



Chicago Medical School

## ACADEMIC CATALOGUE 2008–2009





## **Chicago Medical School**

### **Academic Catalogue 2008–2009**

Rosalind Franklin University of Medicine and Science and the Chicago Medical School reserve the right to change, at any time and without notice, their requirements, regulations, course and program offerings, fees, charges, and other matters addressed in this catalogue. RFUMS must reserve the right to modify or terminate programs described herein. However, modification of program requirements will not adversely affect those students already enrolled in a program, nor will termination of a program affect anything other than the closure of admission thereto.

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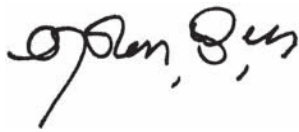
*Dear Prospective Student:*

*Chicago Medical School is proud to have educated physicians, scientists and researchers for 95 years. We are committed to continuing this tradition well into the future and, in doing so, plan to serve our primary mission of providing our students with a comprehensive medical education while preparing them for a career and life of excellence in medicine. Recognizing that our students will be responsible for the health of future generations, we are especially pleased that our School is located within a health sciences University that serves as a national leader in interprofessional education.*

*Our innovative educational programs, combined with our outstanding facilities and superb faculty, all make for an energized and exciting environment. It should become readily apparent to you why we and others within the University are greatly enjoying our “Life in Discovery!”*

*Your interest in the Chicago Medical School honors and inspires us. We hope your interest in our program is the start of a fulfilling and successful future.*

*Sincerely,*

A handwritten signature in black ink, appearing to read "Arthur J. Ross, III". The signature is fluid and cursive, with the last name "Ross" being the most prominent part.

*Arthur J. Ross, III, MD, MBA*

*Dean, Chicago Medical School*

## Introduction

The Chicago Medical School at Rosalind Franklin University of Medicine and Science is dedicated to encouraging and educating students to become competent, responsible, concerned physicians. The School seeks to help students acquire knowledge, skills and attitudes for a lifelong career of learning and professional service.

Students, faculty and administration strive together to meet these goals at all organizational levels. The Chicago Medical School provides an environment where students work closely with faculty and administration. The School is vitally concerned with meeting students' developmental needs, both professional and personal.

## History

Rosalind Franklin University of Medicine and Science is a four-college University that was built around the Chicago Medical School (CMS), which has been educating physicians and furthering biomedical research for 95 years. Established in 1912, the Chicago Medical School's physician and citizen founders aimed to build a combined medical school and hospital in which employed men and women could study medicine at night, a common practice at the time. Many of Chicago's finest medical teachers and practitioners who had been associated with Jenner Medical School transferred to CMS when Jenner closed in 1917.

William Dorland, editor of the well-known medical dictionary, was dean of the School for a time. The School's most note-worthy period of development took place under the direction of John J. Sheinin, MD, PhD, MSc, who served as dean and president from 1932 to 1966. The School successfully met the challenges arising from the revolutionary restructuring of American medical education following the Flexner Report. In 1930, the School moved to what was to become one of the world's largest aggregations of medical facilities. Located just west of downtown Chicago, this complex contained three medical schools, seven hospitals, colleges of dentistry, pharmacy, nursing, and two undergraduate universities. CMS occupied an eleven-story facility in a renowned research and educational center.

In 1967, the University of Health Sciences (UHS) was established. The University comprised the Chicago Medical School, the School of Related Health Sciences (now College of Health Professions), and the School of Graduate and Postdoctoral Studies (SGPDS). In 1980, the University relocated to its current campus in North Chicago, IL, adjacent to the North Chicago Veterans Affairs Medical Center and Naval Station Great Lakes. The University, granted full accreditation by the North Central Association in 1980, represented one of the first educational institutions in the country devoted exclusively to educating men and women for a broad range of professional careers in health care and research. In 1993, the institution was renamed Finch University of Health Sciences in honor of its long-time leader and Chair of the Board of Trustees, Mr. Herman M. Finch. In 2001, The Dr. William M. Scholl College of Podiatric Medicine (established in 1912) became part of the University structure, which now comprises four colleges.

On January 27, 2004, the University publicly announced its intent to change its name to Rosalind Franklin University of Medicine and Science, in honor of Rosalind Franklin, PhD, a pioneer in the field of DNA research. The name change became legal on March 1, 2004, at which time the School of Related Health Sciences also changed its name to College of Health Professions.

In addition to the name change and the announcement of several new strategic initiatives, the University is currently in the midst of profound physical growth. In October 2002, the University opened its Health Sciences Building, a 140,000-square-foot state-of-the-art facility that houses laboratories, auditoriums, classrooms, departmental offices, a student union, the Feet First Museum, University bookstore, recreational game room, exercise facility, and a café. The University became a residential campus for the first time in its history when three student housing facilities, totaling 180 apartments, opened in July 2003.

The University's Basic Sciences Building is a 400,000-square-foot facility that houses a 52,000-square-foot Library and The Daniel Solomon, MD, and Mary Ann Solomon Learning Resource Center, as well as administrative offices, classrooms, auditoriums, basic science departments, research and teaching laboratories, and dining areas. Located on the north end of campus is the Heather Margaret Bligh Cancer Research Laboratory, a cancer immunology research and treatment complex.

University enrollment exceeds 1,700, with the bulk of its students enrolled in CMS. The University's total faculty is 820. Major hospital affiliates include: North Chicago Veterans Affairs Medical Center, John H. Stroger, Jr., Hospital of Cook County, Mount Sinai Hospital and Medical Center, and Advocate Lutheran General Hospital. The University's clinical campus consists of the North Chicago Veterans Affairs Medical Center, The Captain James A. Lovell Federal Health Center and the Rosalind Franklin University Health System.

Dr. Rosalind Franklin, through her pioneering work in the science of life and through her unflagging perseverance, serves as a role model for our faculty and students, and represents the future of biomedical science and integrated health care. Her history mirrors our own in many profound ways, marked by dedication to discovery even in the midst of difficult times. Upon that history, her legacy guides the future of the University itself.

After 95 years of excellence in healthcare education, Rosalind Franklin University of Medicine and Science has only just begun to write its history. We hope you will join us in creating bold visions for an ambitious future.

To learn more about Dr. Rosalind Franklin and the University's dedication to her legacy, visit

[www.lifeindiscovery.com](http://www.lifeindiscovery.com).

## Mission

Chicago Medical School (CMS) at Rosalind Franklin University of Medicine and Science educates physicians and scientists dedicated to providing exemplary, compassionate patient care and excellence in scientific discovery within an interprofessional environment.

CMS strives to instill in every student the incumbent medical and scientific knowledge, skills, attitudes, and values that the field of medicine and society expect of a physician. The following measurable competencies and their associated objectives, our touchstones of excellence, reflect this overall goal:

- I. **Medical and Scientific Knowledge.** Demonstrate knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, and apply this knowledge in caring for patients.
- II. **Patient Care and Prevention.** Demonstrate patient care that is compassionate, appropriate, and effective for the promotion of health, prevention of illness, treatment of disease, and the end of life.
- III. **Professionalism and Self-Awareness.** Demonstrate a commitment to professional service, adherence to ethical principles, sensitivity to diverse patient populations, and awareness of one's own interests and vulnerabilities.
- IV. **Practice-Based, Life-Long Learning.** Demonstrate the ability to appraise and assimilate scientific evidence and methods to investigate, evaluate, and improve one's own patient care practices.
- V. **Systems-Based, Interprofessional Practice.** Demonstrate an awareness of and responsiveness to the larger context of health care and the ability to call on system resources and other healthcare professionals to provide optimal care.
- VI. **Interpersonal and Communication Skills.** Demonstrate effective understanding, information exchange, and teamwork with patients, their families, and other health professionals.

## Vision

The vision of the Chicago Medical School is to be an outstanding community-based medical school with excellence and innovation in medical education, scientific discovery and clinical care.

## Purpose

The U.S. Department of Education recognizes the Liaison Committee on Medical Education (LCME) for accreditation of programs of medical education leading to the MD in the United States. Accreditation is a process of quality assurance in post-secondary education that determines whether an institution or program meets established standards for function, structure, and performance. The accreditation process also fosters institutional and program improvement. It also is a prerequisite for eligibility of graduates to obtain medical licensure in most states, and for students to sit for U.S. Medical Licensure Examinations, and to obtain federal student loans.

## Equal Opportunity

It is the policy of Rosalind Franklin University of Medicine and Science not to discriminate on the basis of race, color, national origin, sex, sexual orientation, disability, age, religion, or veteran status in its programs and activities



including but not limited to recruitment, admissions and employment. Inquiries regarding this policy may be directed to the Executive Director of Student Affairs, 3333 Green Bay Road, North Chicago, IL 60064; 847-578-8351.

### **Accreditation**

Rosalind Franklin University of Medicine and Science receives its degree-granting authority from the Illinois Board of Higher Education and is accredited through the North Central Association of Colleges and Schools.



North Central Association of Colleges and Schools

Higher Learning Commission

30 North LaSalle Street, Suite 2400

Chicago, IL 60602-2504

800-621-7440

312-263-0456

CMS is fully accredited by the Liaison Committee on Medical Education.

### **Application Procedure**

Applicants for admission to the first-year class must be initiated through the American Medical College Application Services (AMCAS), sponsored by the Association of American Medical Colleges. Applications must be filled out and submitted online through the AMCAS Web site listed below. If you have any questions regarding your application, please contact AMCAS directly:

#### **AMCAS**

Section for Student Services

2501 M Street, N.W., Lobby 26

Washington, DC 20037-1300

[www.aamc.org](http://www.aamc.org)

202-828-0600

Designate Chicago Medical School on the drop-down list of medical schools provided in the AMCAS application. The deadline for receipt of applications at AMCAS is November 1<sup>st</sup>.

The MCAT (Medical College Admissions Test) is required for admission; Chicago Medical School will only accept MCAT scores that are no older than three years from the year you plan on matriculating. Application forms for the MCAT are available from your pre-medical advisor or by writing directly to:

#### **MCAT**

Program Office

P.O. Box 4056

Iowa City, Iowa 52243-4056

319-337-1357

Upon receipt of the AMCAS application, CMS will forward additional materials and instructions to you to complete the application. Applicants receiving an AMCAS fee waiver automatically receive a waiver of the CMS application fee.

### **Early Decision Plan**

Some applicants may wish to consider Chicago Medical School their primary choice; such candidates should consider the optional Early Decision Plan (EDP). The procedure allows applicants to request and receive a decision from their first-choice medical school by October 1, before seeking acceptance elsewhere. Applicants should notify AMCAS of their intention to participate in the EDP. All supporting credentials must be in the AMCAS office by August 1. If the student is accepted, he or she is committed to attend CMS. If the applicant is not accepted by the October 1 decision date, this person is then free to broaden their application activity to other schools. Ordinarily, students admitted through the EDP possess superior qualifications.

### **Admissions Policy**

The administration, faculty and the members of the Chicago Medical School Student Admissions Committee are committed to excellence and diversity in its student body. Diverse backgrounds, experiences, and perspectives among the student body help to ensure a dynamic, productive and positive learning experience. In seeking to achieve diversity, the admissions committee is instructed to consider a wide range of factors in evaluating applicants for admission, including, but not limited to, the following: demonstrated intellectual capacity, academic achievement, employment history, life experiences motivation, character, personality, commitment to public service, the extent to which the applicant has overcome educational and/or economic obstacles, and other indicators that the applicant can succeed in their medical studies and make a significant contribution to providing improved medical care to the local community and general public. Although the admissions committee neither requires nor recommends that an applicant's college education consist of a major in any specific discipline, it does consider a sound preparatory education in the basic sciences, plus a broad background in the liberal arts to be important factors in considering admission into medical school.

### **Admissions Requirements**

Applicants must complete a minimum of three full years of academic work at an accredited college or university prior to matriculation at CMS; most applicants enter with a baccalaureate degree. CMS does require all entering students to complete at least one academic year in each of the following subjects (including laboratory sections): 1) biology/zoology; 2) inorganic chemistry (including quantitative analysis); 3) organic chemistry; 4) physics. In addition, applicants are encouraged to take courses in mathematics (e.g., calculus, statistics), social sciences, English and the arts, because it is recognized that a physician should have a broad educational background. Also, all applicants must take and post their Medical College Admission Test scores. This test should be taken in the spring or fall of the year preceding anticipated entrance. The rigorous competition for admission into CMS means that applicants are sought whose scholastic performance places them in the upper third of their college class. However, high scholastic standing, per se, does not ensure admission into CMS. Strong emphasis is also placed on applicants' motivation, character, personality, and achievements. Applicants who have not done well in required courses are encouraged to pursue advanced-level courses related to those required courses.

## Admissions Committee Procedures

The CMS Student Admissions Committee is responsible for selecting candidates for the entering class and for advanced standing. The Admissions Committee is comprised of faculty members and CMS students. The application process commences when CMS receives the completed AMCAS application form. The applicant is then required to submit a minimum of three letters of recommendation from professors under whom he or she has studied, or a single composite recommendation from a preprofessional advisory committee. Such letters of recommendation must come directly from the author or the school. Under the Family Educational Rights and Privacy Act of 1974, applicants are required to either 1) waive their right of access to letters of recommendation, or 2) retain their right of access to letters submitted on their behalf. If an applicant retains the right to access the letters of recommendation, such access must be obtained through the former professor or committee which submitted the letter. All letters of recommendation obtained by CMS are treated as confidential. An applicant with an approved AMCAS application is also required to submit a Supplemental Application. Upon receipt of all required information, each application is screened to determine which applicants will be invited to CMS for a personal interview. No applicant is admitted without an interview. The applications of interviewed candidates will be reviewed from time to time, and favorable recommendations made to the Dean until the class is filled. The Dean of CMS has the power to accept or reject any recommendation made by the Committee. Applicants not accepted will be notified in writing. Those candidates offered admission must accept the School's offer of admission in writing within two weeks of the date of the letter offering them admission, and must simultaneously make a deposit of \$100 to hold the position offered to them. Those who do not do so will be deemed to have rejected CMS's offer of admission and the positions offered to them will then be offered to others. The deposit will be credited toward tuition upon matriculation, or will be refunded if the applicant notifies the School by letter, within the permitted time, of his or her desire to withdraw.

## Advanced Standing

Advanced standing is limited to filling places in the second- or third-year classes that have been vacated by attrition. It is anticipated that very few vacancies will be available in upcoming years because of the low attrition rate of CMS students. Students from other American medical schools and United States citizens attending foreign medical schools will be given priority consideration should any vacancies exist. Applications for transfer become available February 1, with the deadline being June 1.

## Non-Immigrant International Students

The Chicago Medical School is authorized under federal law to enroll non-immigrant international students. Information about appropriate certification of international students is available in the Office of Admissions.

## Academic Performance Standards and Their Measurement

### Grading

Grades in courses and clerkships at Chicago Medical School are determined on the basis of established standards of performance; a statistical distribution function for grades is not assumed. A pass/fail grading system is used for sophomore elective courses. All other courses and clerkships are graded on an A, B, C, F system. These grades are defined as follows:

A – High Achievement (4 quality points)

B – Above Average Achievement (3 quality points)

C – Average Achievement (2 quality points)

F – Fail (0 quality points)

A grade of *Incomplete* (I) is given when sufficient evaluation data have not yet been acquired and/or when the student has not yet met all of the requirements of the course or clerkship. An academic incomplete is given when a student elects not to take an examination or complete an assignment at the scheduled time without a valid excuse and prior approval of the Dean. If a student receives an *Incomplete* (I) grade, necessary coursework must be completed by the deadline indicated by the instructor. If coursework is not completed by the deadline, the grade of I becomes a grade of F.

All required and elective clerkships taught in the University-affiliated hospitals will show a letter grade. When taken in a non-affiliated hospital or medical school a Pass/Fail grade may be used.

### Performance Expectations

To meet the principal requirements for the MD degree, a student's performance must be evaluated as at least competent in each and every course and clerkship. In addition, the CMS student is expected to develop/maintain the standards of ethical integrity, professional judgment, and reliability in personal relationships essential to the competent, honest, responsible practice of medicine, as evidenced by specific acts within the medical student role. Failure to do so may result in probation or dismissal. The grade awarded in a clinically oriented course or clerkship reflects not only cognitive performance but also achievement of the six core competencies of Chicago Medical School. For clinical clerkships, performance on each of these factors is reported separately and is accompanied with a narrative description of the student's performance in the clerkship. A student must complete all requirements of the first two years of medical school and pass the USMLE Step 1 before starting any junior year clinical clerkships; this must be accomplished within three calendar years from the time of first matriculation. All requirements for graduation must be completed within 5-1/2 calendar years from the time of first matriculation.

A student may be dismissed upon failure to achieve satisfactory academic progress, which may include failure in more than two basic science courses or clinical clerkships, for twice failing a course of clerkship, for failing twelve or more weeks of senior electives, or for documented failure to develop/maintain acceptable standards of ethical integrity, professional judgment or reliability in personal relationships. A student may be dismissed for failure to meet the maximum time requirement set forth for completing the second, third and fourth years (see requirements for the MD degree).

Recommendations concerning advancement, graduation, dismissal and awards are made by the Student Evaluation, Promotion and Awards Committee (SEPAC). The voting committee is comprised of faculty members recommended by the Academic Assembly and two student members appointed by the Associated Dean for Student Affairs. The Associate Dean for Students in the School of Medicine represents students' interests before this committee.

Recommendations of SEPAC may be appealed if new evidence not available to this committee is to be presented, or if the committee recommends dismissal. An Appeals Board is comprised of five faculty members and two students, none of whom has been previously associated with the issue to be appealed. Recommendations of SEPAC and the Appeals Board are made to the Dean of the medical school for final decision.

## **Rules Governing Records, Leave, Tuition, Withdrawal and Transfer**

### **Student Records**

All documents and records pertaining to a student's admission and academic performance in the University are filed in the Office of the Registrar. The student has the right to inspect and to make copies of items in his or her file in the Registrar's Office on any regular working day. The Dean of the school, and the Associate Deans for Student Affairs and Curriculum also have access to these files. University faculty, committees, and other administrators may secure access to these files through the Registrar of the School. The University complies with the requirements of the Family Educational Rights and Privacy Act of 1974 as amended. Copies of University policy are available in the Office of the Registrar. The student counselor's records are confidential. No faculty, administrator, or other person may request or receive any information concerning a student from the student counselor. Similarly, records of the student Health Service and the financial aid counselor are available only to professionals in those departments.

The Registrar is authorized to supply transcripts of a student's grades earned at the University, but transcripts may be provided only with the permission of the student.

## Leave-of-Absence

Students at Chicago Medical School are expected to maintain continuity and due diligence in meeting the performance expected of them throughout their medical school career. In particular, they are expected to attend and participate fully in all course evaluations of their performance and in all clinical course and clerkship activities. A leave of absence is a temporary interruption of academic progress, granted for up to one year at a time, which does not compromise academic objectives determined by the academic program. Any withdrawal or leave of absence must be approved by the appropriate granting authority.

In general, a Leave-of-Absence may be granted to a CMS student for the purpose of reaching a specific goal that is directly related to the student's medical career. This goal is to be pursued according to a specific plan of action, to be submitted for approval along with the petition for Leave-of-Absence. Also, students in good academic standing may be granted a leave for a worthwhile purpose not directly related to medicine.

Leaves-of-Absence requested for reasons of health, maternity, or finances will be granted as a matter of course. Upon resolution of the conditions for which the Leave-of-Absence was granted, the student must make a petition to be readmitted to the same academic standing he or she maintained when the leave began.

Approval for a leave of absence or withdrawal requires the following:

1. Complete the Leave of Absence Request form

A letter which details the circumstances of the request must accompany the Leave of Absence Request form. Leave of Absence Request forms are available from a student's academic advisor, the Office of Student Affairs, or the Registrar's Office. The form must be submitted a student's academic advisor.

2. Meet with Your Academic Department

Students are required to obtain the approval of their academic department before entering a leave of absence. They will be counseled and guided through the leave of absence process. Students should initiate this process well in advance, ideally at the end or beginning of a quarter.

3. Meet with Student Service Departments

This is a vital step to ensure that students fully understand the impact the change in student status will have on financial aid, student billing account, housing, health insurance, and other issues. It is strongly recommended that students receive clearance from student service offices before a leave is approved.

**Financial Aid Office:** All student loan borrowers entering leave of absence should meet with the Financial Aid Office to discuss the financial implications. Students entering a leave of six months or more will be required to complete a financial aid exit interview.

**Student Housing:** Residents of student housing you will need to meet with the housing office to discuss their housing contract.

**Registrar's Office:** Students should meet with the Registrar's Office to withdraw from courses and update their address.

Business Office: Discuss your billing.

4. Receive final approval from the Academic Department

A student's leave of absence is not approved without the signature of their academic department.

5. Receive Final Billing and Institutional Loan Paperwork

Finalize billing and institutional loan requirements with the Business Office.

Student Responsibilities

- Update current address with Registrar and student loan servicers.
- Notify the Business Office in writing to cancel your health insurance and receive a refund of prepaid premiums (if necessary).
- Keep student loan accounts in good standing by entering repayment or filing timely deferments if necessary.
- Contact academic department prior to end of the leave of absence to confirm intent to return.
- Contact the Financial Aid Office prior to the end of the leave of absence to ensure your financial aid applications are complete.
- Students on a leave of absence are not eligible for additional financial aid funds and students should plan accordingly.
- If a student requires an extension of their leave of absence, they must contact their academic department and complete a new Leave of Absence Request form.
- Failure to re-enroll by the end of the leave of absence will result in a withdrawal from the program.

## Tuition and Other Educational Expenses

The following table shows the educational expenses for entering students at the Chicago Medical School effective for the 2007-2008 academic year. Budgets for the 2008-2009 academic year will be finalized in May 2008.

### Direct Educational Expenses

Tuition (Annually) . . . . .	\$39,312.00
Student Council Fee, Freshmen . . . . .	160.00
Disability Fee (varies) . . . . .	(approximate) 250.00
Health Insurance*...The University offers several health insurance plans. Contact the Business Office at 847-578-3279 for details.	
Books & Supplies (Estimated-annual) . . . . .	2,656.00
Estimated Additional Educational Expenses. . .During Academic Year	
National Board Fees, Part I, Sophomores . . . . .	480.00
National Board Fees, Part II, Seniors . . . . .	1,505.00

\*Required of all CMS students.

## Tuition and Fee Payment Policy

All students will pay full tuition for 14 quarters.

Tuition and fees are due on the first day of each term according to the University's academic calendar, regardless of when classes actually start. Beginning on the first day of each term, a penalty fee of 7% and an interest fee calculated on a daily basis at the rate of 18% per annum is assessed to each student's account which is not yet paid.

