note to support a funding proposal addressing a research question of their choosing. Aimed at graduate students interested in global health research, though students of all disciplines interested in practical methods for research are welcome. Undergraduates who have completed 85 units or more may enroll with instructor consent. Sign up for 1 unit credit to participate in class sessions or 3 units to both participate in classes and develop a concept note.

Same as: EPI 237, INTLPOL 290

MED 228. Physicians and Social Responsibility. 1 Unit.

Social and political context of the roles of physicians and health professionals in social change; policy, advocacy, and shaping public attitudes. How physicians have influenced governmental policy on nuclear arms proliferation; environmental health concerns; physicians in government; activism through research; the effects of poverty on health; homelessness; and gun violence. Guest speakers from national and international NGOs.

MED 232. Global Health: Scaling Health Technology Innovations in Low Resource Settings. 2-3 Units.

Recent advances in health technologies - incorporating innovations like robotics, cloud computing, artificial intelligence, and smart sensors - have raised expectations of a dramatic impact on health outcomes across the world. However, bringing innovative technologies to low resource settings has proven challenging, limiting their impact. Ironically, the current COVID-19 pandemic has become Exhibit 1 in the challenges the global health community faces in scaling innovative interventions. This course explores critical questions regarding the implementation and impact of technological innovations in low-resource settings. The course will feature thought leaders from the health technology community, who will explore examples of technologies that have been successful in low resource communities, as well as those that have failed. A subset of these examples will be drawn from the current pandemic. Students will think critically to consider conditions under which technologies reach scale and have positive impact in the global health field. Students will also have an opportunity to work on real-world projects, each of which will focus on the potential opportunity for a health technology in a low-resource setting and consider approaches to ensure its impact at scale. This course will be taught by Dr. Anurag Mairal, Adjunct Professor of Medicine and the Director, Global Outreach Programs at Stanford Byers Center for Biodesign, and Dr. Michele Barry, Senior Associate Dean for Global Health. This course is open to undergraduate students, graduate students, and medical students. Undergraduates can take this course for a letter grade and 3 units. Graduate students and MD students can enroll for 2 units. Students enrolling in the course for a third unit will also work on group projects described above. Students enrolled in the class for three units will also have additional assignments, including weekly discussion posts. Students must submit an application and be selected to receive an enrollment code. The application form can be found at the following link: : <https://tinyurl.com/ghmed232>. Contact Olivia Paige with any questions: olivia.paige@stanford.edu.

MED 233. Global Health: Beyond Diseases and International Organizations. 4 Units.

Provides multidisciplinary trainees insight into over-arching themes of global health. Topics include systemic issues affecting healthcare progress globally, ethical and thoughtful approaches to solving these issues, as well as economics, water sanitation, public health, organizations in global health, human rights, involvement in NGOs, ethics of overseas work, and other non-medical aspects of this subject. This course will cover some of the essentials of patient care while working in the field as well including child health care, malaria, TB, and HIV. Course only open to graduate and MD/MSPA students. Undergraduates are not eligible to enroll.

MED 235. Designing Research-Based Interventions to Solve Global Health Problems. 3-4 Units.

The excitement around social innovation and entrepreneurship has spawned numerous startups focused on tackling world problems, particularly in the fields of education and health. The best social ventures are launched with careful consideration paid to research, design, and efficacy. This course offers students insights into understanding how to effectively develop, evaluate, and scale social ventures. Using TeachAids (an award-winning nonprofit educational technology social venture used in 82 countries) as a primary case study, students will be given an in-depth look into how the entity was founded and scaled globally. Guest speakers will include world-class experts and entrepreneurs in Philanthropy, Medicine, Communications, Education, and Technology. Open to both undergraduate and graduate students. Same as: AFRICAST 135, AFRICAST 235, EDUC 135, EDUC 335, EPI 235, HUMBIO 26

MED 237. Health Law: Improving Public Health. 3 Units.

(Same as Law 3009) Examines how the law can be used to improve the public's health. Major themes explored include: what authority does the government have to regulate in the interest of public health? How are individual rights balanced against this authority? What are the benefits and pitfalls of using laws and litigation to achieve public health goals? Investigates these issues in several contexts, including the control and prevention of infectious disease, laws aimed at preventing obesity and associated noncommunicable diseases, tobacco regulation, ensuring access to medical care, reproductive health, lawsuits against tobacco, food and gun companies, and public health emergencies.

MED 238. Leading and Managing Health Care Organizations: Innovation and Collaboration in High Stakes Settings. 3 Units.

Same as OB 348. Leading and managing in complex, high stakes settings, like health care, where lives and livelihoods are on the line, presents distinctive challenges and constraints. This course challenges you to apply seminal and contemporary theories in organizational behavior to evaluate managerial decisions and develop evidence-based strategies for leading and managing health care teams and organizations. Topics include leading systems that promote learning; implementing change; and interdisciplinary problem-solving, decision-making, and collaboration. Group work and exercises will simulate high pressure and risk-taking under uncertainty. While the focus of this course will be on health care situations, lessons are relevant to other settings including consulting, banking, and high tech, and prior experience in the health sector is not required.

MED 239. Workshop For Ending Diagnostic Odysseys. 1-3 Unit.

Have you ever wondered how Dr. House solves difficult cases? Intrigued by Sherlock Holmes? Want to be a disease detective? In this project-based course, teams of students will work together to study cases of undiagnosed rare and novel diseases. Like Dr. House, students will attempt to solve these medical mysteries. Course directors and team facilitators from Stanford's Center for Undiagnosed Diseases will introduce methods and approaches successful in solving past cases. Teams are expected to report on their findings at the completion of the quarter. Interested medical students may pursue follow-up research in subsequent quarters through Med Scholars. Co-Enrollment in the lecture-based course MED 244 is encouraged but not required.

MED 240. Sex and Gender in Human Physiology and Disease. 2-3 Units.

(HUMBIO students must enroll in HUMBIO 140. PhD minor in FGSS must enroll in FEMGEN 241. Med students must enroll in MED 240.) Chromosomal, hormonal and environmental influences that lead to male and female and intersex reproductive anatomy and physiology and neuroendocrine regulation. Masculinizing and feminizing effects of endogenous and exogenous sex hormones and sociocultural factors, in particular gender identity, (social) gender norms and relationships, on the musculoskeletal, neurological, cardiovascular, immunological and other systems and tissues, e.g. adipose, skin, etc. over the lifecourse, from conception to puberty, through reproductive phases (including changes during the menstrual cycle and pregnancy up to and beyond menopause in women, and with aging in both sexes). Transgender health issues. Guest lecturers. Enrollment limited to students with sophomore academic standing or above. Prerequisites: Human Biology Core or Biology Foundations or equivalent, or consent of instructor. Same as: FEMGEN 241, HUMBIO 140

MED 241. Clinical Skills for Patient Care in Free Clinics. 1 Unit.

Enrollment in this course is by application only for advanced volunteers at the Cardinal Free Clinics. Focus is on preparing students to gain early clinical experience by teaching basic skills such as taking patient histories, working with interpreters, providing motivational interviewing, and presenting cases to medical students or physicians. Students learn through classroom lectures and practice sessions. Upon successful completion of a competency assessment, students are able to serve in a clinic role in the Cardinal Free Clinics. Prerequisite: Advanced standing as a volunteer at the Cardinal Free Clinics.

MED 242. Physicians and Human Rights. 1 Unit.

Weekly lectures on how human rights violations affect health. Topics include: regional conflict and health, the health status of refugees and internally displaced persons; child labor; trafficking in women and children; HIV/AIDS; torture; poverty, the environment and health; access to clean water; domestic violence and sexual assault; and international availability of drugs. Guest speakers from national and international NGOs including Doctors Without Borders; McMaster University Institute for Peace Studies; UC Berkeley Human Rights Center; Kiva.

MED 243. Citizen Science Theory to Practice: Advancing Community-Driven Solutions for Health. 2-3 Units.

Harnessing and activating the insights of community members and patients is essential to achieving health equity ζ from the bottom up. ζ Students will 1) learn and apply a novel data-driven, technology-enabled approach to improving community health through systematic documentation of lived experience and application of collective data to inform local change; 2) examine global project case studies targeting physical activity, food access, transportation, affordable housing, gender-based violence, and age-friendly environments; and 3) complete assessments of their local built environments using a Stanford-developed app and web platform, then use their data to develop and explore feasible strategies to improve community health. (Cardinal Course certified by the Haas Center). Same as: CHPR 236

MED 244. Diagnostic Odysseys In Medicine. 1 Unit.

Medicine is rapidly evolving, with increasing emphasis on genetic testing, immunophenotyping and integration of technology to guide diagnosis. In this course, experts from Stanford and Silicon Valley will highlight exciting developments. Topics include the latest developments in genetics and genomics (including genome testing in clinical practice, direct to consumer testing, and frontiers in neurogenetics), immunophenotyping, utilization of databases to research diseases and the emerging field of machine learning and clinical decision support in optimizing diagnostic strategies. Students who wish to engage in a mentored multi-disciplinary team-based research project related to advanced diagnostic techniques can additionally enroll in MED 239. Same as: HUMBIO 44

MED 245. Leadership in Medicine: Developing your Moral Identity. 1-2 Unit.

Students will view videos of well-known leaders being interviewed or watch a live interview of the chief communications officer of Stanford School of Medicine each week. All this will be conducted through zoom conferencing for students to connect from home. With these interviews we will be highlighting the ethical challenges that these leaders faced and how they rose to these challenges, or fell short. These famous leaders will come from a variety of fields including academia, government, law, public service, public health, the military or journalism. We will then hold small group discussions after the interviews to debate the decisions made by these leaders. Through discourse and deep reflection we aim to prepare students for their own leadership challenges of the future. Students can apply for an additional unit with self-directed reading and a written paper describing important principles of leadership (1-2 units).

MED 246. The Medical Interview for Spanish Speakers. 1 Unit.

Student led forum for practicing and learning medical Spanish related specifically to the medical interview. Prepares clinical students to interact more effectively with Spanish speaking patients in clinics. Classes are topical; each class includes a demonstration, medical vocabulary practice, and conversational practice on the topic of the day.

MED 247. Methods in Community Assessment, Evaluation, and Research. 3 Units.

Development of pragmatic skills for design, implementation, and analysis of structured interviews, focus groups, survey questionnaires, and field observations. Topics include: principles of community-based participatory research, including importance of dissemination; strengths and limitations of different study designs; validity and reliability; construction of interview and focus group questions; techniques for moderating focus groups; content analysis of qualitative data; survey questionnaire design; and interpretation of commonly-used statistical analyses.

Same as: CHPR 247, MED 147

MED 248. Student Rounds. 1 Unit.

Teams of preclinical students meet weekly with a clinical student to hear the history and physical of a recent case the clinical student encountered on the wards. Following the presentation, the preclinical students work together under the guidance of the clinical student to develop a problem list and plan, which are then compared with the problem list, plan, and orders made by the actual admitting team. In the course of presenting the cases, the clinical student describes personal experiences and practical components of ward work and daily clinical routine.

MED 249. Topics in Health Economics I. 3-5 Units.

Course will cover various topics in health economics, from theoretical and empirical perspectives. Topics will include public financing and public policy in health care and health insurance; demand and supply of health insurance and healthcare; physicians' incentives; patient decision-making; competition policy in healthcare markets, intellectual property in the context of pharmaceutical drugs and medical technology; other aspects of interaction between public and private sectors in healthcare and health insurance markets. Key emphasis on recent work and empirical methods and modelling. Prerequisites: Micro and Econometrics first year sequences (or equivalent). Curricular prerequisites (if applicable): First year graduate Microeconomics and Econometrics sequences (or equivalent).

Same as: ECON 249, HRP 249

MED 250. Understanding Evidence-Based Medicine: Hands-on experience. 3-4 Units.

How can one practice evidence-based medicine and make evidence-based decisions for clinical practice and policy making? Using pivotal papers published in the recent scientific literature addressing important clinical questions on diverse medical topics, we will probe a wide range of types of studies, types of targeted therapeutic or preventive interventions, and types of studied outcomes (effectiveness and/or safety), including RCTs, observational studies, epidemiologic surveillance studies, systematic reviews-umbrella reviews-meta-analyses-meta-analyses of individual patient data, studies on the evaluation of diagnostic tests and prognostic models, economic analyses studies, and guidelines. Students enrolled for 4 units will complete an additional project or other engagement approved by the instructor. MD studies enroll for +/- . GR students enroll for Letter grade.

Same as: CHPR 205, EPI 250

MED 251. Measurement for Health Policy. 3 Units.

Conceptual, technical and empirical basis for measurement essential to health policy. Principles and good practice for designing measures fit for purpose. Practical application of measurement concepts and methods. Main emphasis on measuring levels of health in individuals and populations, combining mortality/longevity and quality of life/functioning. Additional topics include measurement of inequalities and health care quality. Examples and applications include high income and low/middle-income settings.

Same as: HRP 232

MED 252. Outcomes Analysis. 4 Units.

Methods of conducting empirical studies which use large existing medical, survey, and other databases to ask both clinical and policy questions. Econometric and statistical models used to conduct medical outcomes research. How research is conducted on medical and health economics questions when a randomized trial is impossible. Problem sets emphasize hands-on data analysis and application of methods, including re-analyses of well-known studies. Prerequisites: one or more courses in probability, and statistics or biostatistics.

Same as: BIOMEDIN 251, HRP 252

MED 253. Building for Digital Health. 3 Units.

This project-based course will provide a comprehensive overview of key requirements in the design and full-stack implementation of a digital health research application. Several pre-vetted and approved projects from the Stanford School of Medicine will be available for students to select from and build. Student teams learn about all necessary approval processes to deploy a digital health solution (data privacy clearance/IRB approval, etc.) and be guided in the development of front-end and back-end infrastructure using best practices. The final project will be the presentation and deployment of a fully approved digital health research application. CS106A, CS106B, Recommended: CS193P/A, CS142, CS47, CS110. Limited enrollment for this course.

Same as: CS 342

MED 255. The Responsible Conduct of Research. 1 Unit.

Forum. How to identify and approach ethical dilemmas that commonly arise in biomedical research. Issues in the practice of research such as in publication and interpretation of data, and issues raised by academic/industry ties. Contemporary debates at the interface of biomedical science and society regarding research on stem cells, bioweapons, genetic testing, human subjects, and vertebrate animals. Completion fulfills NIH/ADAMHA requirement for instruction in the ethical conduct of research. Prerequisite: research experience recommended. Intensive format, 1-day course, register for only one section. One pre-class assignment required.

MED 255C. The Responsible Conduct of Research for Clinical and Community Researchers. 1 Unit.

Engages clinical researchers in discussions about ethical issues commonly encountered during their clinical research careers and addresses contemporary debates at the interface of biomedical science and society. Graduate students required to take RCR who are or will be conducting clinical research are encouraged to enroll in this version of the course. Prerequisite: research experience recommended.

MED 256. Gene Expression Profiling in Cancer. 2-3 Units.

This course will cover techniques used to query the expression of genes in tissue and how the information derived from those techniques can be used to answer questions in cancer biology. The focus will be on the transcriptome analysis (e.g. RT-qPCR, microarrays, RNA-seq, etc.) in the context of cancer biology experiments. Throughout the quarter, we will develop a pipeline to analyze high-throughput RNA-seq data. Finally we will go over differential gene expression analysis techniques and tools used to interpret lists of genes derived from such analysis.

MED 257. Yoga: Tools for Transformation. 1 Unit.

Yoga is a technology to bring the body and mind to the peak of their capabilities, allowing one to live life to the fullest. This course is a series of six interactive webinars that provide you with simple but powerful tools to enhance your health and experience a sense of harmony within yourself and with the world around you. Topics include sleep, food, mental health, respiratory health, success and diversity and inclusion, approached from a yogic perspective. You will gain insights from timeless yogic wisdom, learn Upa Yoga (Invigorating Yogic postures), Kriya (Balancing breathing methods) and guided meditations. The techniques are from a world-renowned school of yoga-Isha Foundation and are non-religious and science based. The course's objective is to equip you with a toolkit that can be easily practiced within 5-15 minutes and provide insights to help you make every aspect of life a stepping stone for wellness. The sessions do not require any fitness level or previous exposure to yoga and can even be done sitting on a chair. The practices are designed by Sadhguru, yogi, visionary and New York Times bestselling author. A yoga mat is recommended (optional).

MED 258. Stanford Technology Access Resource Team: A Primary Care Effort to Bridge the Telehealth Divide. 1 Unit.

Video visits have been invaluable during the COVID pandemic for patients and providers and will continue to serve as a vital connection between patients and their care team beyond COVID-19. However, many patients cannot access this resource due to challenges with technology. This course will give students an opportunity to explore concepts in communication, community-building, design thinking, and team-based patient care while providing a service that will connect vulnerable patients and their caregivers to health care providers through video visits. This asynchronous course consists of recorded didactic sessions and opportunities for undergraduates and graduate students to interact with patients at Stanford and in the community through our community partners. Please note that regular use of the phone and internet are required and may not be the best option for those who are residing out of the country. MD Students should enroll in FAMMED 280.

MED 261. Leadership in Health Equity and Community Engagement: Creating New Educational Opportunities. 1 Unit.

Creating Capacity in Community Engagement Medical Education is a new course for first/second-year medical students with an interest in both community health and medical education. In a small group, faculty-facilitated setting, students will design and develop the foundational structure for a new scholarly application in the area of health equity and community engagement leadership. Additionally, students will work collaboratively with community engagement, public health, and diversity, equity, inclusion faculty members to create a new health equity and community engagement leadership course to be launched in Spring 2021. Activities will include reviewing other similar courses at peer medical schools, assessing medical education needs around these topic areas from peers, creating a syllabus and identifying key content areas, designing interactive small-group activities, and inviting health equity and community engagement practitioner guest speakers. Instructor/s permission is required. Prerequisite: INDE 201: Practice of Medicine I.

MED 262. Economics of Health Improvement in Developing Countries. 5 Units.

Application of economic paradigms and empirical methods to health improvement in developing countries. Emphasis is on unifying analytic frameworks and evaluation of empirical evidence. How economic views differ from public health, medicine, and epidemiology; analytic paradigms for health and population change; the demand for health; the role of health in international development. Prerequisites: ECON 50 and ECON 102B.

Same as: ECON 127

MED 263. Advanced Decision Science Methods and Modeling in Health. 3 Units.

Advanced methods currently used in published model-based cost-effectiveness analyses in medicine and public health, both theory and technical applications. Topics include: Markov and microsimulation models, model calibration and evaluation, and probabilistic sensitivity analyses. Prerequisites: a course in probability, a course in statistics or biostatistics, a course on cost-effectiveness such as HRP 392, a course in economics, and familiarity with decision modeling software such as TreeAge.

Same as: HRP 263

MED 264. Covid-19 Case Investigation and Contact Tracing. 3-6 Units.

In this service-learning course students will learn how to identify people who have COVID-19 and those who have been exposed to people with COVID-19. Students will learn basics about the biology and health effects of SARS-CoV-2 and the epidemiology of COVID-19. Students will be taught important skills in healthcare communication including motivational interviewing, health education, and health coaching. Students will work as volunteers together with Santa Clara County staff to interrupt the chains of transmission of COVID-19 as they apply skills they have learned to help people with the illness and those who have been exposed understand the importance of isolation, quarantine, and other critical aspects of public health needed to control and manage this disease. Students will need to be willing to commit 20 hours per week to this course for 10 weeks over 2 quarters. Requires application and instructor approval. Please contact Course Director, Lars Osterberg MD, MPH for an application form and approval for enrollment.

Same as: CHPR 235, MED 164

MED 265. Advanced Topics in the Economics of Health and Medical Care. 2 Units.

Emphasis is on research studies in health economics. Seminar style course focuses on health economics. Complimentary with HRP 256. Students will be expected to read and present papers to the group and discuss concepts with faculty. Restricted to second year or beyond PhD students in economics & economics-related disciplines.

Same as: HRP 257

MED 266. Literacy: A Fundamental Human Right Toward Health and Advocacy. 1-3 Unit.

This is a Community Engaged learning seminar style course that meets once a week for an hour and a half. We will have seminar discussions and readings related to local health literacy issues, and the systemic factors affecting health literacy through collaborative problem-solving processes through course readings and community engagement experiences. Emphasis will be on active learning, with assignments calling for data gathering through interaction with community members to explore and address these issues for more positive health outcomes. The course is open to pre-clinical medical, undergraduate and graduate students. No prerequisites.

MED 267. Ideo, Presence & The Human Experience in Medicine. 3 Units.

Presence. The Art and Science of Human Connection in Medicine is a new center, founded and lead by Dr. Abraham Verghese (<http://med.stanford.edu/presence.html>). This course partners with IDEO (<https://www.ideo.com/>) to bring design thinking to address the challenges of diagnostic error in medicine. Dr. Verghese and colleagues will outline the consequences of the lack of presence in the clinical encounter. IDEO's design thinking will be taught by Dr. Jayant Menon, Dr. Farzad Azimpour and Grace Hwang. Class participants will be divided into small groups and designated coaches. Each group will work with the course leadership to define a specific challenge and utilize the design thinking process to create deployable solutions. In class lectures and workshops will be held on campus on Tuesdays from 3.30-5 p.m., and IDEO (Forest Av, Palo Alto) based small group meetings will be held on Thursdays from 5.30-6.20pm. Admission is selective and requires all applicants submit an application before March 1, 2017. Applications can be found at <https://goo.gl/forms/7mCI7vf8PbcdVG0m1n> Questions should be emailed to sonoot@stanford.edu.

MED 268. Tackling Cross-Cultural Health Challenges: Emphasis on the Asian Community. 1 Unit.

Why do certain diseases like hepatitis B affect Asian/Pacific Islanders (APIs) disproportionately? How can public policy advance health equity among ethnic groups? Weekly lectures examine health challenges endemic to the API community, recognizing underreported health issues in a prevalent ethnic demographic. Students will emerge with an understanding of topics including stigmas attached to traditional medicine, prevalent diseases in APIs, API health politics, and cultural/linguistic barriers that health professionals encounter. Guest speakers include professionals from the Ravenswood Family Health Center, the Santa Clara County Public Health Department, Hep B Free, the Stanford School of Medicine, etc.

MED 269.**Health Equity Advancement and Leadership Through Community Engagement. 2-3 Units.**

Health Equity Advancement and Leadership Through Community Engagement (HEAL-CE) is a new course for first and second-year medical students with an interest in better understanding how to engage with communities as physicians to advance a health equity agenda. Through self-reflection, group discussions, and working through cases, students will develop practical skills to examine the drivers of health inequities and develop as physician advocates able to better address these inequities. This course has been uniquely co-developed by six current Stanford Medical School students, and will be facilitated by faculty, peer students, and experts in the areas of health equity and community engagement. Students wishing to commit to a service-learning project or working with a community partner have the option to take the class for 3 units. Same as: HEAL-CE

MED 270. Learning & Teaching of Science. 3 Units.

This course will provide students with a basic knowledge of the relevant research in cognitive psychology and science education and the ability to apply that knowledge to enhance their ability to learn and teach science, particularly at the undergraduate level. Course will involve readings, discussion, and application of the ideas through creation of learning activities. It is suitable for advanced undergraduates and graduate students with some science background.

Same as: EDUC 280, ENGR 295, PHYSICS 295, VPTL 280

MED 271. Global Biodesign: Medical Technology in an International Context. 1 Unit.