Failure to pay tuition and fees in full by the end of the academic term will result in a student not being allowed to register for the subsequent term.

When a student is authorized to take an altered schedule or reduced course load because of academic difficulties, personal health reasons, or for other reasons, full tuition will be charged.

## Refunds & Withdrawals

If a student withdraws from the program before the end of the first week of classes, 100% refund of tuition is made. When withdrawal is made before the end of the second week, the refund is 75%; before the end of the third week, 50%; before the end of the fourth week, 25%. After that time, no refund is granted.



## Health Care and Health Insurance

All students must have a health insurance policy in effect while enrolled in the University. Under the University's health insurance contract, students may purchase group hospitalization and medical care insurance for themselves and their families. Coverage under this plan is comprehensive. It is important to note that those individuals who choose to be covered by a plan other than the school's health insurance must present proof of current coverage at the time of registration. Also, health maintenance contracts (HMOs) will not be honored unless affiliated with the Rosalind Franklin University Health System.

Students should be vaccinated for tetanus/diphtheria, rubella (German measles), rubeola (measles), mumps, varicella (chicken pox), and polio. A tuberculosis skin test (PPD) within six months prior to matriculation is required. Hepatitis B vaccination is required (or at least started) prior to matriculation.

## Disability Insurance

All medical students presently enrolled at RFUMS are covered by a disability insurance policy. The policy, offered at group rates, yet on an individual basis, is designed to provide medical students with excellent coverage at reasonable rates. As with requirements for health insurance, the cost of this disability insurance program is the responsibility of each individual student. Cost is determined by age and will differ for individuals based on this fact. All students must be part of the disability group insurance.

## Requirements for the MD Degree

To be awarded the MD degree from Chicago Medical School, a student must accomplish the following:

- Pass courses in Anatomy, Biochemistry, Clinical Epidemiology, Embryology, Genetics, Histology, Essentials of Clinical Reasoning, Medical Ethics, Molecular and Cell Biology, Neuroscience, HMTD 500, and Physiology to complete the first academic year.
- Pass courses in Essentials of Clinical Reasoning, Clinical Neuroscience, Microbiology, Pathology, Pharmacology, Clinical Skills and Preventive Medicine to complete the second academic year. Students must complete 3 credits of sophomore electives and must pass the United States Medical Licensure Examination (USMLE) Step 1 to complete the second year of the curriculum.
- Pass clinical clerkships in Ambulatory Care Emergency Medicine, Family Medicine, Medicine, Neurology, Obstetrics/Gynecology, Pediatrics, Psychiatry and Surgery to complete the required basic clerkships.
- Pass a required Sub-Internship and 32 weeks of approved electives; Students must also pass the United States Medical Licensure Examination (USMLE) Step 2 CK and sit for step 2 CS to graduate.
- Perform all student functions in a professional and ethical manner.
- Meet the Technical Standards of the University as delineated below.
- Complete all requirements in no more than 5-1/2 years from first matriculation.

## Students with Disabilities

It is the intent of Rosalind Franklin University Medicine and Science and Chicago Medical School to comply with applicable law concerning students with disabilities; including Title IX of the 1972 Education Amendments, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. These acts prohibit discrimination against individuals with disabilities by mandating the provision of reasonable accommodations to make programs and activities accessible to otherwise qualified individuals. These statutes recognize that there may be technical standards of behavior that must be met in the pursuit of a given profession or training. The Chicago Medical School has determined a set of Technical Standards of behavior, which it considers necessary for the candidate for the MD degree. These Technical Standards are listed below. Inquiries about the Medical School policies on disabilities should be directed to the Americans with Disabilities Act (ADA) Coordinator in the Office for Student Affairs.

### Technical Standards

A candidate for the MD degree must possess abilities and skills which include those that are observational, communicational, motor, intellectual-conceptual (integrative and quantitative), and behavioral and social. The use of a trained intermediary is not acceptable in many clinical situations in that it implies that a candidate's judgment must be mediated by someone else's power of selection and observation.

#### I. Observation:

The candidate must be able to acquire a defined level of required information as presented through demonstrations and experiences in the basic sciences, including but not limited to information through physiologic and pharmacological demonstrations in animals, microbiological cultures and microscopic images of microorganisms and tissues in normal and pathologic states. Furthermore, a candidate must be able to:

- Observe a patient accurately, at a distance, and close at hand, with or without standard medical instrumentation, to acquire information from written documents, and to visualize information as presented in images from paper, films, slides or video.
- Interpret X-ray and other graphic images, and digital or analog representations of physiologic phenomenon (such as EKGs) with or without the use of assistive devices.

Such observation and information acquisition necessitates the functional use of visual, auditory and somatic sensation while being enhanced by the functional use of other sensory modalities. In any case where a candidate's ability to observe or acquire information through these sensory modalities is compromised, the candidate must demonstrate alternate means and/or abilities to acquire and demonstrate the essential information conveyed in this fashion. If the alternatives are acceptable, it is expected that obtaining and using such alternate means and/or abilities shall be the responsibility of the student. Costs of necessary accommodations should be reasonable and will be properly borne by the University when not the responsibility of the student or otherwise funded.

## II. Communication:

A candidate must be able to speak, to hear and to observe patients by sight in order to elicit information, describe changes in mood, activity and posture, and perceive nonverbal communications. A candidate must be able to communicate effectively and sensitively with patients and their families. Communication includes speech and writing. The candidate must be able to communicate effectively and efficiently in oral and written form with all members of the healthcare team.

## III. Motor:

It is required that a candidate possess the motor skills necessary to directly perform palpation, percussion, auscultation and other diagnostic and therapeutic maneuvers, basic laboratory tests and diagnostic and therapeutic procedures. The candidate must be able to execute motor movements reasonably required to provide general and emergency medical care, such as airway management, placement of intravenous catheters, cardiopulmonary resuscitation, application of pressure to control bleeding, suturing of wounds and the performance of simple obstetrical maneuvers. Such actions require coordination of both gross and fine muscular movements, equilibrium and functional use of the senses of touch and vision.

## IV. Intellectual-Conceptual (Integrative and Quantitative) Abilities:

The candidate must be able to measure, calculate, reason, analyze, integrate and synthesize. In addition, the candidate must be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures. Problem solving, the critical skill demanded of physicians, requires all of these intellectual abilities. The candidate must be able to perform these problem-solving skills in a timely fashion.

## V. Behavioral and Social Attributes:

The candidate must possess the emotional health required for full utilization of his or her intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the diagnosis and care of patients, and the development of mature, sensitive, and effective relationships with patients. The candidate must be able to tolerate physically taxing workloads and to function effectively under stress. He or she must be able to adapt to changing environments, to display flexibility, and to learn to function in the face of uncertainties inherent in the clinical problems of patients. Compassion, integrity, concern for others, interpersonal skills, interest and motivation are all personal qualities that will be assessed during the admissions and educational process.

## Requirements for the Combined MD/MS Degree

The combined degree program leading to the MD/MS degree is designed for select students interested in an in-depth study of one of the basic medical sciences combined with research training. The MS degree may be earned by at least one year of full-time graduate study plus graduate study during unscheduled or elective periods of the Medical School curriculum. In the latter case, the student will spend selected periods of study as a full-time graduate student. This plan may permit receipt of the MS and MD degree at the same time.

The MS degree may be obtained in the disciplines encompassed in the Departments of Biochemistry and Molecular Biology, Cell Biology and Anatomy, Cellular and Molecular Pharmacology, Microbiology and Immunology, Neuroscience, Pathology, and Biophysics.

Application for the MD/MS program is made after acceptance into Medical School. While preference for admission to this program will be given to students with a strong background in the natural sciences, applicants with pertinent research experience should not hesitate to express their interests..

### **Requirements for the Combined MD/PhD Degree**

The combined MD/PhD program is designed for selected students who are interested in a research or academic career and whose undergraduate education has placed major emphasis on science. The major purpose of the program is to prepare medical scientists skilled in the study of modern biology as members of clinical and pre-clinical faculties of medicine or as clinical investigators.

The combined degree program requires that the student devote four to five years in a full-time graduate didactic and research program before entering the medical school. The combined program requires a minimum of six years of full-time study for its completion.

### **Master of Science Programs in Clinically Oriented Subjects for Medical Students**

The Chicago Medical School at Rosalind Franklin University of Medicine and Science offers selected medical students the opportunity to earn the Doctor of Medicine degree and a clinically oriented Master of Science degree. The following program is offered:

Pathology

The Master of Science course of study is provided during the four year medical school curriculum. There is no additional tuition charge for medical students selected for the MD and clinically oriented MS Program.

### **MD with Distinction in Research Program**

This program offers students with a special interest in research the opportunity to pursue a project in depth in either basic or clinical sciences, under the direction of a research mentor. Students will be required to submit a written project proposal (with the aid of the mentor), to identify a faculty committee (other than the mentor) to oversee the student's progress, and to submit a final project report with data of publishable quality. Upon satisfactory completion, students receive a certificate and recognition on Awards Day, and a notation will appear on the student's transcript.

## Educational Objectives

The objectives of the Chicago Medical School's educational program were redefined in fall of 2004, with all objectives aligned with the six measurable competencies.

- I. **Medical and Scientific Knowledge.** Demonstrate knowledge about established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, and apply this knowledge in caring for ill and healthy patients of all ages. Specifically, the student must demonstrate:
  1. Knowledge of the normal structure and function of the body, from individual organ systems to the integrated whole, to include developmental and aging processes.
  2. Knowledge of the molecular, biochemical, and cellular mechanisms that underlie body function.
  3. Knowledge of genetic, developmental, metabolic, toxic, microbiological, psychological, immunologic, autoimmune, neoplastic, degenerative, and traumatic causes of illness.
  4. Knowledge of the altered structure and function (pathology and pathophysiology) of the body and its major organ systems.
  5. Understanding the scientific method and its application in establishing the cause of disease and the efficacy of traditional and nontraditional therapies.
  6. Knowledge of the economic, psychological, social, environmental, and cultural determinants of health and illness.
  7. Knowledge of the epidemiology of common illnesses within defined populations, the systematic approaches used in reducing the incidence and prevalence, as well as the prevention of those illnesses within cultural and socioeconomic context.
  8. Knowledge of the principles of pharmacology and therapeutic decision-making.
  9. Knowledge of the principles of emerging disciplines (e.g., genomics, proteomics, and bioinformatics).
  10. Knowledge of the scientific principles underlying diagnostic methodologies, clinical, laboratory, pathologic, and imaging, and the ability to use them appropriately.

**II. Patient Care and Prevention.** Demonstrate patient-centered care that is compassionate, appropriate, and effective for the promotion of health, quality of life, prevention of illness, treatment of disease, and the end of life. Specifically, students must:

1. Treat patients with respect for their privacy, dignity, individual integrity, and culture.
2. Obtain an accurate and complete medical, social, and occupational history that includes issues specific to age, gender, culture, and socioeconomic status.
3. Perform a complete and symptom-focused examination, as appropriate, including a mental status examination.
4. Perform routine technical procedures.
5. Interpret the results of commonly used diagnostic procedures.
6. Demonstrate appropriate deductive reasoning in solving clinical problems.
7. Construct appropriate diagnostic and therapeutic strategies for patients with common acute and chronic conditions.
8. Demonstrate shared decision-making model of patient care.
9. Demonstrate the ability to use preventive medical strategies in patient care in conjunction with other healthcare professionals.
10. Recognize patients with life-threatening conditions and institute appropriate initial therapy.
11. Recognize and outline an initial course of management for patients with serious conditions requiring critical care.
12. Demonstrate knowledge of the mechanisms and modalities used to relieve pain and suffering.
13. Identify factors that place individuals at risk for disease or injury, select appropriate tests for detecting specific diseases or early stages of disease, and determine strategies for responding appropriately.

**III. Professionalism and Self-Awareness.** Demonstrate a commitment to professional service, adherence to ethical principles, sensitivity to diverse patient populations, and awareness of one's own interests and vulnerabilities. Specifically, students must:

1. Apply the theories and principles that govern ethical decision-making and address the major ethical dilemmas in medicine, particularly those that arise at the beginning and end of life.
2. Recognize one's own biases in ethical decision-making.
3. Adhere to principles of confidentiality, scientific and academic integrity, and informed consent.
4. Demonstrate respect, compassion, integrity, and altruism in relationships with patients, families, and colleagues.
5. Advocate the interests of one's patients over oneself.

6. Understand the financial, organizational, and other conflicts of interest inherent in the practice of medicine.
7. Recognize and accept limitations to one's knowledge and clinical skills and strive continuously to improve them, and seek appropriate assistance when necessary.
8. Demonstrate a commitment to serve communities and society, and care for members of traditionally underserved populations.
9. Demonstrate sensitivity and responsiveness to the gender, age, culture, religion, sexual orientation, socioeconomic status, beliefs, behaviors, and disabilities of patients and professional colleagues, including awareness of one's own cultural perspective.
10. Demonstrate awareness of one's own personal vulnerabilities, seek help and advice when needed, and develop appropriate coping strategies.
11. Seek and respond appropriately to performance feedback.
12. Maintain effective balance of personal and professional commitments.

**IV. Practice-Based, Life-Long Learning.** Demonstrate the ability to appraise and assimilate scientific evidence to evaluate and improve patient care practices. Specifically, students must:

1. Demonstrate knowledge of the principles and methodologies of continuous learning of relevant scientific and clinical advances, educating oneself and one's patients, and making decisions relevant to the care of individuals and populations.
2. Search for new evidence regarding diagnosis, prognosis, and treatment of specific diseases, and integrate this knowledge into patient care.
3. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness.
4. Use electronic databases and other resources to access, manage, and utilize biomedical information for solving clinical problems.
5. Develop and maintain a willingness to self-assess, learn from error, and use errors to improve processes of care.
6. Apply Evidence-Based Medicine to locate, appraise, and assimilate "best practices" in relation to patients' health problems.

**V. Systems-Based, Interprofessional Practice.** Demonstrate an awareness of and responsiveness to the larger context of health care and be able to call on system resources and other healthcare professionals to provide optimal care. Specifically, students must:

1. Cooperate, collaborate, communicate, and work in teams to ensure that care is continuous and reliable; acknowledge and respect the roles of other health professionals in providing needed services to individual patients and communities.
2. Understand the health needs of a community and population and how they are prioritized.
3. Understand the limitations and opportunities inherent in various practice types and delivery systems, including methods of controlling healthcare costs and allocating resources so that the quality of care is not compromised.
4. Understand the importance of evidence-based, cost-benefit analyses for improving the prevention, diagnosis, and management of diseases.
5. Advocate for quality of care and assist individual patients in dealing effectively with complex healthcare systems.
6. Demonstrate knowledge of practice management.
7. Identify and address systematic practices that increase the risk for patients.

**VI. Interpersonal and Communication Skills.** Demonstrate effective understanding, information exchange, and teamwork with patients, their families, and other health professionals. Specifically, students must:

1. Demonstrate the ability to sustain therapeutic, ethically sound, respectful professional relationships with patients, their families, and colleagues.
2. Use effective listening, questioning, nonverbal, and writing skills to communicate with patients, families, and professional associates, seeking assistance when necessary (e.g., call an interpreter).
3. Maintain comprehensive, timely, and legible medical records.
4. Work effectively with others as a member of a healthcare team or other professional group.
5. Demonstrate techniques of conflict-management.
6. Demonstrate effective communication of scientific and medical information to educate patients and their families, as well as colleagues.
7. Be able to communicate with patients and their families about all aspects of their well-being.



## Professional Behavior Policies

All students at Rosalind Franklin University are expected to exhibit professional, responsible and ethical behavior. Students should display this behavior as students in the University, as healthcare providers in the clinical setting and as researchers in the laboratory or clinic.

All students should, therefore, possess the highest degree of personal integrity and be able to reason about ethical issues in their professional life. Students are expected to treat patients and research subjects with respect, compassion and sincerity; irrespective of race, color, creed, ethnic origin, religion, disability, gender, sexual orientation, or socio-economic class, and to maintain strict confidentiality. Students are expected to be honest and trustworthy, to respect the property of others, and to follow the code of professional ethics appropriate to their discipline.

Similarly students have a right to work and study in an environment free from racial, sexual, or other form of harassment or abuse. Sexual harassment is defined here to be any deliberate or repeated unsolicited and unwelcome sexual behavior which affects the student's opportunity for academic success or creates an intimidating, hostile, or offensive environment. This includes unwelcome sexual advances, favoritism based upon gender, sexist jokes or slurs, the exchange of rewards for sexual favors, and malicious gossip or rumors. Sexual harassment also encompasses the use of sexist teaching materials, unless this information is presented in the context of a faculty critique (ie., for purposes of criticism). Any faculty, staff member, or student who uses implicit or explicit sexual behavior to control, influence or affect the career or working environment of a student is engaging in sexual harassment.

Similarly, students should expect to be treated with respect as professionals in training, free of harassment or abuse. Harassment based upon color, creed, ethnic group, race, religion, disability, sexual preference or other factors is unacceptable.

University policies on sexual harassment are available in writing from the Office for Student Affairs or on the Rosalind Franklin University Web site

[www.rosalindfranklin.edu/administration/FacultyStaff/OOC/EO/tabid/1895/Default.aspx](http://www.rosalindfranklin.edu/administration/FacultyStaff/OOC/EO/tabid/1895/Default.aspx). Students with concerns or questions about issues of professional behavior are encouraged to contact the Senior Associate Dean for Student Affairs and Medical Education. In addition, the University, under the auspices of the Equal opportunity Oversight Committee, has established a group of First Response Intermediaries, specially trained and available to handle issues or complaints about sexual harassment. A list of First Response Intermediaries is available from the Offices for Student Affairs and Educational Affairs and from the Rosalind Franklin University Web site

[www.rosalindfranklin.edu/administration/FacultyStaff/OOC/EO/tabid/1895/Default.aspx](http://www.rosalindfranklin.edu/administration/FacultyStaff/OOC/EO/tabid/1895/Default.aspx)

## Teaching Hospital Affiliations

**Advocate Christ Medical Center** is a 648-bed, non-for-profit teaching, research and referral medical center in Oak Lawn, IL. It also is home to Advocate Hope Children's Hospital, a free standing facility which is one of the most comprehensive providers of pediatric care in the state. The hospital provides 80,000 emergency room visits and 335,356 outpatient visits per year, admits 38,877 patients per year and has an average occupancy rate of 88% with an average length of stay of 5.2 days. The medical center is a leader in cardiology, pediatrics, surgical services, oncology, women's services and emergency medicine.

**Advocate Illinois Masonic Medical Center** is a 309-bed teaching hospital located in the Lakeview neighborhood on the north side of Chicago. The hospital has served the North Side community of Chicago for more than 100 years. The hospital provides 38,534 emergency room visits and 157,257 outpatient visits per year, admits 18,981 patients per year and has an average occupancy rate of 74% with an average length of stay of 4.95 days. As a level I trauma center, the hospital is located just east of the Edens Expressway (I-94), close to Wrigley Field.

**Advocate Lutheran General Hospital** is a 582-bed teaching, research and referral hospital, and a Level I trauma center. The hospital provides 57,400 emergency room visits and 294,665 outpatient visits per year, and admits 29,241 patients per year and has an average occupancy rate of 69% with an average length of stay of 5.13 days. It also is home to Advocate Lutheran General Children's Hospital. Located in Park Ridge, IL, the hospital serves the north and northwest suburbs of Chicago.

**John H. Stroger, Jr., Hospital of Cook County** is a 460-bed non-for-profit teaching and research medical center, caring for the underserved residents of Cook County. Located in downtown Chicago, the Hospital serves as the hub for the Cook County Bureau of Health Services' most serious and complicated medical services, providing 844,638 outpatient visits and admitting 23,511 patients per year with an average length of stay of 5.19 days. It also enhances the delivery of specialty and sub-specialty care for the entire Bureau network.

**Mount Sinai Hospital** is a 432-bed teaching, research and tertiary care facility which is a part of the Sinai Health System, along with Schwab Rehabilitation Hospital, Sinai Community Institute, Sinai Medical Group and Sinai Health First. The hospital provides 46,889 emergency room visits and 1,084,682 outpatient visits per year and admits 21,064 patients per year with an average length of stay of 3.9 days. It is located in downtown Chicago just west of the Kennedy Expressway (I-90/94).

**North Chicago VA Medical Center** is a 150-bed teaching hospital located on Green Bay Road next to the Chicago Medical School at RFUMS. NCVAMC serves as the long-term care referral center for this area's medical and mental health patients with 204 nursing home care beds, a 60-bed domiciliary for homeless veterans, and 89 beds for alcohol and drug abuse treatment. The hospital provides 14,638 emergency room visits, 223,433 outpatient visits and admits 1,941 patients per year with an average stay of 7 days. The Department of Veterans Affairs (VA) and the Department of Defense (DoD) have recently expanded their cooperative efforts in metropolitan Chicago with an agreement to coordinate healthcare operations in the North Chicago-Great Lakes areas for a federal hospital. The integration of the NCVAMC with the Great Lakes Naval Medical Center will involve all inpatient and emergency care services. The integration will be completed in 2010 when all clinical services are fully integrated in the new Federal HealthCare Medical Center.

## Continuing Medical Education

Continuing medical education is considered an integral part of the continuum of medical education in the School and in the life-long process of education of the physician. Since 1974, the Medical School has sought to participated in this learning endeavor through the Office of Clinical Affairs. The objectives of this program are to:

1. Provide high-quality educational programs for our alumni as well as physicians of the local, regional or national community based on identified learning needs.
2. Encourage faculty to utilize new program formats to improve teaching techniques and to expand opportunities for learning based on learners' needs.
3. Provide a forum for school and community-based physicians to identify as well as to explore solutions to health problems.
4. Apply the results of research and methodology of critical assessment of new data to the needs of the community-based physician.

Each year, about 30 symposia on a wide variety of topics are sponsored by the office in conjunction with the school departments. About 2,500 registrants attend these courses annually and receive more than 150 hours of instruction. In addition, each month 40 to 50 conferences, grand rounds and seminars are sponsored by the CME office on campus and at affiliated hospitals.

The education program is fully accredited by the Accreditation Council for Continuing Medical Education and provides appropriate credit for the Physician's Recognition Award of the American Medical Association. Credit is also applicable for state medical licensure.

## Residency Programs

The Chicago Medical School offers accredited residency and fellowship training programs in major medical specialties and subspecialties. More information can be obtained from the appropriate department chair or from the Senior Associate Dean for Clinical Affairs.

## Financial Assistance

The Financial Aid Office at Rosalind Franklin University of Medicine and Science (RFUMS) is committed to helping students secure the funding necessary to realize their educational goals. Financial Aid is awarded to students in the form of loans, work-study, and scholarships.

To apply for financial aid, students must complete an annual financial aid application, which is available on the Financial Aid Office website. Additionally, students must complete a Free Application for Federal Student Aid (FAFSA) and use the school code 001659. FAFSA results are used to assess student need, which is used in the awarding of subsidized Federal loans.

A brief description of available aid sources are listed below. Students needing additional information may contact the RFUMS Financial Aid Office by calling (847) 578-3217 or via e-mail at [financial.aid@rosalindfranklin.edu](mailto:financial.aid@rosalindfranklin.edu).

A brief description of available aid sources are listed below. Students needing additional information may contact the RFUMS Financial Aid Office, 3333 Green Bay Road, North Chicago, Illinois 60064, 847-578-3217.

### **Federal Work Study Program**

The Federal Work Study Program provides funds for part-time work opportunities within the University or organizations serving the public interest for students (full-time, part-time, independent study and vacation periods) in a variety of employment situations. The students may serve as a tutor, teaching or research assistant, clerk or secretary, library aide, information technology aide, tour guide, or mathematic or reading literacy tutor at the elementary school level, etc. Positions are posted on a Work-Study bulletin board and are also available by contacting the Financial Aid Office.

Notice of available positions are posted and distributed. Students approved for Federal financial aid are eligible for the Federal Work Study Program. Employment at non-profit or for-profit organizations serving the public interest may be eligible for subsidy of student employees. Students interested in part-time employment should submit a Job Application to the Federal Work Study Program in the Financial Aid Office. Student wages will range from \$8 to \$20 per hour depending on job classification.

### **CMS Alumni Scholarships and Trustee Merit Scholarships**

The University awards a select number of scholarships for Chicago Medical School students. The Trustee merit and CMS Alumni Scholarships are highly selective and are made possible through the generous support of the University's Board of Trustees and Chicago Medical School alumni.

### **Federal Stafford Loan**

This program includes both the Federal Subsidized Stafford loan and the Federal Unsubsidized Stafford loan program. The interest rate is fixed at 6.8%. Students may borrow up to \$8,500 per year from the Subsidized Stafford loan program, provided the student meets the need-based eligibility requirements based on the FAFSA application. The Subsidized Stafford loan program maximum borrowing limit is \$65,500. During enrollment in school and grace, the government pays the interest on this loan. Once a student enters repayment, interest will begin to accrue.

The Unsubsidized Stafford loan program is provided to assist with the student's borrowing needs. Interest begins to accrue on this loan as disbursements are made. The student may elect to pay the interest as it accrues, or may defer the interest while in school. The loan accrues simple interest while in school and will capitalize upon graduation.

The maximum borrowing limit for the Stafford loan program is \$224,000. Repayment extends up to ten years. Consolidation options are available as well as borrower benefits.

## Grad PLUS Loans

Graduate and medical student are eligible to borrow funds through the Federal Grad PLUS program. Grad PLUS loans require annual credit approval and have an interest rate fixed at 8.5%. Interest begins to accrue on this loan as soon as the loan is disbursed. The student may elect to pay the interest as it accrues, or may defer the interest while in school. The loan accrues simple interest while in school and will capitalize upon graduation.

## Alternative Loan Programs

Students may choose to borrow funds through an alternative loan program, an alternative to using Federal sources. Private loan programs are often utilized by international or Canadian students who are not eligible for Federal funds. Students may borrow up to the cost of education less other financial aid provided the student meets the lenders established credit criteria. Interest rates vary quarterly; loans accrue interest during school; residency deferment option available.

## Loan for Disadvantaged Students

The government provides federal funds to eligible medical schools to provide long-term, low-interest loans to students from a disadvantaged background. Full disclosure of financial information from the student's family must be provided.

## Federal Perkins Loan

The Perkins Loan is a federal program to provide need-based, low-interest educational loans for those attending graduate and professional school. The interest rate is 5% during repayment and interest does not accrue during deferment. Allocations of the Perkins are based on the availability of funds and are awarded by the institution.

## Private CMS Scholarships and Loans

Through the efforts of several CMS benefactors, a limited number of direct gift awards and a restricted amount of loan funds are made available to medical students experiencing extreme financial need. Amounts vary according to need and the availability of funds.

## Armed Forces Health Professions Scholarships

This program provides financial assistance to medical students in exchange for active duty service in the Armed Forces (Air Force, Army, Navy). One year of service as a medical officer is required for each year of financial support, with a minimum of 3 years of service. The Armed Forces pays full tuition, fees, books, supplies, equipment, and a monthly stipend for living expenses. Army (414) 476-6622, Navy (847) 688-7100, ext. 165, Air Force (312) 922-2923.

## National Health Service Corps Scholarship

This competitive program provides scholarship funds to medical students who agree to practice medicine in a high priority health manpower shortage area, as assigned by the NHSC. The minimum service obligation is two years. The scholarship provides for payment of tuition, required fees, and a monthly living expense stipend. For additional information on NHSC Scholarship, contact the Bureau of Health Professions at 1-800-221-9393.

## Student Services

The University provides its students with a full range of services, which include financial aid counseling, academic counseling and tutoring, ambulatory acute health care and personal and family counseling.

### Office for Student Affairs

Throughout the student's medical education, the Office for Student Affairs provides resources, programs, and support to ensure a smooth progression through medical school and transition to residency. From orientation and the white coat ceremony to Senior Awards Day and graduation, the Office oversees students' academic progress and professional development.

### The Office for Medical Curriculum

The Office for Medical Curriculum designs, schedules, and evaluates the CMS curriculum. Working with the Educational Affairs Committee of faculty and students, this office implements the CMS curriculum, schedules classes, gathers student and faculty evaluations, and analyzes student performance against national standards. The Office for Medical Curriculum values the coordination and integration of all the curricular elements.

The Office for Medical Curriculum also manages several interdisciplinary courses in the CMS curriculum, including first-year courses in Epidemiology and Medical Ethics and several Sophomore and Senior Elective courses.

### Sophomore Elective Courses

#### MCUR 615 Clinical Exposure Program and

#### MCUR 600 Clinical Exposure Program, Part 2

In this elective, students will be assigned a preceptor in a particular specialty in which they are interested. The student acts as an observer of the activities of the clinical situation in which their preceptor works, whether hospital, clinic, ambulatory or other. This elective provides an experience that focuses on the doctor-patient relationship: how it works, what the physician does to make it work, and what sensitivities must be observed to make for a strong relationship. The preceptor can help students understand the realities of the clinical experience in today's healthcare environment. Students will learn some of the subtleties involved in the doctor-patient relationship as the student observes the day-to-day practice of their preceptor. Students will gain experience interacting with actual patients and their families as well as with other physicians, members of the healthcare team, and the medical office staff.

#### MCUR 601 Medical Spanish

This course is designed for healthcare personnel who want to learn key words and phrases that will help them communicate effectively with Spanish-speaking patients in specific medical situations. Topics covered include: 1) identification of body parts; 2) inquiring about location and types of pain; 3) giving instructions for medications and treatment; 4) making requests of a patient during a physical examination; 5) identifying useful emergency room words and phrases; 6) inquiring about present and past illnesses; and 7) asking key questions about pregnancy. Students will learn the essential grammar needed to communicate in the aforementioned



situations. Pertinent cultural behaviors will be addressed. Previous knowledge of Spanish (two years minimum) required. Not recommended for students who are already fluent in Spanish.

#### **MCUR 602 Bioethics and the Law**

Students will gain understanding of how, and to what extent, the law addresses ethical dilemmas in the healthcare environment by examining specific laws and their applications. Online discussions, in-class sessions and a final exam are components of this elective.

#### **MCUR 603 Medical Teaching and Leadership Elective**

The CMS Medical Teaching and Leadership Elective is an intense week-long workshop with the goal of improving students' ability to give effective presentations during their clinical years, as future residents, and as future faculty. The retreat stresses small group sessions and activities to explore seven aspects of adult learning and incorporate these fundamentals into their presentations. During the week, participants will be asked to choose, prepare, and present 2-3 topics to small groups comprised of their M2 and M4 peers. The presentations will be digitally recorded for the purpose of self-evaluation, and each presentation will be followed by feedback sessions moderated by faculty preceptors. The feedback sessions will emphasize the newly introduced fundamentals of adult learning. Two students will be charged with organizing the retreat each year. Participants will have the responsibilities of being present at all sessions and contributing to the learning experiences of their peers. Two participants from a previous year will be given the option to become the student coordinators of future retreats.

#### **MCUR 605 Academic Peer Teaching**

This elective will give the peer tutor/teacher the opportunity to help first-year students improve their learning skills. It is intended to provide students with academic assistance from a peer. The tutor will benefit from the experience by gaining a greater conceptual understanding of the material as he or she explains it to others and by learning about methods and principles of education that enhance learning. The student will benefit from the experience of a peer who has done well in the course and can help him or her think about and integrate concepts in a useful way. The peer tutoring process is a powerful strategy for promoting the development of higher-level thinking: peers are less threatening; cognitive development and socialization are similar; and identification with the peer leads to acceptance and imitation of effective learning strategies modeled by the peer tutor.

After the training session, students will either be assigned to work one-on-one or in small group review sessions held at pre-determined times for specific first-year course material. The peer tutor's primary role will be to engage the student in active inquiry about the subject matter being reviewed. The first session will involve training and discussion about the appropriate facilitation skills, how to effectively communicate the material, when to stop and listen, and how to enhance learning. Additional sessions will involve discussion and preparation of tutoring material and how to maximize its usefulness. Specific skills to be acquired include learning how to ask higher-order questions, teaching group learning skills, and practicing helping behaviors.

#### **MCUR 607 Clinical Experience in a Developing Country**

Students will complete at least 90 hours of exposure during the summer to clinical and cultural practices in a developing country. Under the direction of a physician mentor, the student will take and observe histories, exams

and medical/surgical practices. The hospital/physician mentor must come from a certified list maintained by the Office of Student Affairs. Students must submit a short summary of their experiences and an evaluation of their program within the first week of the following academic year.

## **Senior Elective Courses**

### **MCUR 800 Online Clinical Ethics**

This elective will provide interested medical students with an opportunity to develop a wide range of knowledge related to clinical ethics, including the use of ethical consultants in clinical practice. This elective is offered entirely online. Students will gain a working knowledge of the most commonly used models of ethics consultation in a range of clinical medicine settings. Students will be able to describe the benefits and/or disadvantages of ethics consultation. Students will gain skills in interpreting ethical problems and ethical aspects of clinical cases.

### **MCUR 806 Medical Teaching and Leadership Elective**

See description under MCUR 603 (Sophomore Elective Courses)

### **MCUR 805 Academic Peer Teaching**

See description under MCUR 605 (Sophomore Elective Courses)

### **MCUR 808 Clinical Skills Course Elective**

Fourth-year students will take a primary teaching role in this course. They will be involved in hands-on clinical instruction of students, facilitation of small groups, and reviewing clinical experiences with individual students. Specifically, student responsibilities will include meeting with course directors to establish responsibilities and for training for specific sessions; facilitating small group sessions as the lead facilitator or with faculty; and reviewing individual student performance in the OSCE experience and providing feedback to students. Fourth-year students will be assisting student learning in workshops on SOAP note writing, order writing, presentation skills, suturing skills, reading X-rays, and reading EKGs.

Student participation in facilitating small groups, teaching in the clinical workshops, and giving feedback to students regarding their OSCE performance will allow them to meet the learning objectives.

### **MCUR 850 ECR Preceptorship**

The senior elective in Essentials of Clinical Reasoning is an opportunity for the fourth-year student to improve upon their history and physical examination skills by teaching the freshman and sophomore students these same skills. The fourth-year student works directly with the ECR course directors and helps plan and execute the course materials. The student will be responsible for a group of 2-4 second-year students and go over patient examinations with them. The student will supervise and teach at the bedside. The students will have access to all teaching aids and CD-ROMs and may get feedback on their own skills. The rotation may include taking on a group of 10-15 freshman students and teaching them, with a preceptor, the basics of physical diagnosis and history taking. The students will also participate at the EEC standardized patient facility in a supervisory fashion. The student may also help coordinate and participate in special programs, such as introduction to the third-year program, social history awareness, and sensitivity training. The student will do literature searches to identify relevance and impact of physical examination on the practice of medicine. The student will also receive training in teaching in small group settings and learn appropriate methods of evaluation. The student will help to prepare teaching cases and the learning issues about



them. The student will help grade quizzes by reviewing the paragraphs the students write. The student will attend meetings and give input from the student's perspective. It is highly suggested that the student participate in presenting one of the topics. Students will spend 20-40 hours per week on campus. If students spend less than 40 hours per week on campus, they will be given assignments.

#### **MCUR 851 Proposal for an Independent Senior Elective Project**

This elective serves as an “umbrella” for numerous potential projects that students might develop. The completed proposal will be reviewed by the primary faculty member, as well as the Associate Dean for Medical Curriculum, for approval.

#### **Personal Advising and Counseling**

The University provides a professional counseling service through Student Health Services to help students deal with personal and family problems. Student needs for this service are met promptly. Outside referral may be required to meet special needs or long-term therapy. All contacts with the counseling service are strictly confidential.

#### **Tutoring and Other Academic Assistance**

The Office for Student Affairs, Office of Curriculum and the instructional faculty are interested in helping students maximize their academic performance. Every effort is made to detect potential academic problems as early as possible so that help can be given to correct these problems. Qualified individuals are available to help medical students improve their study skills and to provide tutoring assistance as needed.

#### **Career Counseling**

Throughout medical school, students are exposed to educational programs and various resources to enhance their career decision-making skills. Student-sponsored organizations play a significant role in introducing students to different medical fields. Additionally, the Office for Student Affairs oversees a structured and well-developed career information program which includes a faculty-student advisor program. The AMA-AAMC Careers in Medicine is available for the benefit of medical students.

#### **Student Organizations**

##### **University Student Council**

Students in all four schools participate in the University Student Council. This group, organized and run entirely by students, concerns itself with overall policy and direction of the institution as they relate to student concerns. In addition, the Council plans and supports campus social events and student delegation trips to national professional group meetings. It also names student representatives to committees of the various schools and appoints observers to the University Board of Trustees. In addition to the representatives from each school, all interested students in any of the schools are welcome to participate voluntarily in the Council's activities. The Council meets monthly.

In addition to the University Student Council, CMS has chapters in many of the national medical student associations. These include the American Medical Student Association, of American Medical Women's Association,

Student National Medical Association, Organization of Student Representatives (student branch of the Association of American Medical Colleges) and Beta Tau (CMS chapter of the national coed medical fraternity, Phi Delta Epsilon).

### **Student Participation in University Governance**

Student representatives participate as members of most committees of the medical school and have their own representative on the School's Faculty Executive Council and Academic Assembly. A few of the committees on which students serve include: Admissions, Student Evaluation, Promotion and Awards, Educational Affairs, Faculty-Student Forum and faculty search committees.

### **Honors, Awards and Prizes**

The Chicago Medical School publicly recognizes outstanding scholarship, research accomplishments and community service of individual students. As part of the commencement activities in June, graduates are recognized for meritorious achievements during their Medical School careers.

### **Alpha Omega Alpha**

Alpha Omega Alpha Honor Medical Society was organized nationally in 1902; the Chicago Medical School Chapter was chartered in 1965. The aims of this society are the promotion of scholarship and research in medical schools, the encouragement of high standards of character and conduct among students and graduates, and the recognition of high attainment in medical science and practice. Students who have demonstrated leadership and academic promise of future achievement are elected. Membership is elected from the top 25 percent of any graduating class. Honorary membership in the society, as well as honorary alumni and faculty membership, may be conferred upon persons who have distinguished themselves in various areas of medicine, teaching, research and practice.

### **Gold Humanism in Medicine Honor Society: Chicago Medical School**

The Gold Humanism Honor Society (GHHS) honors medical students, residents, role-model physician teachers and other exemplars recognized for "demonstrated excellence in clinical care, leadership, compassion and dedication to service." Organized to elevate the values of humanism and professionalism within the field of medicine and its constituent institutions, the Society plays an important role in the educational environment at Chicago Medical School. Students are selected for membership during their junior year, based on peer nomination with final selection by a committee of students and faculty members. GHHS student members are responsible for projects throughout the year.

### **Awards and Prizes**

- The Board of Trustees Scholarship Award
- The Alumni Association Scholastic Achievement Award
- The Clerkship Awards
- The Dean's Award for Service to the School
- The John J. Sheinin Research Award
- The Leonard Tow Humanism in Medicine Award

## Resources

### The Learning Resource Center (LRC)

The Learning Resource Center provides a wide range of services to the students, faculty and staff of RFUMS and encompasses the Boxer University Library and Educational Technology. In addition to these resources, teaching and learning are also supported through use of the academic computing labs, small group rooms, and the soon to be completed (by Fall 2008) Presentation Practice Room and Information Commons.

### The Boxer University Library

The Boxer University Library collection consists of nearly 30,000 texts and subscribes to more than 1,200 of the world's leading biomedical journals. Access to the major medical information databases is also provided. Library services include reference assistance to identify and locate scientific and health-related literature, online database searching, library instruction, and interlibrary loans. The Boxer University Library is open 103 hours each week.

Instruction is offered by our Reference and E-Resources librarian on accessing major medical information databases like PubMed, STAT!Ref (electronic medical texts and an evidence-based medical database) and EBSCO Research Database. In addition, an online course to orient patrons to the library and its resources is available through Desire2Learn (the University's learning management software). An orientation to the library's physical space is available upon request.

### Educational Technology

Educational Technology provides training and support for faculty, staff, and students in the use of software technologies that support the educational goals of the university. The current primary technologies include: Desire2Learn (D2L), the University's learning management system, for presenting course material online, the Audience Response System (ARS) for collecting data through class participation, and iTunes University where multimedia content can be downloaded by students for review. Orientation and training classes are presented to support the use of these primary technologies as well as ancillary software applications used to create course content. The growing list of secondary applications include: Adobe Acrobat, Microsoft PowerPoint, Adobe Photoshop Elements, Adobe Contribute, Inbit Fullshot, and TechSmith Camtasia. To help faculty take full advantage of the use of all the technologies supported, Educational Technology personnel offer classes on best-practices in the application of digital content for instructional purposes.

### Academic Computing Labs

The Academic Computing Labs are located on the lower level of the Learning Resource Center (LRC) and provide wired as well as wireless connections to the Internet. All computers in the labs are Windows-based

machines. The main computer lab contains 140 computers, two print stations and a scanning station. A 16 computer teaching lab meets instructional needs for small groups. Two 24-hour spaces are also available for student use: (1) a 30 computer lab with print and photocopy stations; and (2) an adjoining classroom that can seat 20.

### **Small Group Rooms/Presentation Practice Room**

Three small group rooms are located on the lower level of the LRC. Each is equipped with a whiteboard and can comfortably seat 6 to 8 people. The fourth small group room will be a Presentation Practice Room, but it can also be used for small groups that require an isolated space and access to this equipment for intensive study. This room must be reserved in advance and includes the following equipment:

- Power PC
- 46 inch LCD monitor
- PowerPoint remote
- Digital camcorder and tripod
- Whiteboard
- Tabletop lectern
- Conference table and chairs

### **Information Commons**

Located as you enter the main entrance of the Boxer University Library, the Information Commons will be open 24 hours, 7 days a week. The Information Commons represents a significant change from the traditional library setting, bringing together technology, content, and services in one physical space. Impediments to learning are removed by providing ready access to reference and research librarians as well as educational technology and potentially information technology personnel. Today's learning spaces need to be flexible to meet the differing needs of library patrons, as they work independently or in small groups. Socialization, networking, interaction, and collaboration are key elements of learning and the use of comfortable furniture along with the physical layout of the Information Commons fosters these activities. Equipment to be housed in this area includes:

- 8 Windows-based computers
- 2-22 inch widescreen monitors
- 6-19 inch widescreen monitors
- Print station
- Wired and wireless network access
- Electric 3 hole paper punches
- 2 Copy stations



## Information Technology

The Information Technology Department provides access to the University's computing, networking, centralized administrative systems and technical support resources to the faculty, students, staff and administration of the University. The department is also responsible for creating and maintaining a technology infrastructure to support computer networks and telecommunication.

### Help Desk (End-User Support)

The Help Desk provides the University community with a single point of contact for Information Technology's support services. If a member of the community is experiencing a problem with their computer, telephone, network connection or any other related problem, they must contact the Help Desk in order for a technician to be dispatched. The Help Desk can be reached by calling 847-578-8800 (dial 8800 from on-campus phones) or by e-mailing [helpdesk@rosalindfranklin.edu](mailto:helpdesk@rosalindfranklin.edu).

## Community Facilities

### Transportation and Parking

The campus is accessible from downtown Chicago by major highways (Edens Expressway and the Tri-State Tollway), and conveniently served by Metra commuter rail service. The school provides shuttle service to and from the train station in Lake Bluff four times daily for student and employee commuters. Most freshman and sophomore medical students choose to live in communities closely located to the campus and, therefore, commute by automobile. Adequate, free parking is available for students.

### Housing

Rosalind Franklin University offers on-campus living for students in modern, state-of-the-art apartments. For more information about these one- and two-bedroom apartments, or to learn how the Office of Student Housing can assist you in locating off-campus housing, visit

[www.rosalindfranklin.edu/administration/DOSA/StudentHousing/tabid/565/Default.aspx](http://www.rosalindfranklin.edu/administration/DOSA/StudentHousing/tabid/565/Default.aspx)

### Cultural Activities

The cultural, sports and civic activities of the Chicago metropolitan area rival those of any other large urban area in the United States, plus the added attraction of Lake Michigan. In addition to the world-famous Chicago Symphony Orchestra, opera, and theatre, Chicago enjoys renowned jazz, blues and other music venues, as well as a full range of professional sports. Chicago's fine museums offer a variety of exhibits, and the Art Institute of Chicago displays one of the best impressionist collections in the world. Additionally, the North Shore and inland communities provide an abundance of well-developed cultural activities of their own. The Chicago Symphony's summer-long programs at Ravinia Park (about 10 miles south of the campus) are well-known.