This course (BIOE371, MED271) exposes students to the challenges and opportunities of developing and implementing innovative health technologies to help patients around the world. Non-communicable diseases, such as metabolic and chronic respiratory disease, now account for 7 in 10 deaths worldwide, creating the need for innovative health technologies that work across diverse global markets. At the beginning of the quarter, the course will provide an overview of the dynamic global health technology industry. Next, faculty members, guest experts, and students will discuss key differences and similarities when commercializing new products in the for-profit health technology sector across six important regions: the US and Europe, China and Japan, and India and Brazil. Finally, the course will explore critical global health issues that transcend international borders and how technology can be leveraged to address them. This section will culminate with an interactive debate focused on whether for-profit, nonprofit, or hybrid models are best for implementing sustainable global health solutions. The last class will be devoted to synthesis, reflection, and a discussion of career opportunities in the global health technology field.

Same as: BIOE 371

MED 272A. Biodesign Innovation: Needs Finding and Concept Creation. 4 Units.

In this two-quarter course series (BIOE 374A/B, MED 272A/B, ME 368A/B, OIT 384/5), multidisciplinary student teams identify real-world unmet healthcare needs, invent new health technologies to address them, and plan for their implementation into patient care. During the first quarter (winter), students select and characterize an important unmet healthcare problem, validate it through primary interviews and secondary research, and then brainstorm and screen initial technology-based solutions. In the second quarter (spring), teams select a lead solution and move it toward the market through prototyping, technical re-risking, strategies to address healthcare-specific requirements (regulation, reimbursement), and business planning. Final presentations in winter and spring are made to a panel of prominent health technology experts and/or investors. Class sessions include faculty-led instruction and case studies, coaching sessions by industry specialists, expert guest lecturers, and interactive team meetings. Enrollment is by application only, and students are required to participate in both quarters of the course. Visit <http://biodesign.stanford.edu/programs/stanford-courses/biodesign-innovation.html> to access the application, examples of past projects, and student testimonials. More information about Stanford Biodesign, which has led to the creation of 50 venture-backed healthcare companies and has helped hundreds of student launch health technology careers, can be found at <http://biodesign.stanford.edu/>.

Same as: BIOE 374A, ME 368A

MED 272B. Biodesign Innovation: Concept Development and Implementation. 4 Units.

In this two-quarter course series (BIOE 374A/B, MED 272A/B, ME 368A/B, OIT 384/5), multidisciplinary student teams identify real-world unmet healthcare needs, invent new health technologies to address them, and plan for their implementation into patient care. During the first quarter (winter), students select and characterize an important unmet healthcare problem, validate it through primary interviews and secondary research, and then brainstorm and screen initial technology-based solutions. In the second quarter (spring), teams select a lead solution and move it toward the market through prototyping, technical re-risking, strategies to address healthcare-specific requirements (regulation, reimbursement), and business planning. Final presentations in winter and spring are made to a panel of prominent health technology experts and/or investors. Class sessions include faculty-led instruction and case studies, coaching sessions by industry specialists, expert guest lecturers, and interactive team meetings. Enrollment is by application only, and students are required to participate in both quarters of the course. Visit <http://biodesign.stanford.edu/programs/stanford-courses/biodesign-innovation.html> to access the application, examples of past projects, and student testimonials. More information about Stanford Biodesign, which has led to the creation of 50 venture-backed healthcare companies and has helped hundreds of student launch health technology careers, can be found at <http://biodesign.stanford.edu/>. Same as: BIOE 374B, ME 368B

MED 275B. Biodesign Fundamentals. 4 Units.

MED 275B is an introduction to the Biodesign process for health technology innovation. This team-based course emphasizes interdisciplinary collaboration and hands-on learning at the intersection of medicine and technology. Students will work on projects in the space of medical devices, digital health, and healthcare technologies with the assistance of clinical and industry mentors. Applicants from all majors and stages in their education welcome. Students will work in teams to develop solutions to current unmet medical needs, starting with a deep dive into understanding and characterizing important unmet medical needs through disease research, competitive analysis, market research, and stakeholder analysis. Other topics that will be discussed include FDA regulation of medical technology, intellectual property, value proposition, and business model development. Consent required for enrollment, to apply visit: https://docs.google.com/forms/d/e/1FAIpQLSdwBMjzT9VCMj5qU4rq0ePP5qCTwf3HOMmCu5jpmg_oNQD_RQ/viewform.

MED 277. AI-Assisted Care. 1 Unit.

AI has been advancing quickly, with its impact everywhere. In healthcare, innovation in AI could help transforming of our healthcare system. This course offers a diverse set of research projects focusing on cutting edge computer vision and machine learning technologies to solve some of healthcare's most important problems. The teaching team and teaching assistants will work closely with students on research projects in this area. Research projects include Care for Senior at Senior Home, Surgical Quality Analysis, AI Assisted Parenting, Burn Analysis & Assessment and more. AI areas include Video Understanding, Image Classification, Object Detection, Segmentation, Action Recognition, Deep Learning, Reinforcement Learning, HCI and more. The course is open to students in both school of medicine and school of engineering. Same as: CS 337

MED 278. Stanford Health Consulting Group- Leadership. 1-3 Unit.

This course is application-based and will be composed of students who have taken Stanford Health Consulting Group - Core and who wish to take on leadership roles in organizing and managing the high-impact health care projects for the class, which address major strategic and operational challenges in health care delivery and innovation. Participants will select projects, define objectives and deliverables, manage teams of 4-8 students from the core class, and ultimately serve as a bridge between students, faculty sponsors, and other health care stakeholders. Enrollment requires permission from the Instructor.

MED 279. Stanford Health Consulting Group - Core. 1-3 Unit.

This course provides the opportunity to analyze and solve major strategic and operational challenges in health care delivery and innovation through interdisciplinary team projects. Teams will receive direct mentorship from Stanford Medicine faculty, health care leaders, and experienced student leads, with projects carefully defined to optimize high-impact experiential learning and leadership development. Projects will culminate with student-led presentations to faculty sponsors and other health care stakeholders, as well as opportunities for further dissemination of solutions.

MED 281. How to Change the World. 1 Unit.

This unique course will enable students to learn from invited guests about how to "Change the World". As a group, Humankind has had a lasting impact on this planet but, on an individual basis, our impact can seem limited. Many innovators from the sciences, humanities, engineering and business are making this world a better place on a large scale. How do they do this? Through a series of fireside interviews with "World Changing" guest speakers from non-profits, business and government, we will explore how individuals can have a huge, positive influence on the state of the world. Students will be asked to formulate a short 5 slide presentation about their thoughts on the interviews or their plan to change the world. Previous speakers included: co-founder of Patreon, business editor of the New York Times, executive from Nike, and head of Bangladesh USAID program. Students can take ideas developed in the course to apply for the \$40,000 Westly Prize in Social Innovation (under age 28). Dinner will be provided for enrolled students. Same as: for the Better

MED 282. Early Clinical Experience at the Cardinal Free Clinics. 1-2 Unit.

The Cardinal Free Clinics, consisting of Arbor and Pacific Free Clinic, provide culturally appropriate, high quality transitional medical care for underserved patient populations in the Bay Area. Students volunteer in various clinic roles to offer services including health education, interpretation, referrals, and labs. In clinic students are guided in the practice of medical interviews, history-taking and physical examinations as appropriate, and work with attending physicians to arrive at a diagnosis and management plan. Visit <http://cfc.stanford.edu> for more information. For questions related to the course or volunteering, please email arborclinic@stanford.edu and/or pacific@med.stanford.edu. Application only; must be an accepted CFC volunteer. Same as: MED 182

MED 283. Interpersonal Communication in Health Care. 2-3 Units.

Communication is an unavoidable element of our everyday life that often goes unexamined. In this course, we will first examine the communication experiences in daily life with friends, family, significant others, peers, and coworkers. You will then engage with a variety of materials designed to enhance both your analytic and experiential knowledge about our everyday communication and how this relates to communication in health care. Analytic knowledge stems from your understanding of theoretical and written materials and others' experiences. Experiential knowledge will require you to apply what you have learned to your own communication experiences. In addition to mastering course concepts through readings, class discussions, and lectures, time in class will be devoted to applying these concepts through various activities. Same as: PSYC 283

MED 284. Team Leadership in the Cardinal Free Clinics I. 1 Unit.

Introduction to skills for effective leadership, including topics such as conflict resolution, team dynamic. Applied learning through shifts at the Cardinal Free Clinics and related project work. Enrollment limited to Cardinal Free Clinic Managers. Same as: MED 184

MED 285. Global Leaders and Innovators in Human and Planetary Health. 1-2 Unit.

Are you interested in innovative ideas and strategies for addressing urgent challenges in human and planetary health? This 7 session lecture series features a selection of noteworthy leaders, innovators and experts across diverse sectors in health and the environment such as: healthcare/medical innovation, environmental sustainability, foundations/venture capital, biotechnology/pharmaceuticals, social innovation/entrepreneurship, tech/media and artificial intelligence (AI), human rights, global poverty/development, sustainable agriculture/hunger/nutrition, public policy/systems change. Co-convener by faculty, fellows and students collaborating across several Stanford centers/departments/schools, the course invites the discussion of global problems, interdisciplinary perspectives and solutions in the fields of health and the environment. nSpecial themes for AY 2020-2021 include: 1) US and Global Responses in Combatting the Coronavirus Pandemic; 2) Climate Crisis, Wildfires, Extreme Weather and Environmental Sustainability; 3) Systemic Racism, Gender Inequality, Health Inequity and Community Well Being; 4) Democracy Under Siege, Political Landscape of Electoral, Judicial, Legislative Turmoil; 5) Partnership/Collaboration, Models of Leadership, Innovation, Sustainable Social Change; and Other Topics TBD by students/fellows. Students from all backgrounds are encouraged to enroll - registration open to all Stanford students and fellows. May be repeated for credit.
Same as: HRP 285

MED 286. Health Information Technology and Strategy. 3-4 Units.

Health Information technology was intended to help reduce and cost and improve the quality of health care services. TO date, this is little evidence that this goal has been achieved. This course is designed to explore economic frameworks that can help us to understand how health IT can achieve it's intended goals. These frameworks build from general business and economic models used successfully in other industries. The course will be utilize both business cases and lecture to prepare students to propose potential novel applications of health information technology solutions. Each student will have a team-based final project.

MED 287. Survey of Asian Health Issues. 1 Unit.

In this lecture series, students will explore Asian health topics. Specifically, the chronic disease risk and burden of Asians in the U.S. as a group is considered. Additionally, the necessity of the practice of disaggregation in the study and treatment of Asian Americans is emphasized. Topics will include cardiovascular disease, cancer, population health, precision health, pharmacogenomics and longevity in Asian-Americans. Class format is 30 minute lecture followed by 20 minutes for questions. No required readings. Opportunity to connect with guest speakers for research opportunities. Assignments will include short written reflections on lecture topics. This course is relevant for students interested in basic biology research, epidemiology, and public health policy, or clinical careers in medicine, psychology, or social work. Grading is satisfactory/no credit. All students are welcome, limit 25.
Same as: ASNAMST 287

MED 288. Perspectives on Cancer. 1 Unit.

Cancer consumes the lives of those associated with it: patients and their loved ones, their medical staff, and often the larger community. This course will address the broad impact of cancer from multiple fronts (medical, social, mental, etc.) by providing perspectives beyond the cut-and-dry scientific issue that the disease is often made out to be, enabling students to explore the "human-side" to the disease. In alternating weeks, students will participate in a Socratic seminar based on light reading about relevant topics and personally interact with guest speakers, who may include medical professional, cancer survivors and their loved ones, and activists. This course will meet weeks 2-9.

MED 289. Introduction to Bioengineering Research. 1-2 Unit.

Preference to medical and bioengineering graduate students with first preference given to Bioengineering Scholarly Concentration medical students. Bioengineering is an interdisciplinary field that leverages the disciplines of biology, medicine, and engineering to understand living systems, and engineer biological systems and improve engineering designs and human and environmental health. Students and faculty make presentations during the course. Students expected to make presentations, complete a short paper, read selected articles, and take quizzes on the material.

Same as: BIOE 390

MED 290. Independent Study with Presence and the Program in Bedside Medicine. 1-5 Unit.