### First Year

FALL TERM (10 weeks)	WINTER TERM (10 weeks)	SPRING TERM (10 weeks)
Molecular Cell Biology	Embryology	Epidemiology (online course)
Histology	Histology	Genetics (3 weeks)
Clinical Anatomy	Clinical Anatomy	Medical Ethics (online course)
Essentials of Clinical Reasoning	Essentials of Clinical Reasoning	Essentials of Clinical Reasoning
Physiology	Physiology	Neuroscience
Interprofessional Course	Biochemistry (5 weeks)	Biochemistry

### Second Year

FALL TERM (10 weeks)	WINTER TERM (10 weeks)	SPRING TERM (10 weeks)	SUMMER TERM (2 weeks)
Pathology	Pathology	Pathology	Clinical Skills Course
Microbiology and Immunology	Microbiology and Immunology	Microbiology and Immunology	
Pharmacology	Pharmacology	Pharmacology	
Essentials of Clinical Reasoning	Essentials of Clinical Reasoning	Essentials of Clinical Reasoning	
Clinical Neuroscience	Clinical Neuroscience	Preventive Medicine	
Elective*	Elective*	Elective*	

\*Each student is required to earn 3 hours of elective credit in the second year.

### Third Year

8 weeks	6 weeks	4 weeks	3 weeks
Surgery	Pediatrics	Emergency Medicine	Ambulatory Care
Internal Medicine	Obstetrics/Gynecology	Family Medicine	Neurology
	Psychiatry		Optional Elective**

\*\*A limited number of students may opt to take an elective in their M3 year, and Ambulatory Care or Emergency Medicine in their M4 year.

### Fourth Year

14 weeks	14 weeks	4 weeks
Intramural Electives	Intra/Extramural Electives	Medicine or Pediatrics Sub I

## Departmental Information

### Department of Anesthesiology

The Department of Anesthesiology offers medical students an introduction to clinical anesthesia. Students learn the management of the airway and evaluate patients for the risk of anesthesia. They also learn about the interaction between patient pathology, medications the patient is receiving and the various anesthetic agents and multitude of drugs that are used in present day anesthesia.

Students assigned to the third-year surgical clerkship at Mount Sinai Hospital Medical Center can spend two (2) weeks in anesthesia as an elective. Students learn about anesthesia by participating in preoperative patient evaluation, administration of anesthesia by participating in preoperative patient evaluation, and administration of anesthesia and duties to observe emergencies, trauma and obstetric anesthesia.

### Sophomore Elective Course

#### MANE 601 Research in Anesthesia

This course will focus on research topics related to anesthesia or pain management. The student will select and propose a research project to the supervising faculty member. The approved research project will be carried out under the guidance of the supervising faculty member. Successful completion of the course will include completion of the proposed project. This course may be extended over multiple quarters.

### Senior Elective Course

#### MANE 801 Anesthesiology

The student spends either two (2) or four (4) weeks working directly with one of the staff anesthesiologists in the operating room or obstetrical suite at Mount Sinai Hospital Medical Center. The student learns hands-on management of the airway and endotracheal intubation of the patient.

## Faculty and Associated Staff

### Anesthesiologists:

Henri Havdala, MD, Professor Emeritus

Victor Jordan, MD, Clinical Assistant Professor

Mable Kalathiveetil, MD, Instructor

Matilda Koppera, MD, Assistant Professor

Aurea Luzano, MD, Instructor

Venkatgiri Mady, MD, Assistant Professor

Domingo Osunero, Jr., MD, Instructor

Robert Rogers, MD, Lecturer

John E. Vazquez, MD, Associate Professor and Chair



## Department of Biochemistry and Molecular Biology

The Department of Biochemistry and Molecular Biology participates in the education of medical students in their first year. Required courses offered by the department are Molecular Cell Biology, Medical Biochemistry and Human Genetics. The courses provide medical students with the necessary biochemical and molecular biological background for the study of normal and abnormal physiological processes and encourages the attitudes and skills necessary for the continued integration of molecular information into further formal and informal training.

While maintaining a commitment to teaching excellence, faculty members have very active research programs in the areas of metabolic regulation, enzymology, protein structure, membrane transport proteins, neuroendocrine and neurotrophic proteins, signal transduction, RNA-protein interactions, and membrane protein structural biology. A number of graduate students are integrated into these programs. Opportunities for medical student participation in research are available during the summer quarter and on a part-time basis throughout the school year. Students with strong research interests are encouraged to investigate the Department's combined degree program (MD/PhD) with the Chair. Students enrolled in medical school can also take a leave to pursue research for an MS or PhD degree.

### **MBCH 502 Molecular Cell Biology**

In this course, the molecular and cellular processes common to all eukaryotic cells are studied and, where appropriate, comparisons to prokaryotic cells are made. The molecular and cellular processes of specific cell types and tissue types are also considered, and related to their morphological appearance. A unique aspect of the course is a self-teaching program that covers certain facts and

concepts basic to biochemistry; this is an individual, self-learning, self-evaluation program. Dr. Walters and faculty from the Departments of Biochemistry and Molecular Biology and Cell Biology & Anatomy. Fall quarter. 3 to 5 lecture hours and 1 conference hour per week (5 units).

### **MBCH 505A & B Medical Biochemistry**

The fundamental chemical properties and biological reactions of important compounds in the normally functioning human organism are studied. Emphasis is placed on the regulation and integration of metabolic processes. The course makes use of both lectures and conferences. This course utilizes the self-teaching program to provide the students with an initial foundation of knowledge. Dr. Kaplan and faculty. Winter and Spring quarters. 3 to 6 lecture hours per week (6 units).

### **MBCH 508 Human Genetics**

The course is designed to provide first-year medical students with an understanding of basic genetic principles which are requisite to the practice of modern medicine. Topics discussed include chromosomal abnormalities, pedigree construction, Mendelian inheritance patterns and risk assessment, the role of linkage and restriction fragment length polymorphisms in diagnosis, indications for genetic counseling, and prenatal diagnosis and genetic aspects of cancer. Drs. Neet and McKee. Spring quarter. 15 hours of lecture and 6 hours of conference (3 units).

### **MBCH 616 Crystallization of Membrane Proteins (Research)**

This course will teach the student cutting-edge approaches used in the over-expression and crystallization of membrane proteins. These include vapor diffusion approaches, lipid cubic phase methodology, crystal manipulation, and manipulation and monitoring of detergent levels. The student will be actively involved in experimental design, execution, and data analysis. Fall and Winter quarters. Dr. Ronald Kaplan (3 credits).



## Sophomore Elective Courses

### **MBCH 623     NGF Mutants (Research)**

This elective provides students the opportunity to participate in each phase of experimental procedures to make mutants. Cloning, DNA sequencing, restriction mapping, plasmid manipulation, transfection, and cell growth are addressed. Students learn some molecular biology and protein chemistry through hands-on working to prepare new NGF mutants. If time is available, determination of the effects of such mutants in biological assays is addressed. Dr. Neet.

### **MBCH 630     Enzyme Structure and Mechanism**

This is a course of lectures and seminars by outside speakers on aspects of enzymology. The following subjects are covered: protein sequence methodology, chemical and enzyme kinetics including regulatory kinetics, enzyme mechanisms, chemical modification of enzymes, and site-directed mutagenesis. Spring (alternate years). Dr. Marc Glucksman (3 credits).

### **MBCH 631     NGF Signal Transduction**

The student will learn some molecular biology, cell biology, and protein chemistry by hands-on lab work to determine the effects of neurotrophins and their mutants on signal transduction in PC12 or other cells, including P53, NFkB, MAP kinases, etc. Participation in each phase of experimental procedures to study cellular signalling by NGF. Designing and executing experiments, analyzing results, and troubleshooting. Methods – western blotting, enzyme assays, tissue culture. All quarters. Dr. Kenneth Neet (3 credits).

## Faculty and Associated Staff

Jun-yong Choe, PhD, Assistant Professor  
 Carl Correll, PhD, Associate Professor  
 Marc Glucksman, PhD, Professor  
 David Harrison, PhD, Associate Professor  
 Jack Henkin, PhD, Adjunct Assistant Professor  
 Ronald Kaplan, PhD, Professor and Chair  
 John Keller, PhD, Professor Emeritus  
 Robert Kemp, PhD, Research Professor  
 Min Lu, PhD, Assistant Professor  
 Edward McKee, PhD, Adjunct Associate Professor  
 David Mueller, PhD, Professor  
 Kenneth Neet, PhD, Professor  
 Kyoung Joon Oh, PhD, Assistant Professor  
 Henry Symersky, PhD, Research Assistant Professor  
 Eric Walters, PhD, Professor  
 Sang Woo, PhD, Research Assistant Professor

## Department of Cell Biology and Anatomy

The Department of Cell Biology and Anatomy teaches a substantial portion of the first-year medical school curriculum, including Clinical Anatomy, Histology, Embryology, and part of the Molecular and Cellular Biology course. In addition, the department currently offers two sophomore and two senior electives, where students working in small groups gain advanced instruction from faculty in specialized topics. The department is committed to providing students with a strong education in cell biology. To this end, a wide range of cell biology topics are covered in the various courses taught by the department. The structure and function of cells and their intracellular components are stressed, as are clinical aspects of cell biology.

The anatomically oriented stress the structural organization of the adult human body in relation to its development and function. This structural organization is presented to the students in the form of lectures, audiovisual demonstrations, laboratory participation (dissections and microscopic study) and individual consultation by a faculty committed to excellence in teaching. Clinical lectures are presented by clinical specialists, such as surgeons and radiologists, who stress certain anatomical principles and their relevance to clinical problems.

### Required Classes

#### MCBA 500A & B Clinical Anatomy

Both gross anatomy and developmental anatomy are studied in this course. Laboratory time is devoted exclusively to the regional dissection of a human cadaver. Supplementary offerings within the course include films, prosected cadavers, and bone sets for individual study. 500-Fall quarter, 3 lectures and 5 laboratory hours per week (5 units). 501-Winter quarter, 4 lectures and 5 laboratory hours per week (6 units). 11 total credit hours.

#### MCBA 502A & B Histology

The principal educational goal of this course is to convey the relationship between organ structure and organ function, through the detailed study of light microscopic preparations and electron micrographs of cells, tissues, and organs. Autumn quarter (3 units) and Winter quarter (2 units).

#### MCBA 504 Embryology

The course presents the normal and abnormal development of the human embryo and fetus. The course includes descriptive presentations of developing structures. Conceptual and mechanistic consideration of developmental processes drawn from non-human embryological events are also discussed (2 units).

### Sophomore Elective Courses

#### MCBA 606 Advanced Topics in Cell Biology

This course focuses on selected topics concerning the structure and function of molecules and organelles within the nucleus, cytoplasm and extracellular matrices. Emphasis is placed on the use of primary source materials. Two hours per week (2 units). Not offered every year. Prerequisite: MBCH 502.

#### MCBA 616 Mononeuropathies and Radiculopathies

Mononeuropathies and radiculopathies are common neurological disorders. This course will focus on what these disorders are and how to diagnose them. The student will learn the proper evaluation of individual muscles, reflexes, and dermatomes in arriving at a diagnosis. The course will cover such syndromes as Carpal Tunnel, Ulnar Neuropathy, Peroneal Neuropathy, Cervical and Lumbar Radiculopathies. Fall quarter. Dr. Robert Hazelrigg (3 credits).

## Senior Elective Courses

### **MCBA 802     Dissection-Based Anatomy**

This course is designed to enable students pursuing surgical careers to review anatomy in a regional area of their choice. Daily dissection of cadaveric material is required. 4 weeks, March and April only.

Dr. David McCandless.

### **MCBA 805     Advanced Neuroanatomy**

This course is intended especially for those who plan a career in neurosurgery, neurology, psychiatry or physical medicine. Both the gross and microscopic anatomy of the brain and spinal cord will be studied. This course is intended to prepare the student for an understanding of the anatomical localization of brain and spinal cord function. Clinical correlation anatomy of the human brain will be emphasized throughout the study. Students work closely, one-on-one, with their instructor. Each morning session will be devoted to clinical material, including brain dissection, slide review and discussion. The afternoon session will be divided into individual study. Four weeks.

Prerequisite: successful completion of third-year clerkships.

## Faculty and Associated Staff

Marc Abel, PhD, Associate Professor

Christopher Brandon, PhD, Associate Professor

Joseph DiMario, PhD, Professor

Karen Diario, MS, Instructor

Miroslav Dundr, PhD, Assistant Professor

William Frost, PhD, Professor and Chair

Nasrin Haghighat, PhD, Instructor

Michelle Hastings, PhD, Assistant Professor

David McCandless, PhD, Professor

Monica Oblinger, PhD, Professor

Michael Sarras, PhD, Professor

Greg Skladzien, MD, Assistant Professor

Thanos Tzounopoulos, PhD, Assistant Professor

Barbara Vertel, PhD, Professor

## Department of Cellular and Molecular Pharmacology

Faculty in this department are dedicated to teaching the basic principles of pharmacology and carrying out research in this discipline. Opportunities for medical student participation in departmental research projects are available during the summer and as research electives in the sophomore year. In addition, the Department offers elective courses covering basic and specialized aspects of cellular and molecular pharmacology.

The Foundations of Medical Pharmacology course seeks to develop an understanding of the basic principles of drug action and how they apply to the treatment of pathophysiological basis of disease. The course is designed to promote the development of a rational approach to therapeutics, based on sound understanding of basic principles. The faculty reviews the content of courses yearly to update and maintain clinical relevance.

The subject matter is organized around drug classes according to their therapeutic effects and mechanisms of action. Clinical conferences and small group work are used to underscore the importance of understanding basic pharmacology and pathophysiology in the treatment of disease. Teaching is carried out by faculty with a firm commitment to medical school education. Faculty members teach and participate in all aspects of the course, including lectures and individual consultation. In addition to elective courses in Pharmacology, specific topics, such as regulation of gene expression analysis of pre-mRNA splicing, neuropharmacology, and principles of drug action & therapeutics, have been developed, as these areas contribute to the advancement of medical sciences.

Department faculty members are engaged in research in the general areas of cellular and molecular pharmacology and molecular biology. Specific research projects include the neurobiology of drug addiction, mechanisms

underlying adolescent drug abuse, gene expression and addiction, emotional learning and memory, neurodegeneration (Parkinson's disease), cortical function in Schizophrenia, and pre-mRNA splicing.

### Sophomore Required Course

#### MCMP 600A, B, C Foundations of Medical Pharmacology

The subject matter is covered in lectures, conferences and tutorials. The mechanism of actions of drugs at molecular, cellular and biochemical levels, and factors affecting drug absorption, distribution, metabolism and excretion, are discussed. Pharmacogenetics, gene therapy, drug interactions, therapeutic uses, contraindications and side effects, and the toxicology of selected compounds are also presented. Autumn, Winter and Spring quarters (11 units). Dr. Oltmans, Dr. Potashkin and faculty.

### Sophomore Elective Courses

#### GCMP 600 & 601 Neuropharmacology I & II

This course focuses on the pharmacology of neurotransmitters and other active neurochemicals in the brain. Current knowledge and theories of the mechanisms by which major classes of drugs act at the cellular and molecular level to influence the biosynthesis, distribution, storage, uptake, release and metabolism of centrally active neurochemicals. Scholarly publications accompany discussion lessons. Winter and Spring quarters (5 units). Dr. Mosnaim and faculty.

#### MCMP 610 Molecular and Biochemical Basis of Neuropsychiatric Disorders

This elective takes a multidisciplinary approach to the study of neurochemical correlates of neuropsychiatric disorders. An initial discussion of the fundamental processes involved in synaptic transmission is followed by an analysis of neurotransmitter-receptor interactions and of the different factors modulating signal transduction at the molecular level. When appropriate, recent advances in genetics and molecular biology are introduced and current concepts in basic neurochemistry, electrophysiology, neuropharmacology and behavior are discussed.

The rationale underlying the use of different pharmacotherapy modalities in various neuropsychiatric conditions is explored in some detail. Time to be arranged with instructor.

TBA (1 unit). Dr. Mosnaim.

#### **MCMP 613 Principles of Drug Action and Therapeutics**

The purpose of this elective is to present a comprehensive and coherent explanation of the science of pharmacology in terms of its basic concepts and principles. The course covers drug absorption, distribution, excretion and biotransformation, as well as dose-response relationships and host factors influencing drug action. TBA (1 unit).

Dr. Mosnaim.

#### **MCMP 614 Molecular Genetic Analysis of Pre-mRNA Splicing (Research)**

Expression of most metazoan transcripts requires splicing introns from the primary transcript and ligating together the remaining sequences to produce mature transcripts in a highly regulated manner that often produces multiple mRNA from a single pre-mRNA. In one series of studies we are investigating how the dysregulation of splicing caused by exposure to various environmental stimuli, such as neurotoxins, leads to neurodegeneration. The intent of these studies is to identify splice variants that may be used as biomarkers for Parkinson's disease so that diagnosis and treatment may begin at an early asymptomatic stage of disease onset. In another study, we are examining the changes in splicing that occur upon chronic addictive drug exposure. The goal of these studies is to understand the molecular mechanisms that leads to addiction. TBA (1-3 units). Dr. Potashkin.

#### **MCMP 615 Regulation of Gene Expression by Drugs of Abuse (Research)**

Drugs of abuse, such as cocaine, cause altered expression of genes in neurons of brain systems that are involved in the generation of motivated behavior. Such changes in gene regulation are part of the neuronal basis for drug addiction and dependence. Our research focuses

on the effects of drugs of abuse on gene regulation in the basal ganglia and related forebrain systems. We mainly investigate how psychostimulant drugs affect the expression of genes that encode peptide neurotransmitters, transmitter-related enzymes, receptors, ion channels and transcription factors and how such neuronal changes alter basal ganglia output and behavior. These studies contribute to our understanding of the molecular and cellular changes underlying drug addiction. The offered course is part of this research. TBA. (1 - 3 units). Dr. Steiner.

#### **Faculty and Associated Staff**

Charles Barsano, MD, PhD, Professor  
Seymour Diamond, MD, Adjunct Professor  
Rachid EL Kouhen, PhD, Adjunct Assistant Professor  
Steven Hoff, PhD, Adjunct Associate Professor  
Patricia Loomis, PhD, Research Assistant Professor  
Michela Marinelli, PhD, Associate Professor  
Gloria Meredith, PhD, Professor and Chair  
Aron Mosnaim, PhD, Professor  
Gary Oltmans, PhD, Associate Professor  
Judith Potashkin, PhD, Associate Professor  
Gordon Pullen, PhD, Associate Professor  
David Rademacher, PhD, Research Assistant Professor  
Barry Roberts, PhD, Adjunct Professor  
J. Amiel Rosenkranz, PhD, Assistant Professor  
Ann Snyder, PhD, Associate Professor  
Heinz Steiner, PhD, Associate Professor  
Kuei Tseng, MD, PhD, Assistant Professor

## Department of Emergency Medicine

The Department of Emergency Medicine provides health care of the highest standard at both educational sites, the emergency departments at Mount Sinai Hospital and Stroger Hospital. The Department of Emergency Medicine is dedicated to providing a premier learning environment for all the medical students, and physician assistant students. The Department of Emergency Medicine educates the residents in all related training programs including emergency medicine, medicine, surgery, pediatrics, family medicine, and psychiatry. The Department of Emergency Medicine at both sites engages in a significant amount of clinically based research. Most of this research resulted in publications in premier journals.

### Junior Clerkship

#### MEMG 702 Emergency Medicine

This is a required four-week rotation during the third year. The student learns the principles of prioritization of potentially life- or limb-threatening conditions and how to approach the acutely ill or injured patient with a focused history and physical exam. Procedures taught in the second year in introduced are performed in the Emergency Department setting with attention to universal precautions and personal safety. A series of lecture/discussion group sessions are conducted by the faculty from Emergency Medicine addressing the major presenting complaints. The student is assigned to either John H. Stroger, Jr., Hospital of Cook County or Mount Sinai Hospital for the clinical portion. Orientation for both sites occurs at Mount Sinai.

### Sophomore Elective Courses

#### MEMG 601 Research in Emergency Medicine – John H. Stroger, Jr. Hospital of Cook County

With the faculty mentor, students will select a topic from the broad areas of clinical or health services research:

1) best practices within the ED: diagnostic test evaluation; biomedical and cost outcomes; patient centered outcomes; e.g., quality of life and patient satisfaction; 2) best

practices between the ED and the community: epidemiology; clinical prevention; primary care; EMS; and outreach/follow-up studies; and 3) best practices between the ED and the hospital: ambulatory sensitive conditions, e.g., diabetes, asthma, cellulitis, chest pain, DKA, infectious disease; patient outcomes in observation units, e.g., biomedical, cost, and patient centered; rapid diagnostic and treatment protocols in least restrictive environments.

#### MEMG 602 Research in Emergency Medicine – Mount Sinai Hospital

With the faculty mentor, students will select a topic from the broad areas of clinical or health services research, such as pain management, psychiatric care, asthma, and violence prevention. The student will complete a self-study curriculum in research design and performance. The student is expected to select, design and collect data for a research project during this 1 – 2 month elective.



## Senior Elective Courses

### **MEMG 824    Emergency Medicine – John H. Stroger, Jr. Hospital of Cook County**

The fourth-year student is given the opportunity for increased responsibility in initially independently evaluating patients with urgent or emergent problems. Cases are presented directly to the attending faculty and one-on-one teaching occurs. The experience is divided among the asthma/sickle cell, gynecologic/obstetric, fast track and general acute treatment areas. An emphasis is placed on acquiring skills in prioritizing, rapid assessment, formulating a working differential diagnosis, cost/quality effective decision making in the work-up, management and disposition of acutely ill and injured patients. The student acquires the ability to manage multiple patients simultaneously during the rotation. Four weeks.

### **MEMG 825    Research in Emergency Medicine – Mount Sinai Hospital**

With the faculty mentor, students will select a topic from the broad areas of clinical or health services research, such as pain management, psychiatric care, asthma, and violence prevention. The student will complete a self-study curriculum in research design and performance. The student is expected to select, design and substantially complete a research project during this 1 – 2 month elective.

### **MEMG 894        Emergency Medicine – Mount Sinai Hospital**

The student will be scheduled 40 hours weekly in the Emergency Department. During these hours, the student will see patients under the direct supervision of the attending physician. It is expected that the student will observe and participate in the management of critically ill and injured patients. This elective should be especially valuable for students considering a residency in Emergency Medicine.

## Faculty and Associated Staff

Anthony Bekkerman, MD, Clinical Instructor  
Rebecca Bower-Lewis, MD, Lecturer  
Karen Cosby, MD, Lecturer  
Eileen Couture, MD, Lecturer  
Dirk DeHaas, MD, Clinical Assistant Professor  
Jorge Ferrer, MD, Instructor  
Leon Gussow, MD, Lecturer  
Ross Heller, MD, Associate Professor  
Mark Kling, MD, Lecturer  
Paulina Kuchinic, MD, Assistant Professor  
William Lauth, MD, Professor  
Moses Lee, MD, Lecturer  
William Maloney, MD, Lecturer  
Kris Narasimhan, MD, Lecturer  
Isam Nasr, MD, Lecturer  
Jon Olsen, MD, Lecturer  
Mark Olszyk, MD, Clinical Assistant Professor  
Fernando Orellana, Instructor  
Scott Plantz, MD, Clinical Associate Professor  
Rebecca Roberts, MD, Lecturer  
Sharon Southe, Lecturer  
Shari Schabowski, MD, Lecturer  
Jeffrey Schaidler, MD, Lecturer  
Michelle Sergel, MD, Lecturer  
Scott Sherman, MD, Lecturer  
Amardeep Singh, MD, Assistant Professor  
Amarjit Singh, MD, Assistant Professor  
Michael Slater, MD, Assistant Professor  
Thomas Widell, MD, Assistant Professor  
Leslie Zun, MD, Professor and Chair

## Department of Family and Preventive Medicine

The Department of Family and Preventive Medicine provides training for medical students throughout their four years at Chicago Medical School.

### Freshman Elective Course

#### MCUR 615 Clinical Exposure Program

Selected students spend two half-days per month at a primary site with a mentoring physician. Emphasis is placed on the doctor/patient relationship. All quarters.

### Required Courses

#### MCUR 502A, B, 602C, D, E Essentials of Clinical Reasoning

First-year medical students as well as second-year students from the Scholl College of Podiatric Medicine participate in this course. The course consists of lectures and student demonstrations of history taking followed by lectures and small group labs focused on the physical examination of the different organ systems. Kurt Kurowski, MD.

#### MMTD 601 Preventive Medicine

Four-hour lecture and home study course. It contains a module in epidemiology, plus introductory lectures and assignments in the fields of occupational medicine and of environmental medicine. Further, there are lectures and assignments on a sampling of diseases which are common, which constitute public health problems and which are amenable to varying degrees to screening, early diagnosis and subsequent intervention. Spring quarter. Judith Gravdal, MD.

#### MFPM 700 Family Medicine Clerkship

Students learn about and experience family practice in its unique combination of inpatient and outpatient settings; service to all age groups and both genders; attention to both organic and functional aspects of illness; and the interactions among lifestyle, life stresses and disease. Four weeks. Stuart Goldman, MD

#### MFPM 803 Sports Medicine Resurrection Hospital Chicago, IL

Course consists of a combination of a Sports Injury Clinic and traditional family practice at Resurrection Family Practice Center, as well as training room clinics at Loyola Academy, New Trier and Niles West High School and North Park University. Additional time may be available at various rehabilitation centers and orthopedic offices in the area. A comprehensive overview of sports medicine is offered under the direct supervision of three family practice physicians who are board certified in sports medicine. The student will be responsible for independent evaluation of athletes in various settings including traditional office settings, high school and collegiate training rooms and athletic events. After evaluating athletes, the student will have an opportunity to discuss differential diagnosis, as well as treatment options, with the supervising attending. The student will also see patients (traditional and sports medicine) in the Resurrection Family Practice Residency Center. This is a Pass/Fail course.

#### MFPM 810 Family Medicine Preceptorship

The student works full time with a family physician in one of many settings at various sites. This is organized along the lines of the junior clerkship but with a greater effort to have students examine patients independently and form a differential diagnosis. Four weeks. This is a Pass/Fail course.

#### MFPM 815 Sports Medicine –

##### Advocate Christ Hospital, Oak Lawn, IL

Students will be under the supervision of primary care physicians with a sports medicine interest as well as orthopedic surgeons and trainers. Students will evaluate patients independently and present their differential diagnoses and treatment plans to their supervising physicians. Students will also see patients (traditional family practice and sports medicine) at the Christ Hospital Family Practice Center. There will be one hour per week of formal lecture on sports medicine topics at Christ Hospital.



Clinics at the Christ Hospital Family Practice Center will be a mixture of sports medicine and traditional family practice. Clinics will also be in the Parkview Orthopedics Clinic in Palos Heights and Orland Park, IL, as well as game time and site visits at high schools in Chicago's south side and southern suburbs.

**MFPM 830 Care of Adults with Developmental Disorders**

In this elective, the medical student develops an understanding of caring for adults with developmental disabilities. The student works with a family physician and a multidisciplinary team to evaluate and treat adults with developmental disabilities (including a social worker, audiologist, and nutritionist). The student will also have opportunities to interact and work with families, care providers, and other social agencies that provide services for the patients or those who are involved in a variety of programs at the center. The experience is primarily outpatient but also includes evaluation of patients from the center who are hospitalized, in nursing homes, and group homes. Advocate Lutheran General Hospital. Dr. Brian Chicoine. A report is due at the end, and is a requirement of the elective. This is a Pass/Fail course.

**MFPM 835 Headache Diagnosis and Management**

Students will work under the direct supervision of physicians specializing in headache as well as working with ancillary staff for methods of assessment of headache via history and physical examination and in the use of alternative medicine techniques, such as biofeedback for headache management. Students will spend additional time with a clinical pharmacologist to further learn the role of drug therapies in headache management. Satisfactory progression of the student in the program will include demonstration of the ability to assess headache patients and develop treatment plans that will be reviewed and discussed with one of the physicians responsible for the program. The educational program will be conducted primarily at the Diamond Headache Clinic with additional time spent at the Diamond Headache Inpatient Treatment Unit at Columbus

Hospital. This is a Pass/Fail course.

**MFPM 885 Sports Medicine**

**Advocate Lutheran General Hospital, Park Ridge, IL**

This sports medicine elective introduces the student to concepts important to the health of athletes. Common injuries and their rehabilitation will be emphasized. The student will develop proficiency in the musculoskeletal history and physical. The team approach to sports medicine will be emphasized. Students will become comfortable with the musculoskeletal exam, especially ankle, knee and shoulder. Students will learn the important basic historical questions to ask regarding musculoskeletal injuries and become familiar with medical issues related to exercise. This is a Pass/Fail course.

## Faculty and Associated Staff

Abdulmassih Abdulmassih, MD, Clinical Assistant Professor

Joseph Atto, MD, Clinical Assistant Professor

Steven Ayre, MD, Clinical Assistant Professor

Ihab Aziz, MD, Clinical Assistant Professor

Walten Baba, MD, PhD, Professor

Stephen Bennett, MD, Lecturer

William Briner, MD, Lecturer

George Brodsky, MD, Clinical Assistant Professor

Sangili Chandran, MD, Clinical Assistant Professor

Yuri Cherny, MD, Clinical Assistant Professor

Audrey Cheung-O'Carroll, MD, Clinical Instructor

Brian Chicoine, MD, Lecturer

Dimitrios Christoforidis, MD, Clinical Assistant Professor

Richard Clark, MD, Clinical Assistant Professor

Seymour Diamond, MD, Clinical Professor

Lakshmi Dodda, MD, Clinical Instructor

Daniel Dugan, PhD, Adjunct Assistant Professor

Harvey Echols, MD, Clinical Instructor

Fredrick Ellyin, MD, Professor

Mark Fields, MD, Clinical Assistant Professor

Frederick Freitag, MD, Clinical Assistant Professor

Michael Friedman, MD, Lecturer

Darnella Gist, MD, Clinical Instructor

Stuart Goldman, MD, Associate Professor

Arvind Goyal, MD, Clinical Associate Professor

Judith Gravdal, MD, Professor & Chair

William Greenfield, MD, Clinical Assistant Professor

Inna Gutman, MD, Lecturer

Lawrence Hirsch, MD, Professor Emeritus

Alison Holloway, MD, Clinical Assistant Professor

Michael Jacobs, MD, Clinical Assistant Professor

Carrie Jaworski, MD, Clinical Instructor

Rajiv Kandala, MD, Clinical Assistant Professor

James Kim, MD, Clinical Instructor

Greg Kirschner, MD, Lecturer

Kurt Kurowski, MD, Associate Professor

Herbert Lipschultz, MD, Associate Professor

Adolfo Llano, MD, Clinical Assistant Professor

Georgia Lubben, MD, Clinical Instructor

Mohammad Malik, MD, Clinical Assistant Professor

Manfred Man, DO, Assistant Professor

Jay Mayefsky, MD, Professor

Dennis McCreary, MD, Clinical Assistant Professor

Timothy McCurry, MD, Lecturer

Garry Melnick, MD, Clinical Assistant Professor

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Padmanabhan Mukundan, MD, Assistant Professor

Ruksana Nazeer, MD, Clinical Instructor

Senora Nelson, MD, Clinical Assistant Professor

Donald Novey, MD, Clinical Assistant Professor

Steven Pearlman, MD, Clinical Assistant Professor

Betsy Pepper, MD, Clinical Assistant Professor

Tamar Perlow, MD, Lecturer

Kenneth Pierini, MD, Clinical Assistant Professor

Michael Plunkett, MD, Assistant Professor

Stuart Richer, OD, PhD, Clinical Associate Professor

Stephen Rittmann, MD, Clinical Assistant Professor

Robert Rozner, MD, Clinical Instructor

Lee Sacks, MD, Lecturer

Eric Schackow, MD, Lecturer

Bharat Shah, MD, Lecturer

Jerrold Shapiro, MD, Lecturer

Abha Sharma, MD, Clinical Instructor

Melanie Shuran, PhD, RD, Professor

Gerald Stanton, MD, Clinical Assistant Professor

Sajjini Thomas, MD, Lecturer

James Valek, MD, Lecturer

Augustine Wong, MD, Assistant Professor

Miles Zaremski, JD, Adjunct Assistant Professor

## Department of Medicine

The Department of Medicine provides students with training in clinical medicine, including physical diagnosis, bedside training in general internal medicine and orientation to the major medical subspecialties. The clinical experiences are complemented by didactic teaching sessions and in-depth reference to current medical literature.

### First-Year Required Course

#### MCUR 502A, B & C

The first-year Essentials of Clinical Reasoning course is a year-long course that provides clinical training in history taking, physical examination, patient communication and clinical reasoning. The course has an interprofessional focus and includes podiatry and medical students. Multiple teaching methods are used during the course. Students have didactic lectures which focus on introducing skills and applying them to clinical situations. Students practice their skills on each other in workshop settings supervised by faculty. In addition, students have encounters with standardized patients which provide a realistic simulation of an actual patient encounter. The course uses a competency-based grading system which ensures that all students who successfully pass the course have the necessary knowledge and skills to be well prepared for their clerkship experiences. (5 units).

### Second-Year Required Course

#### MCUR 602D, E & F

This portion of Essentials of Clinical Reasoning builds on the first-year required course. The students have lectures throughout the year with a focus on history taking and physical examination working toward developing problem lists, differential diagnosis, and understanding the pathophysiology of disease. These lectures are primarily didactic yet are quite interactive. The physical examination and interviewing techniques

are reviewed early in the course. The students are evaluated on their head-to-toe physical examination by standardized patient examination. The students are also involved in actual patient examinations, which allow the students to utilize the history and physical examination to develop a data base which serves as the primary source for identification of patient problems. Upon completion of this course, the students should be skilled and efficient in basic techniques of interviewing, history taking, and physical examination. The student is also introduced to the procedures and laboratory techniques that supplement the clinical examination in preparation for the clinical clerkships. During the year, the student will have multiple opportunities to practice oral presentation skills and written documentation of clinical encounters. The course uses a competency-based grading system which ensures that all students who successfully pass the course have the necessary knowledge and skills to be well prepared for their clerkship experiences. (11 units).

### Required Courses

#### MMED 700 Medicine Clerkship

The Junior Medicine Clerkship is conducted at one of CMS's seven affiliated hospitals. This eight week rotation is offered at John H. Stroger, Jr., Hospital of Cook County, Advocate Christ Hospital, Advocate Illinois Masonic Hospital, Advocate Lutheran General Hospital, Mount Sinai Hospital, North Chicago Veterans Affairs Medical Center (NCVAMC) and Norwalk Hospital in Connecticut. There are designated faculty clerkship supervisors and teaching faculty at each institution. The objective of the clerkship is to present the student with a basic core of information in internal medicine. The student is provided with practical experience at the bedside, and formal work and teaching rounds. Techniques of clinical diagnosis and management, including diagnostic and therapeutic medical procedures, are demonstrated and, in appropriate instances, performed by the clinical clerks with faculty guidance.

Subspecialty rounds, clinical conference, clinical-pathological conference and medical grand rounds complement the clerkship experience. Case seminar series provide a core curriculum supplemented by specific assignments, reference to current medical literature and supplementary sources of written and audiovisual instruction.

#### **MMED 701 Ambulatory Care**

As part of this required junior clerkship, students spend time participating in internal medicine and/or subspecialty clinics for three weeks. Educational sessions are spent at Chicago Medical School covering areas of Journal Club and Rounds. The goal is to become familiar with outpatient internal medicine and learn to function in the office setting. This is a Pass/Fail program. Three weeks (4.5 units).

#### **MMED 800 Medicine Subinternship**

The student Subinternship in Internal Medicine provides an opportunity to serve as an active member of a resident-intern-student team, intimately involved in the acute care of patients on the medical service. The subinternship is conducted at six of the seven CMS's affiliated hospitals. This four week rotation is offered at John H. Stroger, Jr., Hospital of Cook County, Advocate Christ Hospital, Advocate Illinois Masonic Hospital, Advocate Lutheran General Hospital, Mount Sinai Hospital, and Norwalk Hospital. The clinical experience exposes the student to a wide variety of medical problems for which the clerk is responsible for diagnosis and treatment under the direct supervision of the medical resident and attending physician. The full Teaching program includes attending rounds, subspecialty conferences and weekly medical grand rounds. The clerkship is intended to permit the student to serve as an "acting intern" as a means of improving his or her understanding of the pathophysiology of disease, clinical skills, physical and laboratory examinations, and knowledge and judgement in clinical medicine.

### **Successful completion of course**

**MMED #700 with a passing grade is a requirement for this course.**

### **Senior Elective Courses**

#### **Ambulatory Care**

**MMED 892 – Advocate Illinois Masonic Hospital**

**MMED881 – Dr. Singla (Joliet) Private Practice**

AIMMC - The student will learn to diagnose and care for acute and chronic medical problems in an ambulatory setting. Students will become familiar with screening guidelines based on a patient's age and gender. Students will begin to implement primary prevention during most patient encounters. They will become familiar with the policies and protocols of managed care. They should be able to perform a MEDLINE search efficiently and apply the information to the practice.

Dr. Singla - The student will be exposed to the common and, at times, the rare endocrine and metabolic disorders through both in-hospital consultations and office practice. Through this clinical exposure, the student will be able to expand upon his/her knowledge of the actions of specific hormones and their role in normal body functions and disease states. The student will develop the ability to perform a complete endocrinologic evaluation and interpret the results of both physical examination and laboratory findings. In addition, there will be Endocrinology Conferences, Nuclear Medicine-Thyroid Conferences and impromptu didactic sessions for the student to attend.

## Rehabilitative Medicine

### MMED895 – Advocate Lutheran General Hospital

The student will rotate in PM&R with admission and follow-up in-patients on Rehab Unit. A variety of patients, including those with strokes, brain injuries, amputations, etc. will be seen. There will be an opportunity to be involved in consults, lymphedema clinic, and pain clinic. Student will become familiar with main diagnoses on in-patient rehab unit and gain experience with team conferences and treatment plan. Lectures will be tailored to student's areas of interest.

## Cardiology

### MMED 813 – Mount Sinai Hospital

### MMED 814 – Stroger Hospital of Cook County

### MMED 815 – NCVAMC

### MMED 864 – Advocate Lutheran General Hospital

The student is involved in all activities under the supervision of attendings, fellows and/or residents. These activities include clinical consultation with the cardiology residents and, when appropriate, independently. The case is presented to an attending, and details are reviewed and plans formulated. Students attend rounds in the CCU and participate in the examination and evaluations of care cardiac patients. The students participate in the daily noninvasive testing review sessions with fellows and/or attendings, and also assist in doing treadmill ECGs. These sessions emphasize clinical correlation.

## Cardiology Research

### MMED 805 – NCVAMC

This course involves hands-on research experience in a cardiovascular research laboratory. The student will work with investigators under the guidance and supervision of the Principal Investigator and Laboratory Director. The level of responsibility will be determined by the level of prior training of the student and their initiative and interest.

## Cardiovascular Testing

### MMED 818 – NCVAMC

The student will be involved in the workup of patients being admitted to the cardiology service and participate in teaching sessions and all noninvasive cardiac testing (EKG, Holter monitoring, treadmill exercise testing, echocardiogram.)



## Clinical Nuclear Medicine

### MMED 888 – Advocate Lutheran General Hospital

The student will be introduced to the clinical application of Nuclear Medicine in a large community hospital. A wide variety of SPECT, cardiac and physiological studies will be seen. There will be several didactic lectures, as well as conferences. Monthly Nuclear Medicine thyroid-path-endocrine correlation conferences, as well as weekly thallium-cardiolite myocardial perfusion conferences, are held. In addition, the student will spend one to two full days at a nearby imaging center.

## Clinical Toxicology

### MMED 891 – Stroger Hospital of Cook County

The student will attend and participate in lectures and conferences given by toxicology fellows and attendings board certified in medical toxicology. The student will participate in clinical inpatient rounds and discuss the management of about 25 patients per week. Some afternoons will be spent at the Illinois Poison Control Center, where the student will respond to routine calls. The student will present a formal lecture at the end of the rotation on a toxicology topic approved by the fellows.

## Dermatology

### MMED - 821 Stroger Hospital of Cook County

### MMED 822 – Dr. Berk – Private Practice

CCH – The student will work with an attending physician and a faculty member in the Department of Clinical Dermatology.

Dr. Berk – Student should be capable of: Making an objective morphological description of skin ailment, and eliciting an adequate relevant history. Determining, interpreting, and performing supportive or diagnostic laboratory procedures as required. Outlining a treatment plan and evaluating therapeutic response. Knowing which dermatology conditions merit urgent treatment and/or referral. Knowing where pertinent

literature is available, and how to use it to better treat the dermatology patient.

## Endocrinology

### MMED 826 – Mount Sinai Hospital

### MMED 827 – NCVA Hospital

### MMED 830 – Stroger Hospital of Cook County

### MMED 865 – Advocate Lutheran General Hospital

### MMED825 – Advocate Illinois Masonic

The student will examine and follow patients in inpatient and out patient settings. Through this clinical exposure, the student is able to expand upon their knowledge of the actions of specific hormones and their role in normal body functions and disease states. The student will be responsible for the initial evaluation and follow-up assessment of some of the inpatient consultations. The student will be under the supervision of Endocrinology/Metabolism staff members. Students will take part in clinical conferences, ward rounds and journal club.

## Gastroenterology

### MMED 832 – NCVAMC

### MMED 833 – Stroger Hospital of Cook County

### MMED 834 – Advocate Illinois Masonic Hospital

### MMED 863 – Norwalk Hospital

### MMED 866 – Advocate Lutheran General Hospital

The student will improve their knowledge and skill in the diagnostic and therapeutic approach to common digestive system diseases. The student may be exposed to diagnostic x-rays, scans, ultrasounds, histopathology of biopsies, laboratory data, and esophageal manometric traces and receive instruction on their interpretation. The student may observe such procedures as upper endoscopy, sigmoidoscopy, colonoscopy and liver biopsy and are instructed regarding the uses of these procedures and interpretations or evaluation of results.

## Hematology/Oncology

**MMED 851 – Mount Sinai Hospital**

**MMED 868 – Advocate Lutheran General Hospital**

**MMED 890 – Stroger Hospital of Cook County**

**MMED835 – NCVA Hospital**

The student will be exposed to a variety of clinical hematological and oncological problems and is given significant responsibility for diagnostic procedures and management under continuous supervision of the Oncology/Hematology fellows and/or attending physicians. Emphasis is on patient evaluation, appropriate diagnostic studies and treatment.

## Infectious Disease

**MMED 839 – NCVAMC**

**MMED 840 – Mount Sinai Hospital**

**MMED 841 – Stroger Hospital of Cook County**

**MMED 870 – Advocate Lutheran General Hospital**

**MMED 893 – Advocate Illinois Masonic Hospital**

The student will comprehend a basic understanding of the common clinical infectious disease syndromes and knowledge of the appropriate use of antibiotics. They will work alongside attending and/or fellow physicians on patients with infectious diseases, many of who are in intensive care units. The student will perform histories and physicals and do daily, as well as reviewing current x-rays, cultures, and microscopic specimens. The student will have daily general medical lectures as well as weekly specialty conferences.

## Mature Adult Medicine

**MMED 867 – Advocate Lutheran General Hospital**

The objective of this rotation is to gain knowledge and skills in the following areas: biology of aging, social and economic issues concerning the elderly in various settings, clinical pharmacology in the aged, the ability to perform a geriatric evaluation including cognitive and gait assessments, evaluation and management of depression and dementia, and management of urinary incontinence. Instructional methods include direct patient care, lectures and seminars. Various sites,

including the ambulatory office, acute care-general medical unit, geriatric, psychiatry, and geriatric rehab wards, and long-term care, will be utilized. The student will see approximately five new patients per week.

## Medical Critical Care/Cardiac Critical Care

**MMED 816 – Advocate Illinois Masonic Hospital**

**MMED 817 – Norwalk Hospital**

**MMED 819 – Stroger Hospital of Cook County**

**MMED 820 – NCVAMC**

**MMED 842 - Swedish Covenant Hospital**

**MMED 843 – Mount Sinai Hospital**

**MMED 869 – Advocate Lutheran General Hospital**

**MMED 869-2 – Lutheran Cardiac Care**

The student will gain the necessary training and exposure to enable them to organize thinking about complex medical patients. Students will develop comfort in interpreting data and be able to initiate appropriate management. Students will increase their awareness of ethical and family issues commonly seen in ICU and CCU patients. Problems commonly encountered in this elective can be: acute respiratory failure – ventilator management, myocardial infarction, congestive heart failure, cardiac arrhythmias, hypo and hypertension, acute neurological problems (CVAs, drug overdose, change in mental status), diabetic emergencies such as diabetic ketoacidosis, uncontrolled upper and lower gastrointestinal bleeding and acute renal failure. Student will also perform simple invasive procedures such as arterial line insertion, thoracentesis, paracentesis and lumbar puncture. Student will also attend formal lectures on topics of interest, daily rounds and teaching conferences.

## Nephrology

**MMED 845 – Mount Sinai Hospital**

**MMED 846 – NCVAMC**

**MMED 847 – Stroger Hospital of Cook County**

**MMED 871 – Advocate Lutheran General Hospital**

**MMED 886 – Advocate Illinois Masonic Hospital**

**MMED 887 – Advocate Christ Hospital**

The goal of this elective is to provide a perspective into various aspects of renal pathophysiology including acute and chronic renal failure, glomerular and tubulointerstitial diseases, nephrolithiasis and hypertension, in addition to acid-base, fluid and electrolyte disturbances. The student will work with Nephrology attendings and/or fellows. The student is responsible for patient workup (both inpatient and clinic) and is expected to fully participate in patient management under supervision. Daily floor rounds are made on all patients followed by the service – both consultative and primary.