Students work with their faculty mentor on projects and studies that are broadly centered around the vision and mission of Presence: The Art and Science of Human Connection and the Program in Bedside Medicine. Please see our websites for updated projects and initiatives - Presence + Program in Bedside Medicine. Currently, we focus on: How do we teach and emphasize to students, residents, physicians (and beyond) in the medical field the need to master bedside skills? How does bedside medicine affect patient care? How has patient care changed with the omnipresence of technology in our lives? How is bedside medicine going to change in the next few decades, centuries? In investigating these questions, students utilize scientific articles and data, engage patients, and collaborate with our faculty and staff. Independent study projects culminate in a presentation to our team, with the potential for posters or manuscripts. Students paired with faculty based on their area of interest and faculty/project needs. We emphasize the human connection with patients, and students are encouraged to engage patients within our program for teaching sessions, research studies, among other projects. Enrollment varies with and is limited to faculty need. Repeatable for credit; more than one-quarter of commitment expected.

MED 291. Diagnostic Medicine on Television: Truths vs. Theatrics. 1 Unit.

School of Medicine faculty in charge of Stanford's Consultative Medicine Clinic, a real-life medical mystery clinic, will review cases from the popular TV show House and critique the show's depiction of complex disease diagnosis and treatment. We tread down the road of diagnostic dilemmas and the line between fact vs fiction.

MED 292. Pathways in Global Health. 1 Unit.

The goal of this class is to introduce students to the diverse pathways that contribute to Global Health. From epidemiology, to climate change, everyone is impacted, and the ways we address global health problems is multifaceted. Each week, there will be different speakers from various departments such as in biology, anthropology, medicine who will talk about their careers and perspectives in global health. The class experience will be an interactive speaker series, where students will learn and develop ways they can contribute to global health.

MED 295. Advanced Cardiac Life Support. 2 Units.

(For clinical MD students only) Prepares students to manage the victim of a cardiac arrest. Knowledge and skills necessary for resuscitation of critically ill patients. Clinical scenarios and small group discussions address cardiovascular pharmacology, arrhythmia recognition and therapy, acute coronary syndrome including myocardial infarction, ventricular dysrhythmias and defibrillation, and acute ischemic stroke. Students should get the approval of their Clerkship Coordinator before registering for the course. nRecommended prerequisites: Medicine 300A, Pediatrics 300A, or Surgery 300A. nPrerequisite: EMED 201A.

MED 296. Being Mortal: Medicine, Mortality and Caring for Older Adults. 1 Unit.

Mortality is the inevitable, final outcome of human health. Though medical education focuses on treating illness and prolonging life, healthcare professionals in practice must face the fact that patients' lives cannot always be saved. This course will explore the difficult issues such as end-of-life planning, decision-making, and cost of care, that figure in hospitals, hospice, and assisted living centers. Guest speakers will include elderly care workers, medical writers and filmmakers, and physicians in geriatrics, oncology and palliative care, who will lead student discussions following their lectures. Upon finishing the course, students will learn how to better handle aging and death in their medical practice, in order to improve the quality of their patients' lives and that of their families as well.

MED 297. Diabetes 101 for Healthcare Providers. 1 Unit.

Diabetes is an extremely high-prevalence disease, that you will likely encounter on a consistent basis regardless of your medical specialty, so learning about the practical aspects of treatment is extremely useful. This course is designed to teach these practical skills about diabetes care, treatment and the latest research in the field. Diabetes 101 for healthcare providers is a lunch seminar style course with lectures on subjects like: A meal in the life of a diabetic; Pumps/ CGMs/ Artificial Pancreases; Beyond Types 1 and 2; The Psychology of diabetes and chronic disease; and Rare complications and future treatments.

MED 298. Being Mortal II: Approaching Serious Illness. 1-2 Unit.

This elective offers an opportunity for MD and PA students to improve their ability to engage in effective and compassionate conversations with patients facing serious illnesses. The course will feature palliative care physicians, oncologists, spiritual care providers, and hospice staff, and provide students with early exposure to concepts in palliative medicine, hospice care, and end-of-life care, which are otherwise given little emphasis in the core curriculum. Students will learn practical skills in serious illness conversations with patients, through case-based sessions involving peer-to-peer, peer-to-instructor, and peer-to-patient role play. Relevant topics in leadership, psychology, sociology, and professionalism will also be covered. In addition, students taking the course for 2 credits will have the opportunity to participate in on-site visits to hospices, nursing facilities, assisted-living facilities, and adult day health care facilities. For more information please contact Henry Bair (hbair@stanford.edu) or Paul Horak (pwhorak@stanford.edu).

MED 299. Directed Reading in Medicine. 1-18 Unit.

Prerequisite: consent of instructor.

MED 300A. Internal Medicine Core Clerkship. 6-12 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Required. DESCRIPTION: Teaches the natural history, pathophysiology, diagnosis, and treatment of medical illness. Emphasis is placed on acquiring the understanding, skills, and attitudes desirable in a scientific and compassionate physician. Students record histories, physical examinations, and laboratory data for patients for whom they are responsible and present their findings, together with their diagnoses and treatment plans, at rounds and conferences. Developing sound clinical reasoning skills is continuously emphasized. An essential aspect of the clerkship is the students' gradual assumption of direct responsibility for, and full-time involvement in, patient care with the house staff and faculty team. To take advantage of the differences in patient populations and teaching staffs of the four hospitals, students spend three weeks at either SUMC or PAVAMC, and three weeks at either SCVMC in San Jose or KPMC in Santa Clara. The resulting six week experience is an integrated curriculum designed to cover the essentials of internal medicine. The Department of Medicine supervises a random draw-based assignment to two of the four locations shortly before the beginning of each odd-numbered clerkship period. A passing grade will require both a satisfactory performance at both clinical sites and passing the NBME Subject Exam at the end of 6 weeks. PREREQUISITES: None. PERIODS AVAILABLE: 1-12, full time for 8 weeks, 18 students per period. CLERKSHIP DIRECTOR: John Kugler, M.D., jkugler@stanford.edu. CLERKSHIP COORDINATOR: Nancy D'Amico, 650-721-1640. REPORTING INSTRUCTIONS: Where: Varies, students will be notified prior to the first day; Time: TBA. CALL CODE: 4. OTHER FACULTY: Staff. LOCATION: SUMC, PAVAMC, SCVMC, KPMC.

MED 302A. Infectious Diseases Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: The infectious diseases clerkship features an active inpatient service at Stanford Hospital, which averages two to four new consults per day. As a consulting specialty service within the Department of Medicine, participants are able to see a wide variety of community-acquired and nosocomial infections. Particular emphasis is placed on clinical and diagnostic reasoning, as well as in developing a good working knowledge of antimicrobial agents and a rational approach for their use. The training and teaching opportunities are rich because of the case mix (medical, surgical, ICU) and broad patient populations that are seen at Stanford Hospital. The service is supervised on a daily basis by the infectious diseases fellow, who will work closely with students rotating on the clinical service. Students attend daily patient rounds, weekly infectious diseases conferences, and may attend other research or patient-care conferences at Stanford. The infectious diseases fellows' team room, L-134, is located in the Division of Infectious Diseases and Geographic Medicine home office on the first floor of the Lane building. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full time for 4 weeks, 2 students per period. CLERKSHIP DIRECTOR: Andrew Nevins, M.D. CLERKSHIP COORDINATOR: Brenda Norrie, 650-725-8338. REPORTING INSTRUCTIONS: Where: On the first day of the rotation, page the Stanford general infectious diseases fellow through the Stanford page operator at 650-723-6661; Time: 8:00 AM. CALL CODE: 1. OTHER FACULTY: Staff. LOCATION: SUMC.

MED 302B. Infectious Diseases Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** The infectious diseases clerkship features an active inpatient service at the Palo Alto VA, which averages one to three new consults per day. As a consulting specialty service within the Department of Medicine, participants are able to see a wide variety of community-acquired and nosocomial infections. Particular emphasis is placed on clinical and diagnostic reasoning, as well as in developing a good working knowledge of antimicrobial agents and a rational approach for their use. The training and teaching opportunities are rich because of the case mix (medical, surgical, ICU) and patient populations that are seen at the Palo Alto VA. The service is supervised on a daily basis by the infectious diseases fellow, who will work closely with students rotating on the clinical service. Students attend daily patient rounds, weekly infectious diseases conferences, and may attend other research or patient-care conferences at the VA and/or Stanford. Course objectives and resources are provided at the beginning of the rotation. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** David Relman, M.D. **CLERKSHIP COORDINATOR:** Marian Askew, 650-493-5000 x64209, marian.askew@va.gov. **REPORTING INSTRUCTIONS:** Where: On the first day of the rotation, page the Palo Alto VA infectious diseases fellow through the Stanford page operator at 650-723-6661; Time: 8:30 AM. **CALL CODE:** 1. **OTHER FACULTY:** A. Chary, M. Holodny, J. Parsonnet, C. Renault, U. Singh, D. Winslow. **LOCATION:** PAVAMC.

MED 302C. Infectious Diseases Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** Teaches the skills of diagnosis and treatment of infectious diseases, including acute illnesses seen in the economically disadvantaged, and subspecialty patient referrals. The format of the clerkship at SCVMC is the same as at SUMC and PAVAMC, but the patient population at SCVMC differs from that of the other two hospitals. Two infectious diseases teaching conferences are held weekly for all three hospital services, and there are two additional conferences per month at SCVMC. Consultations are provided to all general (medical, ob-gyn, surgical) and specialized (burn, rehabilitation, dialysis) units. Tuberculosis clinic and HIV clinic experiences are also available during the rotation. The diagnostic microbiology laboratory staff will instruct students on diagnostic microbiology lab use and interpretation of results as required. The Infection Prevention nurses provide an orientation to hospital epidemiology. Students will be supervised by an attending fellow and one to two residents. Students wishing to do this clerkship must get approval from Dr. Supriya Narasimhan first before registering. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** Supriya Narasimhan, M.D., 408-885-5304. **CLERKSHIP COORDINATOR:** Melanie Bozarth, 408-885-5395, melanie.bozarth@hhs.sccgov.org. **REPORTING INSTRUCTIONS:** Where: Room 6C095, 6th floor, Old Main Hospital, SCVMC; Time: 8:30 am. **CALL CODE:** 1. **OTHER FACULTY:** J. Gupta, J. Kim, S. Narasimhan, A. Polesky, M. Ray, H. Sahni, J. Cooper. **LOCATION:** SCVMC.

MED 303A. Cardiology Clerkship-Inpatient/Outpatient Consult. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** Emphasizes the acquisition of diagnostic skills related to cardiovascular evaluation. This experience is derived through active participation in the inpatient consultative cardiology program, which is directed by Dr. Stanley Rockson. In addition, at least three half days per week are spent in the outpatient setting, which encompasses aspects of preventive cardiology as well. Direct patient experiences are supplemented with one-on-one didactic sessions and directed reading. The elective also emphasizes the acquisition of ECG reading skills via electrocardiographic reading sessions. **PREREQUISITES:** Medicine 300A. **PERIODS AVAILABLE:** P1-12, full-time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** Stanley Rockson, M.D., 650-725-7571, rockson@stanford.edu. **CLERKSHIP COORDINATOR:** Nancy D'Amico, ndamico@stanford.edu. **REPORTING INSTRUCTIONS:** Where: Dr. Rockson, CVRC CV-267; Time: 8:30 am. **CALL CODE:** 0. **OTHER FACULTY:** Staff. **LOCATION:** SUMC.

MED 303B. Cardiology Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** Exposes the students to all areas of clinical cardiology. Students participate in four half-day ambulatory care cardiology clinics on Tuesdays, perform at least 3-5 new consultations per week, with each consultation being presented to an attending physician and having a consultation note written. Additionally, each student 'rounds' five days a week on patients on the consultation service. Students read electrocardiograms almost daily. Their physical examinations are reviewed by the attending physician and/or cardiology fellow. They are exposed to all areas of clinical cardiologic testing: exercise treadmill/stress testing, radionuclide testing (thallium scans and radionuclide ejection fractions), cardiac ultrasound studies, cardiac catheterization and percutaneous transluminal coronary intervention (PTCI). Students follow each of their patients through these tests. When surgery or catheterization is required, they may observe the procedure in the operating room or the cath lab. Students participate in daily didactic sessions covering all areas of basic cardiology. Each student also has the opportunity to participate in any other ongoing medical or surgical teaching conferences as time permits. **PREREQUISITES:** None. **PERIODS AVAILABLE:** 1-12, full time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** Karen Friday, M.D. **CLERKSHIP COORDINATOR:** Donna Harris, Donna.Harris2@va.gov, 650-858-3932. **REPORTING INSTRUCTIONS:** Where: PAVAMC, Building 100, 4th Floor, Rm 4C-110; Time: 8:00AM. **CALL CODE:** 0. **OTHER FACULTY:** V. Froelicher, P. Heidenreich, P. Milner, M. Hlatky, W. Fearon, K. Friday. **LOCATION:** PAVAMC.

MED 303C. Cardiology Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** Students are part of a cardiology team that consults on hospitalized patients, sees outpatients in seven half day sessions weekly, and attends didactic conferences including noon conferences, weekly Medicine grand-round as well as Cardiology Cath conferences. Opportunities are available to be involved in the various procedures performed by the department: stress test, echocardiogram, cardiac catheterization and implantable devices. We also encourage their participation with our Cardiovascular Surgeons for a complete cardiology experience. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full time for 4 weeks, 2 students per period, available by arrangement only. **CLERKSHIP DIRECTOR:** Susan Zhao, MD, FACC, Associate Chief, Division of Cardiology, SCVMC. **CLERKSHIP COORDINATOR:** Sherry Hamamjy (408-885-4389, sherry.hamamjy@hhs.sccgov.org). **REPORTING INSTRUCTIONS:** Where: Valley Specialty Center, 3rd Floor, Suite 340; Time: 9:00 a.m. **CALL CODE:** 0. **OTHER FACULTY:** M. Aggarwal, H. Brewster, A. Deluna, H. Shiran, C. Smith, A. Swaminathan, E. Yu, S. Zhao. **LOCATION:** SCVMC.

MED 304A. Cardiovascular Medicine Clerkship - Inpatients. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 2. **DESCRIPTION:** General cardiology rotation remains part of the bread and butter core of internal medicine inpatient rotations. Advances in diagnostic imaging, rapid bedside testing and evidence based clinical trials have allowed us to deliver coordinated complex care to our patients with ample opportunities for teaching and learning. The development of the skills and knowledge required for the practice of cardiac vascular medicine is an essential part of the educational process of internal medicine training. Cardiovascular diseases affect millions of Americans and now we have tools and drugs to treat and/or prevent this problem. It is an essential large component of a daily internal medicine practice. Involves four weeks of intensive experience with clinical cardiology inpatients. ECG reading will be included. Students are required to attend daily teaching rounds with the attending cardiologist and house staff, Division of Cardiovascular Medicine conferences, and formal teaching sessions, including electrocardiography. Cardiac patients who do not require CCU care, e.g. AF, NSTEMI, chest pain, SBE are admitted primarily via the ER 7 days a week. Students will work directly with R1 and a supervisory R2 Medicine Resident and Cardiology faculty member. Work day usually is from 7 am - 7 pm with one day off/week. No night call as patients are covered by R2 and R3 night float residents. Please note: COVID-19 pandemic has currently closed to visiting students. Please check in future (after September 2021). Visiting students must obtain approval prior to applying for this clerkship. International students should email a CV to Rita Balian balian@stanford.edu, and domestic students should email a CV to Cassandra Hawthorne at casshaw@stanford.edu. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full time for 4 weeks, 1 student per period (a second student can be added with approval from clerkship coordinator). **CLERKSHIP DIRECTOR:** John Schroeder, M.D. **CLERKSHIP COORDINATOR:** Cassandra Hawthorne, casshaw@stanford.edu, 650-723-5562. **REPORTING INSTRUCTIONS:** Where: 500 Pasteur Drive, J7 Team Room 707; Time: 7:30 am. **CALL CODE:** 1. **OTHER FACULTY:** R. Dash, W. Fearon, C. Haeffele, R. Harrington, K. Josan, A. Khandelwal, J. Knowles, D. Lee, N. Leeper, D. Liang, K. Mahaffey, D. Maron, V. Parikh, R. Reejhsinghani, S. Rockson, F. Rodriguez, J. Spin, J. Wu, S. Wu, P. Yang. **LOCATION:** SHC.

MED 305A. Hematology Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** Exposes students to the conceptual basis of hematology, the factual information that is available, and the responses required for consultation and patient care in rapidly evolving and frequently complex clinical circumstances. Under the supervision of the resident, fellow, and faculty attending physician, students admit and follow patients on the very well balanced inpatient Hematology Service (Med VIII) and do consultations. Students also round with the Med VIII team in the morning and attend outpatient clinics in the afternoon. In addition, students participate in the bone marrow reading sessions two mornings a week. Students also learn the requirements for prospective clinical protocol research. There is a weekly research conference, a journal club and a patient-oriented post-clinic conference. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** Michaela Liedtke, M.D. **CLERKSHIP COORDINATOR:** Silvia Solorzano (650-723-7078, ssolorza@stanford.edu). **REPORTING INSTRUCTIONS:** Where: meet heme fellow and heme attending, F Ground, in basement of main hospital; Time: 7:45 am. **CALL CODE:** 0. **OTHER FACULTY:** C. Berube, R. Brar, S. Coutre, J. Gotlib, D. Iberri, L. Leung, M. Liedtke, G. Mannis, B. Martin, B. Medeiros, J. Zehnder, T. Zhang. **LOCATION:** SUMC.

MED 306A. Endocrinology and Metabolism Clerkship. 3-6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** Provides students with a comprehensive experience in clinical endocrinology by combining inpatient and outpatient experiences at SCVMC, Stanford (SHC), and PAVA. Students will attend 6-7 clinics per week at the three institutions. Each clinic has approximately 15 to 30 patients who are seen by students, residents, and fellows with faculty members in endocrinology. In addition, students will participate in inpatient endocrine consultation services at Stanford (SHC). Clinical conferences, teaching rounds, grand rounds each week will cover a broad array of endocrine and metabolic problems in both clinical and research spheres. Working at the three hospitals during the clerkship will require travel. Please email us 2 months prior to the rotation to help get access to the VA and SCVMC set up so that you can rotate at all 3 sites if you prefer. Currently it will be a combination of in person and virtual telemedicine visits for outpatient clinics and inpatient rounds. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** P1-12, full-time for 2 weeks or 4 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** Kaniksha Desai, M.D. **CLERKSHIP COORDINATOR:** Jessica Wong, 650-736-8274, S025. **REPORTING INSTRUCTIONS:** Where: Valley Specialty Center, Rm. 2Q261; Time: 8:15 am on Monday. **CALL CODE:** 0. **OTHER FACULTY:** Staff. **LOCATION:** SHC, PAVAMC, SCVMC.

MED 308A. Immunology/Rheumatology Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** A comprehensive clinical experience in rheumatology. Students attend five weekly clinics, gaining familiarity with the evaluation of new patients and the longitudinal follow-up of complex autoimmune rheumatic diseases, such as SLE, myositis, scleroderma and vasculitis, and common rheumatological problems such as rheumatoid arthritis, gout and spondyloarthropathies. Inpatient consultations provide experience with diagnosis and management of more complex, acute patients with rheumatic diseases. A Journal club, division Grand Rounds and a core curricular conference provide didactic teaching. Critical thinking, cost effectiveness and social and psychological elements associated with evaluation and treatment are emphasized. Stanford Students wishing to do this clerkship must receive prior approval from Clerkship Director before registering. **PLEASE NOTE:** Visiting students must obtain approval from Russelle McDermott prior to applying for this clerkship. Please email requests to russelle.mcdermott@stanford.edu. Interested students from other Medical Schools must send their CV and 2 letters of recommendation, one from the clerkship director, and the other letter from an attending attesting to the students clinical abilities (i.e. proficient H&P's and exam skills). These must be sent to Russelle at least 4 to 6 weeks prior to the start of the period that the student would like to enroll in. **PREREQUISITES:** Completion of a full Medicine clerkship. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 1 student per period. Additional students only allowed if reviewed and approved by clerkship director. **CLERKSHIP DIRECTOR:** Stanford Shoor, M.D., sshoor@stanford.edu, 650-725-5070. **CLERKSHIP COORDINATOR:** Russelle McDermott, russelle.mcdermott@stanford.edu, 650-498-5630. **REPORTING INSTRUCTIONS:** Where: 1000 Welch Rd. Suite #203, see Russelle McDermott (call one week prior to confirm); Time: 8:30 am OR contact Dr. Shoor at sshoor@stanford.edu. **CALL CODE:** 0. **OTHER FACULTY:** M. Baker, Y. Chaichian, L. Chung, R. Fairchild, A. Horomanski, J. Hong, J. Lin, W. Robinson, N. Shah, K. Sheth. **LOCATION:** SUMC Blake Wilbur Clinic 2nd Floor.

MED 308C. Immunology/Rheumatology Clerkship. 3-6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Introduces students to patients with different forms of arthritis and related rheumatic diseases. Emphasis is on the specific examination of muscles, bones, and joints and important systemic signs and symptoms pertinent to the diagnosis of rheumatic diseases. Laboratory tests, X-rays, and biopsies are reviewed. Students see both new and returning patients and participate in both inpatient and outpatient consultations. Formal and informal participation in conferences is encouraged. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 2 weeks or 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Veronika Sharp, M.D., 408-885-6777. CLERKSHIP COORDINATOR: Veronika Sharp, M.D., or secretary, Lupe Ibanez, 408-885-6777. REPORTING INSTRUCTIONS: Where: Check in with SCVMC Housestaff Office, Room 7C081, 751 S. Bascom Avenue, San Jose; Time: Between 8:00 and 8:30 am the first day of clerkship. CALL CODE: 0. OTHER FACULTY: B. Amlani, J. Burkham, U. Marvi. LOCATION: SCVMC.

MED 311D. Advanced Medicine Clerkship. 6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Selective 2. DESCRIPTION: The Kaiser Permanente Santa Clara Medical Center offers a dynamic academic clinical clerkship in advanced medicine. Students serve as the primary provider for their patients: documenting H&P's, progress notes and discharge summaries, arranging and completing procedures, participating in daily follow-up care, and communicating with patients. Supervision is provided by the senior level resident and the teaching Hospitalist. There are weekly teaching didactics specifically for sub-interns and daily conferences. It is highly recommended that students register for this clerkship near the beginning or middle of their final year of clinicals. If you want to be sure to have a slot for a particular period, you should register to it as soon as possible as the slots are limited and fill quickly. No adds or drops less than one week before start of each period. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 2-12, full-time for 4 weeks, 2 students per period. CLERKSHIP DIRECTOR: Sudhir S. Rajan, MD, FACP, FCCP. CLERKSHIP COORDINATOR: Susan Krause (408-851-3836), KPMC, Santa Clara. REPORTING INSTRUCTIONS: Where: KPMC, Graduate Medical Education Office, Call 408-236-4921 for site location; Time: 7:00 am. CALL CODE: 5 (Not overnight). OTHER FACULTY: Staff. LOCATION: KPMC.

MED 312C. Advanced Medicine Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Selective 2. DESCRIPTION: Involves an advanced level of inpatient care responsibility. Under the close supervision of faculty and residents the student is expected to function as an intern, caring for the same number of patients and working the same hours. Beepers are provided; meals are free. Please note: Visiting students must obtain approval from Dr. Stephanie Chan prior to applying for this clerkship. Please email requests to Stephanie.Chan@hhs.sccgov.org. Interested students must send their transcript and evaluations from 2 core clerkships. These must be sent to Dr. Chan at least 4 to 6 weeks prior to the start of the period that the student would like to enroll in. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full time for 4 weeks, 6 students per period. CLERKSHIP DIRECTOR: Stephanie Chan, M.D., 408-885-7744. CLERKSHIP COORDINATOR: Amy Luu, 408-885-6300, amy.luu@sccgov.org. REPORTING INSTRUCTIONS: SCVMC, Room 4C004, 4th Floor Conference Room in the Department of Medicine [Visitors call (408-885-5110) and bring proof of PPD and malpractice insurance to 7th Floor Room 54]; Time: 8:30 am. CALL CODE: 4. OTHER FACULTY: Staff. LOCATION: SCVMC.