## Pulmonary

**MMED 855 – NCVAMC**

**MMED 856 – Mount Sinai Hospital**

**MMED 857 – Stroger Hospital of Cook County**

**MMED 858 – Norwalk Hospital**

**MMED 872 – Advocate Lutheran General Hospital**

The student will be assigned to an attending and/or fellow physician. The student will function as a pulmonary consultant, making the first evaluation of selected patients. Students will review and discuss pulmonary function testing – physiology and pathophysiology of such testing, techniques of such testing and its limitations and implications for patient care. Students will have access to pulmonary function labs, outpatient clinics and medical intensive care units. Students participate in the management of mechanical ventilation and diagnostic techniques, including endotracheal intubation, fiberoptic

bronchoscopy and thoracentesis.

## Rheumatology

**MMED 873 – Advocate Lutheran General Hospital**

**MMED 894 – Stroger, Hospital of Cook County**

This elective emphasizes direct patient contact, extending the lessons learned from patient evaluation into the pathophysiology and treatment of rheumatic diseases. Students function at the level of a housestaff member in providing evaluation and care for patients. Inpatient rounds and office hours are made daily with an attending rheumatologist. Unique aspects of the rotation include osteoporosis detection and therapy, arthroscopic surgery, joint irrigation and muscle biopsy techniques. Formal teaching conferences complement bedside teaching.

## Faculty and Staff

Donald Aaronson, MD, Clinical Professor

Brenda Affinati, MD, Clinical Assistant Professor

Mario Affinati, MD, Clinical Assistant Professor

Mohammed Ahmed, MD, Associate Professor

Adil Alavi, MD, Clinical Assistant Professor

Grazia Aleppo, MD, Lecturer

Abdullah Altayeh, MD, Assistant Professor

Hugo Alvarez, MD, Assistant Professor

Kris Anand, MD, Clinical Assistant Professor

Rohit Arora, MD, Professor

John Avramidis, MD, Assistant Professor

Iyad Ayoub, MS, Research Instructor

Charles Barsano, MD, PhD, Professor

Cesar Bastos, MD, Clinical Instructor

Peter Bell, MD, Instructor

Jose-Daniel Benatar, MD, Clinical Assistant Professor

Mark Berk, MD, Assistant Professor



Charles Berkelhammer, MD, Lecturer  
 Yechiel Berkowicz, MD, Clinical Instructor  
 Bruce Bernheim, MD, Clinical Assistant Professor  
 Gregory Berry, DO, Assistant Professor  
 Jacob Bitran, MD, Professor  
 Sydney Brandwein, MD, Clinical Professor  
 Harold Bregman, MD, Clinical Professor  
 Cheryl Brody, DO, Clinical Instructor  
 Leslie Brookfield, MD, Clinical Assistant Professor  
 Laurie Broutman, MD, Assistant Professor  
 Susan Broy, MD, Professor  
 David Buchanan, MD, Lecturer  
 Gerald Buckman, MD, Clinical Assistant Professor  
 Paula Butler, MD, Associate Professor  
 David Campbell, MD, Clinical Instructor  
 Preston Cannady, MD, Professor  
 Laura Carothers, DO, Assistant Professor  
 Antonio Chedid, MD, Professor  
 Jen-Chieh Cheng, MD, Professor  
 Christopher Chiu, MD, Lecturer  
 Serafin Chua, MD, Assistant Professor  
 Jan Clarke, MD, Associate Professor  
 Joseph Cleary, MD, Professor  
 Charles Cochran, MD, Clinical Instructor  
 Mark Cohen, PhD, Clinical Associate Professor  
 David Cooke, MD, Clinical Associate Professor  
 Ahmet Sinan Copur, MD, Assistant Professor  
 Sidney Cruz, MD, Clinical Assistant Professor  
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 Maribeth December, MD, Clinical Assistant Professor  
 Sandra Dempsey, MD, Assistant Professor  
 Marvin Den, MD, Clinical Assistant Professor

Muhyaldeem Dia, MD, Lecturer  
 Merle Diamond, MD, Clinical Assistant Professor  
 Albert Dietz, MD, PhD, Clinical Professor  
 Lawrence Domont, MD, Clinical Associate Professor  
 James Dunphy, MD, Lecturer  
 Timi Edeki, MD, Clinical Professor  
 Gerald Eisenberg, MD, Clinical Professor  
 Fredrick Ellyin, MD, Professor  
 Juan Engel, MD, Professor  
 Axel Feller, MD, Professor  
 Ira Fenton, DO, Clinical Instructor  
 Jonathon Fine, MD, Lecturer  
 Marc Fine, MD, Associate Professor  
 Barry Fischer, MD, Lecturer  
 Martin Floch, MD, Lecturer  
 Gerald Frank, MD, Clinical Assistant Professor  
 Cory Franklin, MD, Professor  
 Sandra Frellsen, MD, Lecturer  
 Abe Friedman, MD, Lecturer  
 Yaakov Friedman, MD, Associate Professor  
 Ashok Fulambarker, MD, Professor  
 Eric Gall, MD, Professor and Chair  
 Serafino Garella, MD, Clinical Professor  
 Raul Gazmuri, MD, PhD, Professor  
 Gerald Gamalski, MD, Clinical Professor of Medicine  
 Phillip Gianfortune, DPM, Professor  
 Janice Gilden, MD, Professor  
 Harry Ginzburg, MD, Assistant Professor  
 Nancy Glick, MD, Associate Professor  
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 Julie Goldberg, MD, Lecturer  
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 Muhammad Hamadeh, MD, Lecturer  
 Farah Hasan, MD, Lecturer  
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 Harvey Kantor, MD, Clinical Professor  
 Naren Kapadia, MD, Lecturer  
 Gary Kaufman, MD, Assistant Professor  
 Hymie Kavin, MB, BC, Professor  
 Walid Khayr, MD, Professor  
 Sandeep Kholas, MD, Associate Professor  
 Ahmad Khraisat, MD, Clinical Assistant Professor  
 Gabriel Kibrit, MD, Clinical Associate Professor  
 Stuart Kiken, MD, Associate Professor  
 Daniel Kniaz, MD, Clinical Associate Professor  
 Paul Koh, MD, Clinical Assistant Professor  
 Panduranga Koya, MD, Clinical Assistant Professor  
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 Yoginder Kumar, MD, Clinical Assistant Professor  
 John Kyncl, MD, Clinical Assistant Professor  
 Miloslava Kyncl, MD, Clinical Assistant Professor  
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 Carl Lang, MD, Clinical Instructor

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 Robert Levin, MD, Associate Professor  
 Arnold Lim, MD, Clinical Assistant Professor  
 Brian Lipson, MD, Instructor  
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 Frank Maldonado, MD, Professor  
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 Mohammad Malik, MD, Clinical Assistant Professor  
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 Kenneth Margules, MD, Clinical Assistant Professor  
 Charles Martinez, MD, Clinical Associate Professor  
 Deebe Masood, MD, Assistant Professor  
 Thomas Mayer, MD, Lecturer  
 Nilesh Mehta, MD, Clinical Associate Professor  
 Jairo Mejia, MD, Assistant Professor  
 Ira Melnicoff, DO, Clinical Assistant Professor  
 Larry Milner, MD, Clinical Instructor  
 Barry Mizock, MD, Clinical Instructor  
 Sunita Mohapatra, MD, Associate Professor  
 Janos Molnar, MD, Research Assistant Professor  
 James Monahan, MD, Clinical Instructor  
 Reverend Clint Moore III, Clinical Instructor  
 Jeanette Morrison, MD, Clinical Assistant Professor  
 Walter Myalls, MD, Clinical Associate Professor  
 Nagapradeep Nagojithi, MD, Assistant Professor  
 Sreedhar Nair, MD, Lecturer  
 Kevin Nash, MD, Lecturer

Madeleine Neems, MD, Lecturer  
 George Nissan, DO, Clinical Assistant Professor  
 Donald Novey, MD, Clinical Instructor  
 Emmanuel Nwaokocha, MD, Assistant Professor  
 James O'Connell, MD, Lecturer  
 Steven O'Mahoney, MD, Lecturer  
 Kenneth O'Riordan, MD, Clinical Assistant Professor  
 Stuart Oserman, MD, Clinical Professor  
 Eric Olsen, MD, Clinical Assistant  
 Jennifer Ota, MD, Clinical Assistant Professor  
 Joseph Oyama, MD, Lecturer  
 Robert Parker, MD, Associate Professor  
 Parag Patel, DO, Clinical Assistant Professor  
 Martin Perlin, MD, Clinical Instructor  
 Lawrence Perlmutter, PhD, Professor  
 Jack Pinto, MD, Instructor  
 Gordon Pullen, PhD, Assistant Professor  
 Peter Puthenveetil, MBBS, Clinical Assistant Professor  
 Antanas Razma, MD, Lecturer  
 Geetha Reddy, MBBS, Lecturer  
 William Rhoades, DO, Clinical Assistant Professor  
 Bruce Riser, PhD, Professor  
 Susan Rogers, MD, Lecturer  
 Louis Rohr, MD, Lecturer  
 Joseph Rosman, MD, Associate Professor  
 Brian Rubenstein, MD, Clinical Assistant Professor  
 Lisa Russell, MD, Assistant Professor  
 Nagui Sabri, MD, Associate Professor  
 Franklin Saksena, MD, Instructor  
 Eugene Saltzberg, MD, Clinical Assistant Professor  
 Renee Schickler, MD, Lecturer  
 Patrick Schuette, MD, Lecturer

Maurice Schwartz, MD, Professor  
 William Seiden, MD, Lecturer  
 Pallavi Shah, MD, Assistant Professor  
 Jeffrey Shanes, MD, Clinical Associate Professor  
 Jerrold E. Shapiro, MD, Lecturer  
 Rita Shapiro, DO, Associate Professor  
 John Sheagren, MD, Professor  
 Edward Sherman, MD, Clinical Instructor  
 Mumtaz Siddique, MD, Assistant Professor  
 Lori Siegel, MD, Clinical Professor  
 Dean Silas, MD, Clinical Associate Professor  
 Marc Silver, MD, Lecturer  
 Rajindar Singh, MD, Clinical Professor  
 Sant Singh, MD, Professor  
 Myra Skluth, MD, PhD, Clinical Instructor  
 Earl Smith, MD, Professor  
 Ann Snyder, PhD, Associate Professor  
 Stephen Sokalski, DO, Lecturer  
 Otakar Sroubek, MD, Clinical Instructor  
 Alexander Starr, MD, Clinical Assistant Professor  
 Ronald Stavinga, MD, Lecturer  
 Robert Stein, MD, Lecturer  
 Arvey Stone, MD, Clinical Associate Professor  
 Lee Tai, MD, Lecturer  
 Manish Tanna, MD, Clinical Assistant Professor  
 Marc Tenzer, MD, Clinical Instructor  
 Ermias Tilahun, MD, Assistant Professor  
 Alfredo Tiu, DO, Clinical Assistant Professor  
 Phuong Tran, MD, Clinical Assistant Professor  
 Adam Treitman, MD, Lecturer

Atul Trivedi, MD, Clinical Instructor  
Mark Tucci, MD, Lecturer  
George Urban, MD, Clinical Instructor  
Thomas Vargish, MD, Professor  
Christine Veres-Thorner, MD, Associate Professor  
Cynthia Wait, MD, Clinical Instructor  
Max Weil, MD, PhD, Professor Emeritus  
Alvin Wells, MD, PhD, Clinical Assistant Professor  
Phillip Werner, MD, Professor  
William Werner, MD, MPH, Lecturer  
Maxwell Westerman, MD, Professor  
Paul Wiener, MD, Clinical Assistant Professor  
Stephen Winter, MD, Clinical Professor  
Daneen Woodard, MD, Lecturer  
John Xanthopoulos, MD, Instructor  
Phillip Zaret, MD, Associate Professor  
Edward Zarling, MD, Professor  
Michael Zdon, MD, Professor  
Poupak Ziaei, MD, Assistant Professor  
Demetrios Zikos, MD, Clinical Associate Professor

## Department of Microbiology and Immunology

Infectious diseases continue to pose the most significant threat to the health of peoples of the world and a substantial threat to the peoples of this nation. To prepare physicians to meet these problems, the Department of Microbiology and Immunology offers a three-quarters-long course in Medical Microbiology and Immunology in the second year of medical school. This provides a foundation for understanding the physiological and pathological processes of microbes, including viruses, bacteria, fungi, and protozoan and metazoan parasites, as well as the host-parasite relationships, including immunologic mechanisms in infectious diseases. Emphasized are the etiology, pathogenesis, epidemiology, prevention and treatment of infectious diseases. Special attention also is given to the immunological principles underlying cellular and humoral immunity, hypersensitivity, autoimmunity, immunodeficiencies and transplantation. These topics are presented to help the student understand the mechanisms by which humans, naturally or with medical assistance, are capable of combating infectious diseases. The training and research interests of the faculty members of the Department of Microbiology and Immunology largely coincide with the topics encompassed in the course. Through this diverse faculty, students are assured of receiving information that is accurate and current from individuals who are knowledgeable and enthusiastic about the content and significance of the material they present. The faculty considers the education of students to be a major responsibility and thrust; therefore, all professors seek to provide efficient and effective means of disseminating information through lectures, case studies in clinical microbiology and immunology, a study guide book including written syllabi of lecture materials, POPS (Patient-Oriented Problem Solving) sessions in immunology and an open-door policy for

those requiring help or information. In addition, sophomore and senior elective courses are offered throughout the year in selected areas of microbiology and immunology to students who are interested in a deeper understanding of infectious disease processes and immune mechanisms under guidance of individual faculty.

### Required Courses

#### **MMIC 600A, B, C Medical Microbiology and Immunology**

This course focuses on the fundamental molecular biology, genetics, metabolism, immunology and morphology of microorganisms. The first quarter is directed toward principles and concepts of microbiology and immunology; the second and third quarters, to infectious disease processes with an emphasis on clinical presentation, diagnosis, and treatment. Prerequisites: Cell Biology, Biochemistry, or approval of the department chairman. Faculty.

#### **MMIC 600A Medical Microbiology and Immunology**

Autumn quarter (6 units).

#### **MMIC 600B Medical Microbiology**

Winter quarter (6 units).

#### **MMIC 600C Medical Microbiology**

Spring quarter (3 units).

### Sophomore Elective Courses

#### **MMIC 652 Parasite Immunology (Research)**

This course trains students to become familiar with aspects of molecular biology and immunology of medically important parasites with particular reference to leishmaniasis. Emphasis will be placed on the mechanisms of host-parasite interactions in vitro and evasion of host immunity. Prerequisites: MMIC 600A Medical Microbiology and Immunology and Biochemistry. Winter quarter (time to be arranged). Dr. Chang.

**MMIC 653 Biology of Intracellular Parasitism (Research)**

This elective familiarizes students with mechanisms and regulation of infection with particular reference to intracellular parasites. The course teaches students to evaluate literature and research reports, plan and conduct laboratory research in molecular parasitology, utilize some biochemical and molecular biology techniques in a research program, and analyze and report lab data in a style consistent with journal publication. Prerequisites: MMIC 600A Medical Microbiology and Immunology, Molecular and Cell Biology, and Biochemistry. Winter quarter (time to be arranged). Dr. Chang.

**MMIC 660 Molecular Biology and Immunochemistry of the Immune System (Research)**

In this elective, students learn research methodologies, perform experiments, write up results and participate in discussions. Cell culture, isolation of nucleic acids, mapping and manipulating of cloned genes, SDS-PAGE of proteins, radioimmunoassays, and ELISA and flow cytometry are included. Students have actual laboratory research experience in studies in molecular biology of the immune system. All quarters. Prerequisite: Biochemistry and Cell Biology. Drs. Beaman and Gilman-Sachs.

**MMIC 664 Contemporary Topics in Clinical Immunology**

This course covers basic concepts, rationale and principles of clinical immunology assays used in the Clinical Immunology Laboratory for diagnosis and clinical evaluation. Students are expected to be able to describe clinical research as used in the Clinical Immunology Laboratory. All quarters, two hours per week (2 units). Drs. Beaman and Gilman-Sachs.

**Senior Elective Courses****MMIC 802 Molecular Biology and Immunochemistry of the Immune System (Research)**

In this elective, students learn research methodologies, perform experiments, write up results and participate in discussions. Cell culture, isolation of nucleic acids, mapping and manipulating of cloned genes, SDS-PAGE of proteins, radioimmunoassays, and ELISA and flow cytometry are included. Students have actual laboratory research experience in studies in molecular biology of the immune system. All quarters. Prerequisite: Biochemistry and Cell Biology. Drs. Beaman and Gilman-Sachs. Hours and units to be arranged.

**MMIC 808 Drug Resistance in Leishmania**

Students develop research experience in establishing cultures of Leishmania, develop drug resistance and attempt to initially correlate molecular mechanisms of drug resistance. All quarters (time to be arranged). Dr. Chang.

**Faculty and Associated Staff**

Kenneth Beaman, PhD, Professor  
Bala Chandran, PhD, Professor and Chair  
Kwang-Poo Chang, PhD, Professor  
David Everly, PhD, Assistant Professor  
Michael Fennewald, PhD, Associate Professor  
Alice Gilman-Sachs, PhD, Associate Professor  
Patricio Meneses, PhD, Assistant Professor  
Gulam Waris, PhD, Assistant Professor  
Chao-lan Yu, PhD, Associate Professor

**Department of Neurology**

The Department of Neurology is involved in four years of undergraduate medical education. In the first year, during the correlated Basic Neuroscience course, clinical material is discussed in conjunction with the basic science substrates. In the second year, the Department of Neurology contributes a notable portion of the Clinical Neuroscience course. Additionally, during the second year, as an integral part of the Essentials of Clinical Reasoning course, common neurological symptoms and their causes are presented by departmental faculty.



During the third year of medical school, students spend three weeks on the Neurology Clerkship. The clerkship emphasizes learning to recognize and manage patients with neurologic conditions, demonstration of the ability to perform a complete and reliable neurologic history, neurologic examination, and the achievement of incorporation of competencies that society and the medical school expect of a physician. During the fourth year, students have the opportunity to take electives in outpatient and inpatient neurologic practice settings.

## Required Course

### **MNEU 700      Neurology Clerkship**

This three-week required clerkship prepares students to recognize and begin the management of patients with neurologic conditions, to demonstrate the ability to perform a complete and reliable neurologic history and examination, and to continue their progress toward achieving the School's educational competencies. The student is provided with practical experience at the bedside, clinics, and teaching rounds, as well as varied learning environments including online quizzes, essay assignments, and simulated patient experiences. On the first day of the clerkship, the students perform a lumbar puncture on mannequin simulators.

The clerkships with a day long orientation and includes an introduction to neuroradiology, neurological disorders review, and a neurologic exam practicum. On the final day of the three week clerkship, students will complete their clerkship by taking the NBME Clinical Neurology Subject Examination (SHELF) to successfully complete their neurology clerkship.

Students in this clerkship receive their clinical instruction at Christ Hospital, Advocate Lutheran General Hospital, Condell Hospital, John H. Stroger, Jr., Hospital of Cook County, Hines Veterans Administration Medical Center, and the North Chicago Veterans Affairs Medical Center. Students interact with patients with a wide variety of neurological conditions on both outpatient and inpatient

services under the preceptorship of neurology attendings and residents.

Students' participation in small and large group discussions, didactic presentations, workshops, and conferences is required, facilitated, and supervised by preceptors at specific training sites. These activities ensure continued learning and application of the principles and practice of neuroscience and clinical neurology, and ensure that students' learning experience in neurology is an integral contribution to progress in becoming competent physicians.

## Senior Electives

### **MNEU 801      Advanced Clinical Neurology**

Clinical neurology is an elective course for students desiring experience in neurology beyond that received during the required core clerkship. Students attend clinics three mornings each week, examining patients and discussing the findings and treatment plan with supervising faculty. The remaining mornings will be spent in the neurophysiology laboratory, where students will participate in the performance of electroencephalography, electromyography, and other electrodiagnostic studies. The student seeking additional clinical experience may spend the afternoons in rounds with the patient care services. Students seeking research experience may spend the afternoons on a project of limited scope that is agreed upon in discussion with the Chair. A written summary of the project is required at the end of the course. The student is expected to attend division conferences. John H. Stroger, Jr., Hospital of Cook County. Dr. Serge Pierre-Louis.

**MNEU 803 Clinical Neurology Preceptorship**

Clinical neurology is a fourth-year course in which the medical student expands upon earlier training in the required clerkship in the diagnosis and management of patients with neurologic disease. The student presents to the preceptoring neurologist those patients “worked up” in both an inpatient and outpatient setting. In addition, the student sees selected consultations that are presented to the preceptoring neurologist for discussion. Opportunities are afforded the student to participate in various neurologic diagnostic studies, including electroencephalography, electromyography, nerve conduction, and evoked response neurophysiology. The importance of these diagnostic studies in the neurologic diagnosis is emphasized. Highland Park/Edgewater Hospitals. Dr. Neil Allen.

**MNEU 805 Clinical Neurology Preceptorship**

Clinical Neurology is a fourth-year course in which the medical student expands upon earlier training in the required clerkship in the diagnosis and management of patients with neurologic disease. The student presents to the preceptoring neurologist those patients “worked up” in both an inpatient and outpatient setting. In addition, the student sees selected consultations that are presented to the preceptoring neurologist for discussion. Opportunities are afforded the student to participate in various neurologic diagnostic studies, including electroencephalography, electromyography, nerve conduction, and evoked response neurophysiology. The importance of these diagnostic studies in the neurologic diagnosis is emphasized. Condell Medical Center. Dr. Reuben Weisz.

**MNEU 805 Neurology, Clinical Preceptorship**

This is an elective course for students desiring to become comfortable taking a neurologic history and examination, and familiar with the management of common neurologic problems, beyond the level achieved during the required core clerkship. Students see and perform histories and physicals, research

relevant literature, present to attending and complete discharge summaries on all hospital and ER neurology consults. Students also attend neurology rounds every morning, neurology clinic once a week and seizure clinic once a week. Additional instruction is achieved by reading assigned handouts and watching assigned videotapes. Norwalk Hospital. Dr. Louis Cuzzone.

**Faculty and Associated Staff**

Sandeep Aggarawal, MD, Lecturer  
 Neil Allen, MD, Clinical Professor  
 Nils Anderson, MD, CDR, MC, USN, Clinical Assistant Professor  
 Nutan Atre-Vaidya, MD, Professor and Interim Chair  
 Russell Bartt, MD, Lecturer  
 Jan Lewis Brandes, MD, Preclinical Curriculum Director  
 James Dorman, MD, Lecturer  
 Robert Egel, MD, Lecturer  
 Sudha Gupta, MD, Lecturer  
 Catherine Haberland, MD, Clinical Professor  
 Tariq Hassan, MD, Associate Professor  
 Robert Hazelrigg, MD, Clinical Assistant Professor  
 Mary Jost, MD, Lecturer  
 Michael Kelly, MD, Lecturer  
 Elizabeth Kessler, MD, Associate Professor  
 Jose Medina, MD, Clinical Professor  
 Timothy Mikesell, MD, Lecturer  
 Kenneth Neet, PhD, Professor  
 Serge Pierre-Louis, MD, Lecturer  
 Marc Reyes, MD, Professor  
 Rita Shapiro, DO, FACP, Associate Professor  
 Semyon Shulman, MD, Assistant Professor  
 Lafayette Singleton, MD, Assistant Professor  
 Eugene Thorner, MD, Clinical Assistant Professor  
 Donald Waxler, MD, Associate Professor  
 of Radiology  
 Reuben Weisz, MD, Professor  
 K. Michael Welch, MB, ChB, FRCP, Professor  
 Melvin Wichter, MD, Lecturer



## Department of Neuroscience

The mission of the Department of Neuroscience is to conduct high-quality research and scholarship, and to educate medical and graduate students about the molecular, cellular, anatomical, and clinical aspects of central nervous system function. Medical students are introduced to these concepts in the Medical Neuroscience Course (MNSC501), taken during the Spring Quarter of their first year.

Primary research interests of the faculty in the Department of Neuroscience include:

- Neuronal plasticity involved in drug addiction
- Roles of dopamine and glutamate in animal models of Parkinson's and Huntington's diseases
- Electrophysiological and neurochemical studies of the basal ganglia and the pathogenesis of schizophrenia
- Cellular and molecular analysis of Alzheimer's disease pathogenesis
- Factors regulating neurogenesis, neural differentiation, neuronal survival and therapeutic gene delivery, from development through senescence.

Opportunities for medical students to participate in these departmental research programs are available during the summer of the freshman and sophomore years.

### Required Course

#### **MNSC 501      Medical Neuroscience**

An interdisciplinary introduction to the structure and function of the nervous system team-taught by all faculty members in the Department of Neuroscience, plus several guest clinicians. This course provides a broad overview of modern neuroscience, emphasizing: 1) cellular and molecular neuroscience, including transmitter neurochemistry, neural plasticity, and the biology of neural stem cells; 2) systems neuroscience, focusing on sensory, motor, limbic and higher cognitive systems; 3) neuroanatomy taught in small-group sessions utilizing human cadaver brains and interactive computer-based learning; and 4) clinical neuroscience, including

correlations on CNS infections, multiple sclerosis, peripheral neuropathy, Parkinson's and Huntington's diseases, disorder of muscle, stroke, brainstem lesions, seizure disorders, sleep disorders, loss of consciousness, schizophrenia, affective disorders, and Alzheimer's disease. Coordinated by Dr. Eliot. Prerequisites: Mammalian Physiology. Spring quarter, 8 hours per week (7 units).

### Sophomore Elective

#### **MNSC 603      Research in Neuroscience**

The Department of Neuroscience offers student research training opportunities in a number of disciplines, to be arranged by the faculty advisors. Coordinated by Drs. Marr Peterson, Stutzmann, West, and Wolf.

### Multidisciplinary Courses

#### **GNSC 505 Brain Dissection**

An intensive short course, where students will carry out a detailed dissection of a human cadaver brain. This dissection will expose them to all the major areas of the human forebrain, brainstem, and cerebellum, including major fiber tracts, subcortical nuclei, and their connections to brainstem and cortical structures. Special emphasis will be placed on human limbic structures and the circuitry underlying emotion, addiction, and other psychiatric disorders. Dr. Hazelrigg, Fall quarter, 1 credit.

### Faculty and Associated Staff

Marjorie Ariano, PhD, Professor  
Lise Eliot, PhD, Associate Professor  
Robert Marr, PhD, Assistant Professor  
Daniel Peterson, PhD, Associate Professor  
Grace Stutzmann, PhD, Assistant Professor  
Anthony West, PhD, Associate Professor  
Marina Wolf, PhD, Professor and Chair

## Department of Obstetrics and Gynecology

The Department of Obstetrics and Gynecology is a field of clinical medicine providing primary and secondary health care for women. The Department of Obstetrics and Gynecology at Rosalind Franklin University of Medicine and Science provides didactic and clinical teaching for students and residents with direct exposure to patients and hands-on experience. Students are provided a core of information and taught clinical skills pertinent to the female reproductive system. Subspecialty exposure within the fields of obstetrics and gynecology is also provided in organized fashion.

Affiliation with Mount Sinai Hospital Medical Center of Chicago as the primary site of student education has provided educational and clinical dimensions to the Department of Obstetrics and Gynecology. Mount Sinai, John H. Stroger, Jr., Hospital of Cook County and Lutheran General Hospital, with their large active Obstetrics and Gynecology services, can offer broad, in-depth clinical training for both students and residents.

There is ongoing research by faculty members in a number of fields in the discipline, including applications of ultrasonography, gynecologic oncology, reproductive endocrinology, urogynecology, and maternal-fetal medicine.

### Required Course

#### **MOBG 700     Obstetrics/Gynecology Clerkship**

This six-week required clerkship at John H. Stroger, Jr., Hospital of Cook County, Mount Sinai Hospital and Lutheran General Hospital provides the student with experience in all aspects of obstetrics and gynecology. This includes general obstetrics and gynecology and the subspecialties of endocrinology, oncology and perinatology.

Students are assigned to resident teams in each area and

are expected to function as members of those teams. In addition to the department's regular conference schedule and rounds, there are specific didactic sessions for students. These sessions include a daily lecture series covering the core curriculum. Student/faculty interaction is enhanced through small preceptor group meetings.

### Senior Elective Courses

#### **MOBG 810     Student Internship in Obstetrics and Gynecology**

The rotation provides in-depth clinical exposure for the fourth-year medical student. Students have the opportunity to act as the primary physician for patients under the close supervision of the senior resident and attending physician. The student may choose to rotate on either the gynecology service, the complicated obstetrics service, or the labor and delivery ward.

#### **MOBG 820     Urogynecology**

This elective offers an introduction to diagnosis and treatment of incontinence and pelvic organ prolapse. The student will be involved in the office evaluation of patients and participate in surgical procedures. Observation of urodynamic testing is also included.

#### **MOBG 830     Urogynecology**

This course will emphasize the importance of properly recognizing, understanding, and treating patients with urogenital defects leading to urinary incontinence. The normal female urogenital anatomy, physiology, pharmacology, and pathology will be reviewed and explained. Causes leading to incontinence will be identified.

Methods to establish a proper diagnosis among the several forms of urinary incontinence will be introduced and demonstrated on patients requiring the evaluations.

Finally, physiological, pharmacological, and surgical methods and treatment options will be discussed and, if possible, demonstrated.

**MOBG 840 Maternal-Fetal Medicine**

The senior elective in Maternal-Fetal Medicine should be at least four weeks for optimal benefit. In the inpatient area, the student will follow cases of antepartum patients with pregnancy complications with the supervision of a senior resident and perinatologist. There are daily teaching rounds on these patients. The student will also be involved with delivery of high-risk patients. In the outpatient perinatal center, the student will be able to work with a senior resident and attending. They will be exposed to ultrasound studies, NST and outpatient management of high-risk conditions (diabetes, hypertension, congenital anomalies, etc.).

**MOBG 850 Gynecologic Oncology**

This is a senior elective that focuses on the diagnosis, treatment and follow-up of gynecologic malignancies. Participation in surgery is required. Experience in benign breast disease is included.

**MOBG 870 Obstetrics and Gynecology Research**

This elective is part of a clinical research study to examine the incidence of premenstrual syndrome (PMS) among the population of John H. Stroger, Jr., Hospital of Cook County. Despite the large amount of research in the area of PMS, there have been no studies to date looking at the racial mix in this population (primarily African American, lower socioeconomic group) of women. Phase Two examines the association between PMS and domestic violence. Students will be in clinics Monday through Friday, 9:00 a.m. to 5:00 p.m., seeing patients and collecting questionnaires. In addition, the student will attend evening clinics as necessary. Data entry will be done daily. Finally, the student will be responsible for completing a written incidence report on study findings and initiating Phase Two of the study.

**Faculty and Associated Staff**

Barbara Alif, MS, Clinical Instructor  
 Bharathi Bhoopathi, MD, Clinical Assistant Professor  
 Josef Blankstein, MD, Professor and Chair

Joel Brasch, MD, Clinical Assistant Professor  
 Paula Cavens, MD, Assistant Professor  
 Helen Cejtin, MD, Assistant Professor  
 David Czuckerberg, MD, Clinical Assistant Professor  
 James Dolan, Jr., MD, Lecturer  
 Uwe Freese, MD, Professor Emeritus  
 Abolhamid Hosseinian, MD, Clinical Professor  
 Thomas Iannucci, MD, Lecturer  
 Theodore Jarrett, MD, Assistant Professor  
 Ian Jasenof, MD, Lecturer  
 Hyung-Shik Kang, MD, PhD, Clinical Professor  
 Louis Keith, MD, PhD, Clinical Professor  
 James Keller, MD, Lecturer  
 Theresa Kepic, MD, Clinical Assistant Professor  
 Prakash Khatkhate, MD, Assistant Professor  
 Richard Kurzel, MD, PhD, Clinical Professor  
 Joanne Kwak-Kim, MD, Associate Professor  
 Edward Lampley, MD, Associate Professor  
 Brian Locker, MD, Lecturer  
 Randee Lopata, MD, Lecturer  
 Harilaos Mantouvalos, MD, PhD, Adjunct Associate Professor  
 Ligaya Marasigan, MD, Clinical Assistant Professor  
 Ellen Mason, MD, Instructor  
 Michael Moen, MD, Lecturer  
 Matthew Nash, MD, Lecturer  
 Michael Noone, MD, Lecturer  
 Therese O'Connor, MD, Lecturer  
 Godwin Onyema, MD, Clinical Instructor  
 Daniel Pesch, MD, Lecturer  
 Bruce Piolet, MD, Lecturer  
 Linda Powell, MD, Assistant Professor  
 Maureen Ruder, MD, Assistant Professor  
 Julie Schmidt, MD, Assistant Professor  
 Lemuel Shaffer, MD, Clinical Assistant Professor  
 Beth Sum, MD, Lecturer  
 Eddie Swift, MD, Assistant Professor  
 Ahmad Taheri, MD, Associate Professor  
 Stephanie Tennery-Lanken, MD, Instructor

Maria Teresi, MD, Assistant Professor  
 Richard Trester, MD, Clinical Assistant Professor  
 Megan Tuynman-Hazra, DO, Clinical Assistant Professor  
 Brett Vassallo, MD, Lecturer  
 Daniel Wu, MD, Clinical Assistant Professor

## Department of Ophthalmology

The Department Ophthalmology provides to medical students the skills that are needed by all physicians in order to evaluate the eye and visual system. Through a series of didactic sessions, students are taught to measure and record visual acuity, detect abnormal pupillary responses, characterize ocular deviations (strabismus) and abnormal eye movements, detect abnormalities of the optic disc and posterior pole by direct ophthalmoscopy, and how and when to initiate management and/or physician referral for ocular and visual system abnormalities.

As part of the Essentials in Clinical Reasoning program, first second year students may elect to have a half-day experience in clinical ophthalmology under the supervision of Dr. Troy Close at the North Chicago Veterans Hospital.

Junior students taking their surgical clerkship at John H. Stroger, Jr., Hospital of Cook County or Mount Sinai Hospital may take a two-week elective in clinical ophthalmology at John H. Stroger, Jr., Hospital of Cook County. Senior students may take a two-week elective in clinical ophthalmology. Both junior and senior electives are centered in the eye clinic at John H. Stroger, Jr., Hospital of Cook County and afford students the opportunity to examine patients and formulate differential diagnoses and treatment plans under the supervision of an ophthalmology resident or attending ophthalmologist.

### **MOPH 805 Clinical Ophthalmology**

Students will be working with John H. Stroger, Jr., Hospital of Cook County Ophthalmology housestaff

under the direction of Drs. Axelrod, Becker, Dray, Dwarakanathan and Whelchel. Students will examine and evaluate patients in the Eye Clinic. Students may write their findings in the chart. Only residents and attendings will have “sign-off” authority for disposition. Students will be expected to attend regular lectures and conferences and may be asked to give a brief (20 minute) presentation on a clinical topic.

Students may elect to spend an additional four weeks doing a “mini” research project under the direction of Dr. Ahuja or other faculty members.

## Faculty and Associated Staff

Richard Ahuja, MD, Assistant Professor  
 Monique Anawis, MD, Clinical Instructor  
 Alan Axelrod, MD, Professor and Chair  
 Norbert Becker, MD, Clinical Assistant Professor  
 Troy Close, MD, Lecturer  
 Philip Dray, MD, Assistant Professor  
 Joseph Kiernan, MD, Clinical Instructor  
 Oksana Mensheha, MD, Lecturer  
 Mildred Olivier, MD, Clinical Assistant Professor  
 Daniel Ritacca, MD, Clinical Assistant Professor  
 William Stiles, MD, Clinical Assistant Professor  
 Robert Weiss, MD, Lecturer  
 Joan Whelchel, MD, Lecturer

## Department of Pathology

The Department of Pathology provides instruction to medical students in a sophomore-level course required of all students, as well as in a set of elective course offerings. Participation in research is also available.

The required course is an introduction to the “study of disease.” The course is based on, and integrated with, the preceding and concurrent basic science presentations of other departments, and serves as a bridge to the clinical disciplines that follow. Disease processes are initially viewed as manifestations of a common set of mechanisms of injury, thus providing a basic foundation for the course. This is followed by a survey of the principal disorders of each organ system. The course is conducted as a three quarter lecture and practicum set of exercises. A hospital-based honors option is available to selected students during the second and third quarters.

Senior elective clerkships are offered in anatomic pathology, laboratory medicine, and forensic pathology. Clerkships are conducted at Mount Sinai Hospital Medical Center and at the office of the Medical Examiner of Cook County.

Graduate programs leading to the MS and PhD degrees, as well as the MS/MD programs are currently in abeyance.

### Sophomore Required Courses

#### **MPAT 600A    General and Systemic Pathology**

The biologic bases and mechanisms of disease, including inflammation and repair, and cell injury by infectious, immunologic, vascular, genetic, physical, chemical, and neoplastic mechanisms, followed by a beginning survey of disease with emphasis on clinical pathologic correlations. Fall quarter. Five lecture hours and two practical session hours per week (7 units). Faculty.

#### **MPAT 600B    Systemic Pathology**

Continuation of the survey of human disease. Winter

quarter. Five lecture hours and two practical session hours per week (6 units). Faculty.

#### **MPAT 600C    Systemic Pathology**

Completion of the survey of human diseases. Spring quarter. Five lecture hours and two practical session hours per week (6 units). Faculty.

### Sophomore Elective Courses

#### **MPAT 622    Special Projects in Pathology**

Students participate in a research project or other individualized program under the direction of a faculty member. Prerequisite: Consent of department chair. Hours and credit to be arranged. Faculty.

#### **MPAT 630    Pathology Literature Review**

The student prepares a formal paper based on library research or on a laboratory or clinical research project conducted by the student. Credit for this course depends on both acceptance of the written paper and an oral presentation to the department. Fall, Winter and Spring quarters (3 units). Dr. Szanto and faculty.

#### **MPAT 631    Advanced Hematology**

This elective is an in-depth consideration of diseases of the hematopoietic and lymphoid systems and of hemorrhagic disorders, with considerable emphasis on etiology, pathogenesis and clinical diagnostic approaches. The subjects covered are elaborations of topics previously introduced during the sophomore pathology course for medical students. Spring quarter, three hours lecture and discussion per week (3 units). Dr. Schneider.

### Senior Elective Courses

#### **MPAT 800    Pathology Clerkship**

Hospital clerkship experiences taken in four-week modules may be devoted to autopsy pathology, surgical pathology, ultrastructural studies, clinical chemistry, or clinical diagnostic microbiology. Clerkships are individually arranged in order to accommodate a broad range of student interests. Prerequisites: MPAT 600A, B, C. Faculty.



### **MPAT 835 Forensic Pathology Clerkship**

The student is assigned to the Cook County Medical Examiner's Office for a period of four weeks, during which he or she participates in medicolegal autopsies. Students may also participate in toxicologic studies and "crime lab" activities if they choose. Research experiences are also available. Prerequisites: MPAT 600 A, B, C. Dr. Jones.

### **Faculty and Associated Staff**

Elham Abboud, MD, Clinical Assistant Professor  
Seana Aldabagh, MD, Clinical Assistant Professor  
Saroja Bharati, MD, Clinical Professor  
Moirra Breen, PhD, Clinical Associate Professor  
Antonio Chedid, MD, Professor  
Dilipkumar Dharkar, MD, Clinical Professor  
Dominik M. Duelli, PhD, Assistant Professor  
Bourke Firfer, MD, Assistant Professor  
Jack Garon, MD, Professor  
Catherine Haberland, MD, Clinical Professor  
Terence Harper, MD, Clinical Instructor  
Nancy Jones, MD, Professor  
Ning Liu, MD, PhD, Assistant Professor  
Chandrakant Modi, MD, Clinical Assistant Professor  
Marc Reyes, MD, Professor  
Osvaldo Rubinstein, MD, Associate Professor  
Arthur Schneider, MD, Professor and Chair  
Satinder Singh, MD, Clinical Associate Professor  
Philip Szanto, MD, Associate Professor  
William Thomas, MD, Clinical Professor  
Elliot Weisenberg, MD, Associate Professor

### **Department of Pediatrics**

The Department conducts a six-week required clerkship in the junior year, participates in teaching newborn history and physical, nutrition and certain other subjects in the first two years of medical school, and offers senior electives in such subjects as Adolescent Medicine, Child Abuse & Neglect, Ambulatory Pediatrics, Genetics, Neurology and

Hematology/Oncology.

The Department of Pediatrics is dedicated to presenting the practice of pediatrics in a caring, empathic manner, thus providing a role model for future physicians. The pediatric junior clerkship is designed and implemented in such a manner as to facilitate each student's learning of the principles of pediatric medicine and how those principles relate to individuals from birth to the end of adolescence. Emphasis is placed upon patient care at all stages of the clerkship.

Students engaged in the Junior Year Pediatric Clerkship at CMS find that close, personal interaction between faculty, staff and students is encouraged and nurtured. Faculty members are available for individual instruction and performance evaluation. CMS students are able to interact with a wide range of clinical patients as a result of the diverse clinical facilities used for teaching purposes.

Members of the department are involved in various research projects at their own hospitals.

### **Required Course**

#### **MPED 700 Pediatrics Clerkship**

This clerkship emphasizes close faculty supervision by full-time CMS faculty as well as full-time attending staff physicians from the clerkship site hospital. This includes personal attention to the elicitation of histories, performance of physicals, patient write-ups, chart notes and invasive and noninvasive technical procedures. Students are assigned to a service at one of the hospitals and serve as full-functioning members of the healthcare team composed of junior and senior residents and attending staff physicians.

The clerkship is currently conducted at Christ Children's Hospital, Cook County Children's Hospital, Mount Sinai Hospital Medical Center, Lutheran General Children's Hospital and St. Anthony Hospital. Students rotate through ambulatory and inpatient pediatric units, neonatology and the emergency room. Didactic teaching is presented in the form of lectures, seminars, individual presentations, ward rounds and student bedside rounds.

## Senior Elective Courses

### **MPED 803     Ambulatory Pediatrics**

The four-week rotation in Ambulatory Pediatrics is centered at the pediatric clinic in the Yacktmann Pavilion of Lutheran General Children's Hospital. The student will have the opportunity to see patients from infancy through adolescence under the supervision of precepting hospital-based pediatricians.

Patients present with a broad range of acute and chronic pediatric problems, as well as for health maintenance and preventive medicine visits. Additional time can be spent visiting various multidisciplinary clinics, as interest allows, in order to better understand the role of various members of the healthcare team. One morning per week will be spent at the Lutheran General Children's Day Care Center, where the student will have an opportunity to see the developmental patterns of healthy children as well as to explore the mechanisms for disease transmission in group care settings. Appropriate readings will be assigned from the recent pediatric literature and attendance at the various noontime departmental conferences is recommended. Dr. Susan Unfer.

### **MPED 805     Pediatric Subinternship**

The Pediatric Subinternship provides the senior medical student an opportunity to function, with supervision, as the primary caretaker of inpatients on pediatric and

adolescent units. During the rotation, the student will be expected to improve clinical skills by performing history and physical examinations, developing problem lists of differential diagnoses, forming final physiological assessments, and outlining appropriate diagnostic and therapeutic plans. The student is expected to function in much the same manner as a first-year pediatric resident. The student will write daily notes and orders, which will be countersigned by the supervising residents. The student will have the opportunity to perform routine diagnostic procedures on assigned patients. The student will be expected to share night-call under the supervision of the residents every fourth night. The student will also be expected to participate in morning report, sign-out rounds, attending rounds and other teaching conferences. The student is expected to read about each patient's disorder, thereby improving medical knowledge and contributing positively to the patient's care. The student will learn an appreciation for a multidisciplinary approach to the patient with complex and chronic medical conditions, and work hand-in-hand with therapists and other paramedical personnel in planning extended care needs for these patients. The student will be involved in the important issue of acute and chronic pain management of the hospitalized child. The student will gain experience in serving as a member of an inpatient care team.

Dr. Jaye Schreier.

### **MPED 808     Emergency Care**

Students will be working with attending physicians and residents in the emergency room at John H. Stroger, Jr., Hospital of Cook County. The team of ER and clinic staff also consists of nurses, nurse practitioners and other support staff. Students will be given gradually increasing responsibilities of evaluating, assessing and planning management strategies under supervision and guidance of attending physicians and residents. Dr. Thomas Senko.



**MPED 812      Genetics**

Students selecting this elective at Cook County Children's Hospital are expected to become familiar with the principles of human genetics (the cell cycle, mechanisms of chromosomal abnormalities, fundamentals of enzyme chemistry and principles of Mendelian and multifactorial inheritance). Clinical genetic disorders, such as autosomal and sex chromosomal abnormalities and inborn errors of amino acid, sugar mucopolysaccharide, carbohydrate and lipid metabolism, are covered.