MED 313A. Ambulatory Medicine Core Clerkship. 6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Required. DESCRIPTION: In the ambulatory medicine clerkship, students will attend ambulatory clinics and didactics over the course of the four weeks. All students will attend Monday morning ambulatory didactics, which addresses common outpatient medical topics, such as chronic disease management. Students take their final exam on the last Friday of the rotation. Students will attend general medicine and subspecialty clinics, generally Tuesday-Friday. Sites include SUMC, PAVA, SCVMC, Kaiser Santa Clara, Kaiser Fremont, and community clinics. No student may miss more than two clerkship days. PREREQUISITES: None. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 10 students per period. CLERKSHIP DIRECTOR: Jacqueline Tai-Edmonds, M.D. and Nancy Cuan, M.D. CLERKSHIP COORDINATOR: Maria Alfonso, 650-497-6702, malfonso@stanford.edu. and Kristen Kayser, 650-497-3058, kkayser@stanford.edu. REPORTING INSTRUCTIONS: Where: Varies depending on site assignment. The students are notified prior to the first day of the clerkship; Time: TBA. CALL CODE: 2 (No call, but schedule may occasionally include an evening or weekend clinic). OTHER FACULTY: Staff. LOCATION: SUMC, PAVA, SCVMC, Kaiser Santa Clara, Kaiser Fremont, Community Clinics.

MED 314A. Advanced Medicine Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Selective 2. DESCRIPTION: Intended for students in their second clinical year who are able to proceed to an advanced experience similar to an internship. Students see patients with a wide variety of internal medical diseases in both the inpatient and outpatient settings, and gain experience in the practical aspects of internal medicine. The variety of patients and the contact with many private practitioners provide a valuable complement to other clerkship experiences. The clerkship experience is enhanced by exposure to a broad variety of patients as well as clinical teaching from community attendings and Stanford faculty. Please note: Visiting students must obtain pre-approval from Nancy D'Amico prior to applying for this clerkship. Please email requests (pre-approval form) to ndamico@stanford.edu. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 6 students from P1-4, 5 students from P5-12. CLERKSHIP DIRECTOR: John Kugler, M.D., jkugler@stanford.edu. CLERKSHIP COORDINATOR: Nancy D'Amico, 650-721-1640, 1215 Welch Road, Mod B, Space #37, MC 5418. REPORTING INSTRUCTIONS: Where: Students will be notified a week prior to the first day; Time: TBA. CALL CODE: 4. OTHER FACULTY: Staff. LOCATION: SUMC.

MED 317C. Medical ICU Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: An in-depth, three week rotation in the general medical ICU of the SCVMC. Students work as an integral part of a large ICU team aiding housestaff in managing a wide range of critically ill patients. Direct student participation in ICU activities is the essential element of this clerkship. With guidance, students gain experience with a variety of procedures, actively apply their knowledge of physiology, and hone their patient management skills. PREREQUISITES: ANES 306A or MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 2 students per period. CLERKSHIP DIRECTOR: Vibha Mohindra, M.D. CLERKSHIP COORDINATOR: Angelica Segovia, angelica.segovia@hhs.sccgov.org, 408-885-2051. REPORTING INSTRUCTIONS: Where: SCVMC, MICU, Rm 2A056, Building A; Time: 7:00 AM. CALL CODE: 4. OTHER FACULTY: U. Barvalia, W. Chen, H. Duong, A. Gohil, E. Hsiao, V. Mohindra, H. Tsai, J. Wehner. LOCATION: SCVMC.

MED 318A. Palliative Medicine. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: The clerkship provides medical students in-depth exposure to palliative care across the continuum of care including several ambulatory clinics, an inpatient consult service, and home and inpatient hospice care. Students will learn core communications strategies in disclosing bad news, eliciting and clarifying goals of care, and aiding in transitions in care. They will also learn physiology and pharmacology relevant for symptom management (e.g. pain, nausea, depression), as well as interact with patients confronting their own mortality. Students complete 4 weeks for elective credit. All patient visits will be conducted via the EPIC multi-provider video visit platform. Students will be required to complete the online Palliative Care Always course in addition to patient visits with their selected mentor. PREREQUISITES: Prior approval by the Clerkship Director is required for all students. Please fill out the Qualtrics survey at: https://stanforduniversity.qualtrics.com/jfe/form/SV_01I1gXXVKBV5uvz. We will begin reviewing pre-approval surveys for the 21-22 academic year starting in July. Surveys received prior to 7/1/2021 will not be processed. PERIODS AVAILABLE: 1-12, full-time for 4 weeks. 6 students per period. CLERKSHIP DIRECTOR: Kavitha Ramchandran, M.D. CLERKSHIP COORDINATOR: Jan Denofrio, 650-724-9705, denofrio@stanford.edu. REPORTING INSTRUCTIONS: Please look for an email from the Clerkship Coordinator the Friday prior to your rotation; Time: TBA. CALL CODE: 0. OTHER FACULTY: Staff. LOCATION: SUMC.

MED 321A. Inpatient Medical Oncology Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Selective 2. DESCRIPTION: Offers an intensive, inpatient, subspecialty care experience, equivalent to a subinternship. Students are responsible for 2 to 5 patients who are seriously ill with a broad range of medical problems in the setting of underlying malignant disease. Students work with the inpatient team composed of an attending, a medical oncology fellow, 2 medical residents and 2 medical interns. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks. 1 student per period. CLERKSHIP DIRECTOR: Tyler Johnson, M.D. CLERKSHIP COORDINATOR: Jeanne Simonian, 650-721-1969, jsimonian@stanford.edu. REPORTING INSTRUCTIONS: Stanford Hospital, F Ground (Oncology Fellow); Time: 8:00 AM. CALL CODE: 2 (patients are admitted daily and the sub-intern will admit patients on a rotation basis with the team without overnight call, but may stay late some evenings). OTHER FACULTY: Staff. LOCATION: SUMC.

MED 322A. Outpatient Medical Oncology Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Selective 1. DESCRIPTION: Familiarizes students with the subspecialty of medical oncology through subspecialty patient care in clinics and tumor boards and attending the weekly conferences of the Division of Oncology. The experience draws heavily on and will expand skills in internal medicine, emphasizing differential diagnosis, physical examination, utilization of laboratory, X-ray, and imaging studies, as well as approaches to psychosocial problems for patients with suspected or established malignant disease. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks. 2 students per period. CLERKSHIP DIRECTOR: Tyler Johnson, M.D. CLERKSHIP COORDINATOR: Jeanne Simonian, 650-721-1969, jsimonian@stanford.edu. REPORTING INSTRUCTIONS: Where: Cancer Center, Visitor Information Desk; Time: 9:00 am. CALL CODE: 0. OTHER FACULTY: Staff. LOCATION: SUMC.

MED 323A. Trans-Disciplinary Breast Oncology Clerkship. 6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Selective 1. DESCRIPTION: This 4 week trans-disciplinary breast oncology clerkship cuts across the relevant treatment modalities and emphasizes interdisciplinary, patient-centered care. Breast cancer is a highly prevalent disease often treated in early stages with medical, radiation and surgical therapies. The student will be in each clinic of these treatment clinics for one day every week, independently work up and discuss patients with assigned faculty, present new cases to the breast tumor board, and subsequently synthesize the visit notes and outpatient letters. At least one day per week, students will choose from additional care activities that shape the patient's experience, including observation of breast surgeries, wound care visits, radiation dosimetry planning or simulation, chemotherapy teaching or infusion, and medical oncology inpatient rounds. Furthermore, students are encouraged to identify patients with multiple visits that month and follow them across clinics for concentrated continuity. The clerkship offers a unique vantage point to learn about the shared decision-making and coordination of complex cancer care, in addition to the management of general health problems for breast cancer patients. Students further appreciate the longitudinal evolution of the patient's relationship with their cancer. There will be weekly debrief check-ins and short didactics to optimize the student's experience. PREREQUISITES: Any core clerkship. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Melina Telli, M.D. CLERKSHIP COORDINATOR: Vanessa Murillo, vmurillo@stanford.edu, 650-725-8738. REPORTING INSTRUCTIONS: Where: Stanford Cancer Center CC-2241; Time: 8:30 am. CALL CODE: 5. OTHER FACULTY: Staff. LOCATION: SUMC.

MED 325A. Gastroenterology Clerkship. 3-6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Involves participation in inpatient consultations and outpatient clinics. Students are responsible for evaluating patients with major diseases of the liver and gastrointestinal tract. They assume primary responsibility in both inpatient and outpatient settings and present cases regularly to the faculty attending physician. Daily inpatient rounds are made with the attending physician, fellow, and resident. Clinics are held on Mondays. Clinical conferences and journal clubs are held once weekly. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 2 weeks, 1 student per period. CLERKSHIP DIRECTOR: Subhas Banerjee, M.D., 650-736-0431. CLERKSHIP COORDINATOR: Abbey Hamilton, 650-723-4519, abbeyh@stanford.edu. REPORTING INSTRUCTIONS: Where: Endoscopy Unit, 300 Pasteur Dr, Basement Room H0262. (Please ask for GI attending fellow); Time: 8:30 am. CALL CODE: 0. OTHER FACULTY: A. Aijaz, S. Banerjee, L. Becker, A. Cheung, J. Clarke, T. Daugherty, R. Dhanasekaran, D. Dronamraju, N. Fernandez-Becker, S. Friedland, J. Glenn, A. Goel, D., Goldenberg, A. Gottfried, D. Grewal, H. Halawi, E. Ho, J. Hwang, A. Kamal, K. Keyashian, R. Kim, R. Kumari, P. Kwo, U. Ladabaum, A. Lowe, D. Limsui, L. Neshatian, L. Nguyen, M. Nguyen, P. Okafor, W. Park, A. Shah, S. Sinha, I. Sonu, S. Streett, T. Zikos. LOCATION: SUMC.

MED 325B. Gastroenterology Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Gives students responsibility for both inpatient consultations and the evaluation and treatment of referred patients in the Gastroenterology clinic. Rounds with the faculty consultant, fellow and resident, as well as GI endoscopic procedures are conducted daily. Conferences on clinical gastroenterology, hepatology, gastrointestinal radiology, and gastrointestinal and liver histopathology are held weekly. A combined medical-surgical conference is held every other week. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Ramsey Cheung, M.D. CLERKSHIP COORDINATOR: Matthew Alcera, Matthew.Alcera@va.gov. REPORTING INSTRUCTIONS: PAVAMC, Bldg. 100, Endoscopy Suite; Time: 8:30 am. CALL CODE: 0. OTHER FACULTY: R. Cheung, R. Soetikno, S. Matsui, B. Omari, S. Friedland. LOCATION: PAVAMC.

MED 325C. Gastroenterology Clerkship. 3-6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** This clerkship provides experience in outpatient and inpatient gastroenterology (GI). In the mornings, students will evaluate outpatients referred to GI clinic and will also have an opportunity to observe outpatient endoscopic procedures, including upper endoscopy, colonoscopy, paracentesis, ERCP and endoscopic ultrasound. In the afternoons, students will evaluate inpatients who require GI consultation, observe inpatient procedures and participate in inpatient rounds with the GI team. Students will assume primary responsibility for the inpatients they provide consultation on. In addition to direct patient care, students will attend multiple didactic lectures and conferences, including a bi-weekly GI/Surgery conference, bi-weekly GI Radiology conference, bi-weekly GI Journal Club, monthly Liver Tumor Board, monthly GI Pathology conference and weekly Stanford multi-disciplinary (GI/Surgery/Radiology/Pathology) Digestive Diseases Clinical Conference. This clerkship is closed to registration unless given prior approval by Clerkship Coordinator. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full-time for 2 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** Elizabeth Hwang, M.D., 408-793-2598. **CLERKSHIP COORDINATOR:** Louise Leprohon, 408-885-7947, Louise.Leprohon@hhs.sccgov.org. **REPORTING INSTRUCTIONS:** Where: SCVMC, Valley Specialty Center, 5th Floor, GI Clinic; Time: 8:00 am. **CALL CODE:** 0. **OTHER FACULTY:** A. Chen, A. Davila, A. Ho, E. Hwang, A. Kamal, R. Lerrigo, D. Lin, N. Shah, J. Williams. **LOCATION:** SCVMC.

MED 326A. Hepatology Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** Involves participation in inpatient consultations and outpatient clinics for 4 weeks. The goals are to familiarize students with evaluation and management of patients with major liver diseases. Students are responsible for evaluating patients with major diseases of the liver diseases. They assume primary responsibility in both inpatient and outpatient settings and present cases regularly to the faculty attending physician. Daily inpatient rounds are made with the attending physician, fellow, and resident. Clinics are held on Mondays to Friday. Journal clubs are held once weekly. Pathology conferences are held on Thursday and radiology conferences on Friday. Patient care conferences are held on Tuesday and Friday. **PREREQUISITES:** None. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 2 students per period. **CLERKSHIP DIRECTOR:** Mindie Nguyen, M.D., MAS, 650-722-4478. **CLERKSHIP COORDINATOR:** Jeff Mathews, 650-498-6084. **REPORTING INSTRUCTIONS:** Where: 780 Welch Road, Room CJ280K; Time: 8:30 am. **CALL CODE:** 0. **OTHER FACULTY:** A. Ahmed, T. Daugherty, A. Goel, R. Kumari, P. Kwo. **LOCATION:** SUMC, PAVAMC.

MED 328A. Addiction Medicine Clerkship. 3-6 Units.

VISITING: Closed to visitors unless already approved for clerkship within SHC. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** During COVID most visit will be virtual and 3 days per week. This clerkship will teach students the fundamentals of addiction medicine from the perspective of primary care and interdisciplinary coordination of care. Clinic exposure will include opportunities to interact with patients with substance use disorders in a variety of settings that may include: Community Clinics through Santa Clara Valley Medical Center, Stanford Family Medicine Clinic, Los Altos Primary Care and Buprenorphine and Alcohol Use Disorder Support Groups, and Residential and Inpatient settings. There may be opportunities to rotate in a smoking cessation group. Students will learn about outpatient detoxification from opioids and alcohol, relapse prevention medications for opioid and alcohol use disorders and the culture of substance use recovery. Please contact coordinator listed below for pre-approval before signing up. **PREREQUISITES:** A minimum of 2 clerkship experiences that may include: Family or Internal Medicine, Pediatrics, Psychiatry, Surgery, OBGYN, Emergency, or Ambulatory (Urgent Care) Medicine. **PERIODS AVAILABLE:** 1-12, full time for 2 weeks or 4 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** Chwen-Yuen Angie Chen, MD, FACP, FASAM, ChChen@stanfordhealthcare.org. **CLERKSHIP COORDINATOR:** Chwen-Yuen Angie Chen, MD, FACP, FASAM, ChChen@stanfordhealthcare.org. **REPORTING INSTRUCTIONS:** Where: TBA; Time: 8:00 am. **CALL CODE:** 0. **OTHER FACULTY:** Staff. **LOCATION:** SHC.

MED 330A. Pulmonary Medicine Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** Helps students develop the attitudes and skills necessary for the evaluation and management of patients with pulmonary disease. Students are expected to understand pulmonary disease in the context of internal medicine, using general as well as specific approaches to diagnosis. The clerkship affords direct patient involvement under supervision in the outpatient clinic and on inpatient consultation services. Critically ill patients with pulmonary disease in the ICU will be evaluated. Pulmonary function tests are evaluated daily, and student involvement in specialized studies is emphasized. Divisional clinical conferences are held weekly, and a joint medical-surgical conference bi-weekly. Each student has the option of spending one-half of the clerkship at the PAVAMC and one-half at the Stanford University Hospital on a rotational basis. These options are discussed and determined on the first day of the clerkship. **PREREQUISITES:** MED 300A. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks (half-time at SUH; half-time at PAVAMC,) 2 students per period. **CLERKSHIP DIRECTOR:** Peter N. Kao, M.D, Ph.D. **CLERKSHIP COORDINATOR:** Kerry Keating, 650-723-1150, keatingk@stanford.edu. **REPORTING INSTRUCTIONS:** Where: H3147; Time: 8:45 am. **CALL CODE:** 1. **OTHER FACULTY:** A. Andruska, H. Bedi, L. Chhatwani, S. Chinthrajah, K. de Boer, T. Desai, G. Dhillon, K. Duong, L. Eggert, J. Hsu, J. Holty, A. Jonas, N. Juul, P. Kao, K. Kudelko, W. Kuschner, Y. Lai, J. Levitt, M. McCarra, M. Marmor, P. Mohabir, S. Majumdar, J. Mooney, M. Nicolls, H. Paintal, S. Pasupneti, R. Raj, M. Ramsey, A. Rogers, S. Ruoss, B. Shaller, H. Sharifi, G. Singh, E. Spiekerkoetter, A. Sung, Y. Sung, A. Sweatt, R. Van Wert, A. Weinacker, R. Zamanian, C. Zone, V. de Jesus Perez. **LOCATION:** SUMC.

MED 330C. Pulmonary Medicine Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Affords students an opportunity to deal with a broad range of clinical pulmonary problems. Working as part of a busy consulting service, students develop a practical approach to evaluating and managing patients with respiratory disease. The spectrum of patients ranges from ambulatory outpatients, to patients with tuberculosis, to ICU patients with acute respiratory failure. The application of the basic principles of physiology to clinical problems is emphasized. Under supervision, students participate in interpreting pulmonary function tests and other diagnostic procedures. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Eric Hsiao, M.D. CLERKSHIP COORDINATOR: Angelica Segovia (408-885-2051), Building Q, Suite 5Q153, Valley Specialty Center. REPORTING INSTRUCTIONS: Where: Valley Specialty Center, 5th Floor, Room 5Q153; Time: 8:00 am. CALL CODE: 0. OTHER FACULTY: U. Barvalia, V. Chen, H. Duong, A. Gohil, E. Hsiao, V. Mohindra, H. Tsai, J. Wehner. LOCATION: SCVMC.

MED 331A. Advanced Work in Pulmonary and Critical Care Medicine. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: The content of this clerkship is flexible. Students can do additional clinical work in Pulmonary and Critical Care Medicine or research work in the Division of Pulmonary and Critical Care Medicine. Specific arrangements for content should be made with the faculty in advance. PREREQUISITES: MED 330A and consent of instructor. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Peter Kao, M.D. CLERKSHIP COORDINATOR: Kerry Keating, 650-723-1150, keatingk@stanford.edu. REPORTING INSTRUCTIONS: Where: H3147; Time: 9:00 am. CALL CODE: 1. OTHER FACULTY: A. Andruska, H. Bedi, L. Chhatwani, S. Chinthrajah, K. de Boer, T. Desai, G. Dhillon, K. Duong, L. Eggert, J. Hsu, J. Holty, A. Jonas, N. Juul, P. Kao, K. Kudelko, W. Kuschner, Y. Lai, J. Levitt, M. McCarra, M. Marmor, P. Mohabir, S. Majumdar, J. Mooney, M. Nicolls, H. Paintal, S. Pasupneti, R. Raj, M. Ramsey, A. Rogers, S. Ruoss, B. Shaller, H. Sharifi, G. Singh, E. Spiekerkoetter, A. Sung, Y. Sung, A. Sweatt, R. Van Wert, A. Weinacker, R. Zamanian, C. Zone, V. de Jesus Perez. LOCATION: SUMC.

MED 334A. Nephrology Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Provides students with an introduction to clinical nephrology, including diseases of the kidney and disorders of fluid, electrolyte, and acid-base balance. The clerkship is available at SUMC. Students evaluate inpatients as members of the nephrology consulting team. After completing this rotation, we expect that students will be able to independently work up and manage a wide variety of acute and chronic disturbances of renal function, as well as glomerular disease, vasculitis, hypertension, fluid and electrolyte disorders, and acid-base disturbances. They also participate in the management of patients with end-stage renal disease. There is a weekly schedule of grand rounds, journal club, and a monthly renal biopsy conference. PREREQUISITES: Medicine 300A, Surgery 300A or Pediatrics 300A are preferred but not required. PERIODS AVAILABLE: 1-12, full time for 4 weeks, 2 students per period. CLERKSHIP DIRECTOR: Shuchi Anand, M.D., M.S., 650-723-6961. CLERKSHIP COORDINATOR: Cayla Whitney, caylacw@stanford.edu, 650-721-6680, 777 Welch Road Suite DE Palo Alto, CA 94304. REPORTING INSTRUCTIONS: Where: 777 Welch Road Suite DE Palo Alto, CA 94304; Time: 8:30 am. CALL CODE: 0. OTHER FACULTY: T. Meyer, R. Lafayette, J. Scandling, J. Tan, Y. Lit, G. Chertov, V. Bhalla, A. Pao, M. Tamura, J. Yabu, N. Arora, R. Isom, T. Chang, S. Anand, T. Sirich, K. Erickson, P. Fatehi. LOCATION: SUMC, PAVAMC.

MED 334C. Nephrology Clerkship. 6 Units.

VISITING: Open to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: Students see patients in the outpatient renal clinic, and on an active inpatient service. The diverse patient population at SCVMC enables student to encounter patients with a wide variety of acute and chronic renal diseases, hypertension, and fluid and electrolyte disturbances. The clerkship is also designed to acquaint students with a systematic approach to patients with fluid, electrolyte, and acid-base abnormalities. A series of seminars covering a broad range of topics in nephrology and designed specifically for medical students is given by the faculty. An optional self-study program on fluid and electrolytes consisting of 8 taped lectures with slides is also available. Weekly divisional nephrology conferences are held at SCVMC, and address various topics in nephrology. Additionally, there is a monthly nephrology resident conference, in addition to a monthly renal pathology conference. Videotaped lecture series on the entire field of nephrology are also available. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 2 students per period. CLERKSHIP DIRECTOR: Anjali Bhatt Saxena, M.D. CLERKSHIP COORDINATOR: Mary Jane Monroe (408-885-7019). REPORTING INSTRUCTIONS: Where: SCVMC, Renal Dialysis Unit, 3rd Floor [Visitors call (408-885-5110) and bring proof of PPD and malpractice insurance as directed]; Time: 8:30 am. CALL CODE: 0. OTHER FACULTY: A. Saxena, J. Lugovoy, A. Jobalia, B. Young, N. Pham, F. Luo, staff. LOCATION: SCVMC.

MED 338A. Outpatient Infectious Diseases Elective. 3-6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Elective. DESCRIPTION: This clerkship provides medical students with an elective course of 3 weeks of outpatient ID experience. Clinical experiences will focus on antibiotic selection, utilization and stewardship, as well as the management of commonly encountered ID syndromes, including sexually transmitted infections, HIV, Tuberculosis, and viral hepatitis. Students will attend outpatient clinics at the Palo Alto Veterans Administration Medical Center, the Stanford affiliated Positive Care Clinic, and the San Mateo County Health System. Due to COVID-19, some or all of these clinics may be televisits. There is potential flexibility for students interested in a focus area at a specific clinic or with a specific physician, to arrange more concentrated clinical work at one of the clinics with permission of the attending. Each student will be asked to prepare a small research project (e.g. a case or literature review) to be presented at the end of the rotation. Students planning on doing the outpatient ID rotation should contact Dr. Levy at vlevy@stanford.edu as soon as possible but at least 8 weeks prior to rotation beginning to verify there is period availability for the desired period of rotation and that all needed electronic medical record and infection control requirements have been obtained. This clerkship requires prior approval by Clerkship Director. PREREQUISITES: MED 300A. PERIODS AVAILABLE: Due to COVID-19, this clerkship is closed until May 24, 2021. 1-12, full-time for 2 weeks or 4 weeks, 1 student per period. CLERKSHIP DIRECTOR: Vivian Levy, M.D., vlevy@stanford.edu, 650-573-3987. CLERKSHIP COORDINATOR: Vivian Levy, M.D., vlevy@stanford.edu, 650-573-3987. REPORTING INSTRUCTIONS: Where: Dr. Levy will send the student a schedule, curriculum and orientation materials prior to starting the rotation of clinics and physicians; Time: TBA. CALL CODE: 0. OTHER FACULTY: Staff. LOCATION: SUMC, PAVAMC.

MED 339B. Advanced Medicine Clerkship. 6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Selective 2. DESCRIPTION: Intended for clinically experienced students who seek an advanced experience similar to an internship. PREREQUISITES: MED 300A. PERIODS AVAILABLE: 1-12, full-time for 4 weeks, 5 students per period. CLERKSHIP DIRECTOR: Arlina Ahluwalia, M.D., 650-493-5000 x66759. CLERKSHIP COORDINATOR: Matthew Alcera, 650-493-5000 x63157, Matthew.Alcera@va.gov, Bldg. 5, 3rd Fl Rm C-367. REPORTING INSTRUCTIONS: Where: First Monday of rotation, Bldg 101; Time: 08:30 a.m. CALL CODE: 4. OTHER FACULTY: Staff. LOCATION: PAVAMC.

MED 340B. Medical-Surgical Intensive Care Unit Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** This clerkship provides experience managing adult patients in a critical care unit. Students learn how to optimize care for the acutely ill patient and the multidisciplinary approach to complex patients. Teaching emphasizes the review of basic organ physiology, the ability to determine the pathophysiologic mechanisms involved in critical illness, and the formulation of a physiologic based treatment plan. Students gain experience with the implementation of monitoring and therapeutic devices used in the intensive care units and begin to become adept at the evaluation, stabilization and management of the most critically ill patients expected to be encountered in today's acute care hospitals. Ward rounds, bedside evaluation and treatment, and individual interactions with attending, fellows and residents are part of the educational process. Students must attend mandatory simulator courses in order to receive passing grade for this clerkship. Students wishing to do this clerkship must get approval from Bernadette Carvalho first before registering. Students must register for Anes 340B for this clerkship. **PREREQUISITES:** Anesthesia 306A or Medicine and Surgery core clerkships. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** Juliana Barr, M.D., 650-493-5000 x64452, Building 1, Room F315, PAVAMC 112A. **CLERKSHIP COORDINATOR:** Bernadette F. Carvalho, berniec@stanford.edu. **REPORTING INSTRUCTIONS:** Where: PAVAMC, MSICU, 3rd Floor; Time: 8:00 am. **CALL CODE:** 4. **OTHER FACULTY:** E. Bertaccini, R. Chitkara, G. Lighthall, W. Kuschner, G. Krishna, J. Olsson. **LOCATION:** PAVAMC.

MED 342A. Geriatric Medicine Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** This clinical experience introduces students to the principles of effective geriatric care in both inpatient and outpatient settings. Geriatric faculty and fellows work with students in various clinical settings including: 1) outpatient clinics at the VA Palo Alto Health Care System 2) outpatient clinic at Stanford University 3) a community skilled nursing facility in Palo Alto. The rotation emphasizes the evaluation and management of patients with multiple chronic conditions, such as diabetes, congestive heart failure, hypertension, urinary incontinence, mental status changes, functional impairments and gait problems. This clerkship requires written approval by Clerkship Director before you can enroll. Please contact Dr. Marina Martin at marinam@stanford.edu to check for availability of spots in the clerkship. **PREREQUISITES:** None. **PERIODS AVAILABLE:** 1-12, full-time for 4 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** Dr. Marina Martin, marinam@stanford.edu. **CLERKSHIP COORDINATOR:** Ashley Callery, ashleync@stanford.edu. **REPORTING INSTRUCTIONS:** Where: Arrange with clerkship coordinator; Time: Arrange with clerkship coordinator. **CALL CODE:** 0. **OTHER FACULTY:** Staff. **LOCATION:** SUMC, PAVAMC.

MED 343B. Palliative Care Clerkship. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Selective 1. **DESCRIPTION:** Teaches the natural history, prognostication, and management of serious illnesses. Emphasis is placed on acquiring the knowledge, skills, and attitudes desirable in a compassionate clinician-scholar physician. Students record history (with special assessment to symptoms, functional assessment, mood and cognitive assessment), physical examination, and pertinent laboratory data for patients for whom they are responsible and present their findings, together with their diagnoses and management care plans, at rounds, and daily team meetings. Provision of patient-centered, family-oriented care is continuously emphasized. An essential aspect of the clerkship is the students' gradual assumption of direct responsibility for, and full-time involvement in, care of patients with serious illness with the house staff, fellows and a large inter-disciplinary team and this is why we have structured this as a 4 week rotation. A passing grade will require both a satisfactory performance and a successful 30 minute formal presentation on palliative care topic of interest (student will discuss ideas with Course Director to identify potential topics of interest to them). Course highlights include (a) mentoring from the course director and a cadre of mentors including Palliative Care Attendings and Fellows (b) focus on skill building and practice with special focus on communication skills (c) opportunity to work closely with a multi-disciplinary team (d) learning to care for the patient and their family as the unit of care. **PREREQUISITES:** This clerkship requires written approval by Clerkship Director before you can enroll. Please contact Dr. VJ Periyakoil at periyakoil@stanford.edu to check for availability of spots in the clerkship. **PERIODS AVAILABLE:** 1-12, for 4 weeks, 1 student per period. **CLERKSHIP DIRECTOR:** VJ Periyakoil, M.D. (periyakoil@stanford.edu). **CLERKSHIP COORDINATOR:** VJ Periyakoil, M.D. (650-497-0332, periyakoil@stanford.edu). **REPORTING INSTRUCTIONS:** Where: This will depend on the start day of the rotation as training activities vary by the day; Time: 8:00 am. **CALL CODE:** 0. **OTHER FACULTY:** Staff. **LOCATION:** SUMC, PAVAMC, SCVMC.

MED 344A. Elective in Quality Improvement, Patient Safety, and Organizational Change. 6 Units.

VISITING: Open to visitors. **TYPE OF CLERKSHIP:** Elective. **DESCRIPTION:** Mentored practice and growth in knowledge, skills, and attitudes in quality improvement, patient safety, and organizational change. Students engage in directed readings, attend sessions with experienced QI Champions, learn about quality improvement projects and processes at Stanford University, participate in ongoing quality and patient safety activities within the Department of Medicine and Stanford Hospital and Clinics, and design and begin a quality improvement/patient safety/organizational change project. Designed to allow the student to develop a mentoring relationship with a QI Champion who will serve as a role model, mentor, and educator. Contact Dr. Lisa Shieh at lshieh@stanford.edu if interested. Please note: Visiting students must obtain approval from Dr. Lisa Shieh prior to applying for this clerkship. Please email requests to lshieh@stanford.edu. **PREREQUISITES:** None. **PERIODS AVAILABLE:** 1-12, for 4 weeks, 3 students per period. **CLERKSHIP DIRECTOR:** Lisa Shieh, M.D., Ph.D, FHM, 650-724-2917, lshieh@stanford.edu. **CLERKSHIP COORDINATOR:** Lisa Shieh, M.D., Ph.D, FHM, 650-724-2917, lshieh@stanford.edu. **REPORTING INSTRUCTIONS:** Where: 700 Welch Road, Suite 310B, Palo Alto, CA 94304; Time: TBA. **CALL CODE:** 0. **OTHER FACULTY:** K. Hooper, L. Shieh. **LOCATION:** SUMC.

MED 347A. Stanford Perioperative Internal Medicine Rotation. 3-6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Elective.

DESCRIPTION: The Stanford Perioperative Internal Medicine elective is a two-week inpatient rotation that will provide the students a clinical immersive experience in medical management of Orthopedics, Neurosurgery and ENT patients with bedside and didactic teaching. The students will be directly supervised by hospital medicine attendings. They will be expected to perform thorough histories and physical examinations of patients admitted to the hospital and then formulate and implement treatment plans. This rotation will expose the students to learn effective ways to evaluate medical co-morbidities, learn evidence based clinical practices to prevent and treat post-operative complications and learn about research and quality improvement projects pertaining to perioperative medicine. The students will also be expected to attend the resident morning report, noon conference and medical grand rounds during this time. PREREQUISITES: None. PERIODS AVAILABLE: 1-12, full time for 2 weeks, 2 students per period. CLERKSHIP DIRECTOR: Sarita Khemani, M.D. CLERKSHIP COORDINATOR: Sarita Khemani, M.D., 650-906-5070, skhemani@stanford.edu. REPORTING INSTRUCTIONS: Where: Stanford hospital 500 P, Floor L4, nursing station; Time: 9:00AM. CALL CODE: 0. OTHER FACULTY: Stanford Medicine faculty and residents from multiple disciplines. LOCATION: SUMC.

MED 370. Medical Scholars Research. 4-18 Units.

Provides an opportunity for student and faculty interaction, as well as academic credit and financial support, to medical students who undertake original research. Enrollment is limited to students with approved projects.

MED 390. Curricular Practical Training. 1-18 Unit.

CPT Course required for international students completing degree requirements.

MED 397A. MD Capstone Experience: Preparation for Residency. 1 Unit.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Elective.

DESCRIPTION: This 1-week clerkship provides senior medical students an opportunity to review and practice a wide variety of knowledge and skills that are essential to preparing them to work effectively as interns. The capstone clerkship will include a significant emphasis on simulation-based learning as well as small group sessions, didactics, skills labs, and resident panels. Required skills and common experiences during internship will be specifically highlighted, such as cross cover calls, sign out, and advanced communication skills. All training is designed to help students master practical skills that will be essential during the first few months of any intern year. For those students who are not enrolled for the quarter in which the Capstone Clerkship is offered, please contact Mary Devega at mdevega@stanford.edu to register. PREREQUISITES: Completion of required core clerkships. PERIODS AVAILABLE: P14 (5/3/21-5/9/21) or P15 (5/17/21-5/23/21) for 2020-21; P14 (5/2/22-5/8/22) or P15 (5/16/22-5/22-22) for 2021-22, full-time for 1 week. 30 students maximum per period. CLERKSHIP DIRECTOR: Jeff Chi, M.D. and John Kugler, M.D. CLERKSHIP COORDINATOR: Mary Devega mdevega@stanford.edu. REPORTING INSTRUCTIONS: Where: Course coordinator will send out reporting instructions with syllabus before the start of the clerkship; Time: TBA. CALL CODE: 2 - you will be asked to do one evening session, but no overnight session. OTHER FACULTY: Stanford Medicine faculty and residents from multiple disciplines. LOCATION: SUMC.

MED 398A. Clinical Elective in Medicine. 3-6 Units.

VISITING: Closed to visitors. TYPE OF CLERKSHIP: Elective.

DESCRIPTION: Provides an opportunity for a student in the clinical years to have a clinical experience in one of the fields of Medicine, of a quality and duration to be decided upon by the student and a faculty preceptor in the Department of Medicine. Please note: Students cannot add 398A clerkships directly to their fishbowl schedules through the regular shuffles. Please contact Caroline Cheang in the Office of Medical Student Affairs at cheang@stanford.edu or 650-498-7619 with the faculty preceptor's name and email address to add this clerkship. PREREQUISITES: None. PERIODS AVAILABLE: 1-12, full time for 4 weeks, 4 students per period. CLERKSHIP DIRECTOR: John Kugler, M.D., jkugler@stanford.edu. CLERKSHIP COORDINATOR: Nancy D'Amico, 650-721-1640, 1215 Welch Road, Mod B, Space #37, MC 5418. REPORTING INSTRUCTIONS: Where: TBA (designated faculty preceptor); Time: TBA. CALL CODE: 0. OTHER FACULTY: Staff. LOCATION: SUMC, PAVAMC, SCVMC, KPMC.

MED 399. Graduate Research. 1-18 Unit.

Students undertake investigations sponsored by individual faculty members. Prerequisite: consent of instructor.