Basic laboratory techniques, including karyotyping, tissue cultures and quantitative chemistry, are presented along with the principles of genetic counseling. All quarters, one student at a time, four to eight weeks except by special arrangements, 40 hours per week. Prerequisite: MPED 700. Dr. Susan Echiverri.

**MPED 814      Pediatric Hematology/Oncology**

This elective offers the student the opportunity to elicit histories and perform physicals on patients with oncologic and hematologic problems and to follow through with the appropriate laboratory investigations. Both inpatient and outpatient facilities at Cook County Children's Hospital are available for this experience.

The course covers exposure to pediatric hematologic problems and malignancies. Emphasis is placed on the development of insight into the general management of and respect for the general needs of the patient and family. All quarters, one student at a time, four to eight weeks except by special arrangement. Prerequisite: MPED 700. Dr. Lilly Matthew.

**MPED 816      Ambulatory Pediatrics**

This elective provides students with exposure to a wide range of problems encountered in the delivery of medical care to children in an ambulatory setting. The student is assigned to pediatric acute care and emergency services where crisis-oriented care is provided. Assignment to a selected pediatric subspecialty is also available.

The elective provides experience at John H. Stroger, Jr., Hospital of Cook County in obtaining an accurate, complete pediatric history, as well as in securing physical examination data. All quarters, one or two students maximum, four to six weeks. Prerequisite: MPED 700, and approval of Ambulatory Pediatric chair. Dr. Jay Mayefsky.

**MPED 818      Child Abuse and Neglect**

This elective is designed for students with an interest in child advocacy who are planning a career in pediatrics, family practice, pediatrics/medicine or emergency medicine. Students will have the unique opportunity to spend four weeks working with the Division of Child Protective Services at Cook County Children's Hospital. Child Protective Services provides coordinated multidisciplinary evaluations to children presenting to John H. Stroger, Jr., Hospital of Cook County who are suspected of being abused and/or neglected.

Students doing this elective will work one-on-one with the attending physicians in the division and will actively participate in the work-up, management and follow-up care of children suspected of being mistreated, and can expect to learn medical aspects of physical abuse, sexual abuse and neglect (including failure to thrive). In addition to participating in the medical work-up, the student will have the opportunity to observe and participate in the developmental evaluations of patients and in the psychosocial evaluations of patients and their families. The students will also attend and provide care in the weekly comprehensive follow-up clinic for abused and neglected children. The student will learn about the role of the physician as advocate for the child within the Child Welfare and legal systems and will learn about the physician's role in coordinating multidisciplinary care for high-risk patients and their families. Dr. Michele Lorand.

**MPED 820 Adolescent Medicine**

This elective will provide students the opportunity to work with adolescents and young adults aged 13 to 25 years in a variety of clinical settings using a multidisciplinary approach to care. The student will work directly with attending physicians, psychologists, social workers, mid-level practitioners, an adolescent medicine fellow and residents. All patient encounters will be conducted under the supervision of an attending physician.

Lecture topics include Pubertal Growth and Development, Menstrual Disorders, Issues of Sexuality (Adolescent Pregnancy, Sexually Transmissible Infections and Contraception), Chronic Illness and the Sports Preparticipation Exam.

Residents in Adolescent Medicine are required to conduct a research project during their rotation. Students will have the option to join the resident(s) in their project or develop their own. The projects are supervised by the Divisional attending staff and a formal presentation of the project is held on the last day of the rotation. Dr. Lisa Henry-Reid.

**MPED 836 Pediatric Endocrinology**

This elective will introduce the student to the endocrinology of infants, children and adolescents. The application of basic endocrine physiology in the diagnosis and treatment of these disorders will be emphasized. There will also be exposure to comprehensive diabetes management. Highly outpatient oriented. Dr. Kanika Ghai.

**MPED 837 Pediatric Gastroenterology/Nutrition/Hepatology**

This elective will familiarize the student with the evaluation, diagnosis, and treatment of pediatric gastrointestinal, hepatic, and nutritional disorders. Special emphasis will be placed on methodology of history taking, problem list formation, use of laboratory investigations, and interpretation of radiographs. Adequate exposure to GI procedures will be provided.

Daily teaching rounds are held on the pediatric and adolescent units, as well as in the NICU and PICU. The student is expected to evaluate all new consultations first, and then present to the attendings for discussion. Formal conferences are held regularly. The students are encouraged to use the library, conduct literature searches, and present formal talks, and attend GI/Nutrition/CF Clinics. Dr. T.S. Gunasekaran.

**MPED 838 Pediatric Hematology/Oncology**

Intensive multidisciplinary clinical/clinical research elective in pediatric hematology-oncology that will involve students in daily inpatient rounds and ongoing care, conferences, outpatient clinic sessions, and inpatient consultations. Students will have the opportunity to follow patients in-depth, be involved in procedures and be exposed to peripheral blood and bone marrow morphology in-depth, and be exposed to ongoing clinical research in pediatric hematology-oncology. There are regular didactic teaching conferences covering a broad spectrum of pediatric hematology-oncology topics. The students are required to review textbook and pertinent review journal articles in pediatric hematology-oncology. Drs. Jong Kwon and William Goodell.

**MPED 840 Clinical Genetics**

This is a busy clinical consultation service with emphasis on prenatal diagnosis, genetic counseling, and dysmorphology and heritable metabolic disease evaluations. The student will also attend multidisciplinary clinics for children with handicapping conditions and craniofacial anomalies, prepare karyotypes in the Cytogenetics Laboratory and present at least one short report at weekly Journal Club sessions. Drs. Carol Booth and Debra Rita.

**MPED 841 Pediatric Infectious Disease**

The student on service evaluates approximately seven new inpatients and five new outpatients per week, in addition to assessing hospitalized patients once daily on rounds. Rounds are always with the attending who has a minimum of four hours daily contact with the student. Outpatient clinic is held three half-days per week. The student is expected to spend a minimum of two hours daily reading and researching cases in the library or using the attending physicians personal library. Drs. Julie Stamos, Ronda Oram, Jean Kim, and Elaine Rosenfeld.

**MPED 842 Pediatric Critical Care**

The PICU is the nucleus of a certified Level-1 pediatric trauma center, the Midwest Pediatric Brain Tumor Center, and a congenital cardiac surgical program. Our patients are very high acuity, ranging in age from 1 day to 19 years, and usually requiring sophisticated monitoring and interventions. We care for children with multisystem trauma, severe traumatic brain injury, seizures, respiratory failure, congenital heart disease and cardiac failure, cancer, septic shock and other overwhelming infections, renal failure, and more. As part of the PICU team, the student will gain experience with invasive hemodynamic monitoring, resuscitation and management of shock, conventional and high-frequency mechanical ventilation, the use of nitric oxide for pulmonary hypertension, renal replacement therapies, intracranial pressure monitoring and management, extracorporeal membrane oxygenation, procedural sedation, and care of the postoperative cardiac patient. The majority of teaching, which is substantial, happens at the bedside. The PICU is staffed by two second-year pediatric residents and a pediatric critical care fellow, and supervised by four full-time pediatric intensivists with additional expertise in neonatology, cardiac intensive care, pulmonology, and complementary medicine. The PICU

also has an established pediatric critical care medicine fellowship program and a pediatric critical care transport team. Drs. S. Havalad, M. Quaid, K. Hedayat, and M. Tsifansky..

**MPED 843 Pediatric Nephrology Preceptorship**

The student will participate in the evaluation and management of inpatient consultations and outpatient visits to the Pediatric Nephrology service. Typical problems include electrolyte abnormalities, hypertension, nephrotic syndrome, enuresis, urinary tract infection and acute renal failure. Dr. Richard Kaplan.

**MPED 844 Pediatric Cardiology Introduction**

The major goal of this elective is to help the student develop problem-solving skills in pediatric cardiology, based on clinical pathologic and physiologic principles. The student will actively participate in daily care of inpatients (ward, ICUs, pre/post-op, consultations) and outpatients; interpretation of exercise testing and cardiac catheterization; review of pathology specimens; and formal teaching sessions (didactic and Socratic). Detailed goals, objectives and scheduled activities are available upon request. Drs. I. DuBrow, S. Neuberger, and David Thoele.

**MPED 845 Neonatology**

This program, a rotation through the NICU at Lutheran General Children's Hospital, is intended to acquaint the student with the current management of the high-risk newborn during the immediate perinatal period, including the delivery room and the Neonatal ICU. This is a clinical experience, which will expose the student to the diagnosis and management of a broad spectrum of neonatal disorders. Drs. D. Sheftel, R. Benawra, J. George, B. Puppala, T. Sheagren, and E. Greenglass.

**MPED 847 Pediatric Pulmonology/Cystic Fibrosis**

This elective will provide the student with an understanding of the pathophysiology, differential diagnosis, management and prognosis of acute and chronic respiratory disorders in infants, children and adolescents. This includes the appropriateness and risks of various diagnostic and therapeutic procedures, interpretation of test results, and assessment of response to therapy. The student will spend time in the pediatric pulmonary function lab, radiology, and may observe other laboratory tests or procedures such as bronchoscopy. Daily teaching rounds are held in the pediatric and adolescent units. The student will be expected to evaluate all new consultations first, then present to the attending physician for discussion and management. The student will attend outpatient pulmonology clinics three times a week and the cystic fibrosis center clinic once a week, where a multidisciplinary team participates in the care of a large cystic fibrosis population. A brief oral presentation will be expected at the end of this rotation. Dr. Gabriel Aljadeff.

**MPED 848 Neonatology**

The division of neonatology at John H. Stroger, Jr., Hospital of Cook County, a Level 3 tertiary care facility, is responsible for the NICU, normal nursery, newborn resuscitations, the high-risk infant follow-up program, and early intervention programs. Newborn infants with

a wide spectrum of problems are admitted to the unit from the nurseries in the hospital and from several Level 2 hospitals in the community. The student will spend four weeks in the NICU; a week-long rotation through the normal nursery can be arranged if requested by the student. The student will be assigned to work with one of the senior pediatric residents rotating through the Unit. Approximately two to three patients will be assigned to the care of the student after orientation is completed. The student and resident will work under the close supervision of a fellow and an attending neonatologist. Dr. Suma Pyati.

**MPED 849 Pediatric Neurology**

Senior medical students may spend a one-month elective on the pediatric neurology service. The curriculum for the pediatric neurology elective includes such topics as epilepsy, cerebral palsy, developmental disorders, learning disabilities, attention deficit disorder, infectious diseases of the central nervous system, and neuromuscular disorders. Drs. Nishant Shah, Mohammad Ikramuddin, and Farha Khan.

**MPED 852 Inpatient Pediatric Subinternship**

This elective will allow the student to function, with supervision, as the primary caretaker of inpatients on the general pediatric service. The student is expected to be the primary coordinator of care for the patients assigned. The student will write daily notes and orders that will be countersigned by the supervising residents. The student will have the opportunity to perform routine ward procedures, such as venipuncture, insertion of intravenous catheters, and lumbar puncture. The student will be expected to participate in morning report, sign-out rounds, attending rounds, and other teaching conferences as scheduled. The student is expected to read about each patient's disorder, thereby improving medical knowledge and data base. Dr. Jaye Schreier.

**MPED 854 Pediatric Critical Care**

The PICU provides definitive intensive therapy and maximum surveillance for the critically ill or injured child. It is supervised by full-time pediatric intensivists who act as consultants to all of the patients and as teachers to the house staff. Drs. Luis Torero and Roy, and fellows.

**MPED 855 Pediatric Radiology (Available on a limited basis)**

The Pediatric Radiology elective takes place in the Pediatric Radiology section of the Yacktmann Children's Pavilion, Lutheran General Children's Hospital. At this site, there are dedicated facilities to provide pediatric fluoroscopy, routine radiography, ultrasound and CT. MR examinations are readily available through the main department. Nuclear medicine is performed in the separate department of nuclear medicine. In addition to the student's rotation through the Pediatric Radiology section, time is provided to rotate through the other imaging areas. The student has a close relationship with faculty on a day-to-day basis with one-to-one teaching in the mornings as studies are read or performed. Afternoon time is left for students to review extensive teaching file material consisting of CD-ROM, videodisc, videotape and slide tape programs. A core curriculum is established using these teaching aids. Afternoons are also utilized for the student to complete an assigned project required for the completion of the rotation. While doing the Pediatric Radiology elective, students are encouraged to attend other pediatric teaching conferences, as well as conferences given or supported by the Department of Radiology. Dr. John McFadden.

**MPED 856 Clinical Pediatrics**

This clerkship is designed to provide a broad-based experience in primary care pediatrics with an emphasis on comprehensive healthcare planning, preventive medicine, and continuity of care. This program will be based at offices in Deerfield and Libertyville, Illinois. The student will see primary care patients individually with

attending supervision. Students are expected to participate in didactic lectures 1–2 hours per week. Dr. Bill Wittert.

**MPED 857 Pediatric Pulmonology**

During this rotation, the medical student will follow patients, both outpatient and inpatient. The student will become familiar with various procedures, including surgical and office procedures. The student will develop a working knowledge of the specifics of pulmonary medicine involving children. Dr. Akhter.

**MPED 858 Pediatrics Hematology/Oncology**

During this rotation, the medical student will follow patients, both outpatient and inpatient. The student will become familiar with various procedures, including surgical and office procedures. The student will develop a working knowledge of the specifics of hematology and oncology involving children. Drs. Salvi and Hayani.

**MPED 859 Pediatric Development**

During this rotation, the medical student will follow patients, both outpatient and inpatient. The student will become familiar with various procedures, including surgical and office procedures. The student will develop a working knowledge of the specifics of developmental issues involving children. Dr. Desch.

**MPED 860 Pediatric Gastroenterology**

During this rotation, the medical student will follow patients, both outpatient and inpatient. The student will become familiar with various procedures, including surgical and office procedures. The student will develop a working knowledge of the specifics of GI and nutrition involving children. Dr. Nagpal.

**MPED 861 Pediatric Endocrinology**

During this rotation, the medical student will follow patients, both outpatient and inpatient. The student will become familiar with various procedures, including surgical and office procedures. The student will develop a working knowledge of the specifics of endocrinology involving children. Dr. Ziai.



**MPED 862 Pediatric Emergency Medicine**

Student is responsible to take history from child or parent(s) and do a complete examination and make a preliminary working diagnosis with a plan to work up and manage. The student discusses the child's care with attending physician. The student learns Emergency Department procedures, minor suturing, I&D, splinting, etc., under the attending physician's supervision. The student is closely supervised by the attending physician and has a very close working relationship.

**Faculty and Associated Staff**

Gabriel Aljadeff, MD, Assistant Professor  
 Raghubir Benawra, MD, Associate Professor  
 Frank Belmonte, MD, Assistant Professor  
 Mitchell Blivaiss, MD, Clinical Instructor  
 Ira DuBrow, MD, Professor  
 Susan Echiverri, MD, Assistant Professor  
 Esperanza Garcia-Alvarez, MD, Assistant Professor  
 Kanika Ghai, MD, Assistant Professor  
 Steven Goldberg, MD, Clinical Assistant Professor  
 Barry Goldman, MD, Clinical Assistant Professor  
 Mehmet Gulecyuz, MD, Lecturer  
 Thirumazhisai Gunasekaran, MD, Instructor  
 Suresh Havalad, MD, Associate Professor  
 Natesan Janakiraman, MD, Professor Emeritus  
 Medha Kamat, MD, Assistant Professor  
 Jerome Kraut, MD, Lecturer  
 Romeen Lavani, MD, Lecturer  
 Michele Lorand, MD, Assistant Professor  
 Michael Lotke, MD, Assistant Professor  
 Henry Mangurten, MD, Professor and Chair  
 Jay Mayefsky, MD, Professor  
 Kenneth Miller, MD, Clinical Instructor  
 James Moy, MD, Instructor  
 Padmanabhan Mukundan, MD, Assistant Professor  
 Albert Owusu-Ansah, MD, Instructor  
 Mita Patel, MD, Assistant Professor  
 Rosita Pildes, MD, Professor  
 Antranik Poladian, MD, Assistant Professor

Bhagya Puppala, MD, Assistant Professor  
 Suma Pyati, MD, Professor  
 Sripathy Rao, MD, Lecturer  
 Arthur Ross III, MD, MBA, Professor  
 Larry Roy, MD, Lecturer  
 William Rutenberg, MD, Assistant Professor  
 Jaye Schreier, MD, Assistant Professor  
 Nishant Shah, MD, Assistant Professor  
 David Sheftel, MD, Clinical Assistant Professor  
 David Soglin, MD, Lecturer  
 Gopal Srinivasan, MD, Professor  
 Hari Srinivasan, MD, Assistant Professor  
 Howard Weiss, MD, Lecturer  
 Shou-Yien Wu, MD, Assistant Professor

## Department of Physiology and Biophysics

The goal of the Department of Physiology and Biophysics is to have students develop a thorough understanding of the principles and mechanisms involved in cellular and organ systems physiology. This is accomplished through an intensive course of study including Medical Physiology, Neuroscience and a variety of elective courses of study, as well as research opportunities for medical students. The subject content of the courses presents normal system physiology as well as discussions of pathological conditions that are of clinical relevance. Teaching is done by full-time faculty using different venues, such as large lecture presentations, small group conferences, individual consultation and laboratory demonstration-participation. As the department is committed to medical education, there is considerable one-on-one interaction between students and faculty, as well as individualized feedback on their progress in mastering course material. Students are also presented with numerous opportunities for active participation in laboratory work.

Faculty in the department are engaged in research on the cardiovascular system, brain metabolism, endocrinology, membrane function, muscle contraction, neuroscience, and renal function. A number of students in the Department are pursuing advanced degrees in physiology.

### Required Courses

#### **MPHY 500A, B Medical Physiology**

The course offers the basic principles of organ system physiology. Through lectures, demonstrations, conferences, and laboratory work, students receive a quantitative and integrated concept of subcellular, cellular and organ system function. Faculty.

#### **MPHY 500A**

Fall quarter, five lectures and three hours of laboratory work and conferences per week (7 units). Faculty.

#### **MPHY 500B**

Winter quarter, six lectures and two hours of laboratory and conferences per week (7 units). Faculty. 14 units total.

### Sophomore Elective Courses

#### **MPHY 609 Cardiovascular Pathophysiology**

Clinical aspects of cardiovascular function are emphasized, e.g., heart sounds and murmurs, electrocardiogram, monitoring of central venous pressure, and cardiac function curves. Fall quarter, 2 hours per week (2 units). Prerequisite: Medical Physiology (MPHY 500A, B) or its equivalent. Dr. McCormack.

#### **MPHY 610 Renal Cell Biology**

Students are taught fundamental processes of renal physiology and pathophysiology at a cellular level. An examination of recent literature and student presentations are emphasized. Fall quarter, 2 hours per week (2 units). Dr. Peterson.

#### **MPHY 615 Physiology of the Liver**

The normal functions of the liver are discussed as well as the experimental techniques used in the study of the liver. Various pathologies of the liver are presented and related to the disturbances of the normal physiology. Winter quarter, two lecture hours per week (2 units). Dr. Sukowski.

#### **MPHY 620 Integrative Physiology**

Students increase their capabilities to think through complex, integrative-type, physiological clinical situations, improve performance on data interpretation problems and better understand the physiological rationale for appropriate corrective measures, as well as the pathophysiology involved in many disease states. Spring quarter (2 units). Dr. Sukowski.



**MPHY 624 Pulmonary Pathophysiology**

The biophysics of pulmonary mechanics and gas transport are presented as a basis for evaluating pulmonary function. Modern pulmonary function testing equipment is utilized in the laboratory, and an emphasis is placed on recognizing abnormal lung volumes and airflows. Spring quarter, 2 hours per week (2 units). Prerequisite: Medical Physiology MPHY 500A, B. Dr. McCormack.

**MPHY 626 Research in Physiology**

Students are given the opportunity to become involved in significant physiological research. In doing so, the student gains experience in: designing experiments; operating modern research equipment; gathering meaningful data; evaluating experimental results; and preparing the results for publication. All quarters. All Physiology research faculty.

**Senior Elective Course****MPHY 801 Research in Physiology**

This elective provides students with an opportunity to become involved in significant physiological research. In doing so, the student gains experience in designing experiments, operating modern research equipment, gathering meaningful data, evaluating experimental results, and preparing the results for publication. The student selects an area of interest and a mentor. The student discusses with the mentor the nature, feasibility and specific objectives of the research project. Drs. Boudko, Bradbury, Bridges, Ebihara, Hawkins, D. Kim, Peterson, Rasgado-Flores, Sackin, Urban, and White.

**Multidisciplinary Courses****MCBA 606 Advanced Topics in Cell Biology II: Extracellular Matrix and Cytoskeleton**

This course focuses on selected topics concerning the structure and function of molecules and organelles within the cytoplasm and extracellular matrices.

Emphasis placed on the use of primary source materials. 2 hours per week (2 units). Not offered every year. Prerequisite: MBCH 502.

**MCBA 607 Advanced Topics in Cell Biology III: Growth Regulation**

This course focuses on four aspects of eukaryotic growth regulation. Topics include cell cycle theory and early genes, growth factors, oncogenes and immunology of cancer. Emphasis is placed on human malignancy. Format is lecture and seminar with heavy emphasis on original literature source material. 2 hours per week (2 units). Not offered every year. Prerequisite: MBCH 502 or consent of instructor.

**Faculty and Associated Staff**

Dmitri Y. Boudko, PhD, Assistant Professor  
 Neil A. Bradbury, PhD, Associate Professor  
 Robert J. Bridges, PhD, Professor and Chair  
 Lisa Ebihara, MD, PhD, Associate Professor  
 Sarah Garber, PhD, Associate Professor  
 Raul Gazmuri, MD, PhD, Associate Professor  
 Timothy Hansen, PhD, Professor  
 Richard Hawkins, PhD, Professor  
 Donghee Kim, PhD, Professor  
 Charles McCormack, PhD, Professor and Vice Chair  
 Feridoon Najmabadi, PhD, Research Assistant Professor  
 Darryl Peterson, PhD, Professor  
 Gordon Pullen, PhD, Assistant Professor  
 Hector Rasgado-Flores, PhD, Associate Professor  
 Henry Sackin, PhD, Professor  
 Ernest Sukowski, PhD, Associate Professor  
 Janice H. Urban, PhD, Associate Professor  
 Juan Vina-Ribes, MD, PhD, Research Professor  
 Carl White, PhD, Assistant Professor  
 Demetrios Zikos, MD, Clinical Associate Professor

## Department of Psychiatry and Behavioral Sciences

### Sophomore Required Course

#### **MPSY 601A, B Clinical Neuroscience**

This multidisciplinary course focuses on brain structure and function and their clinical manifestations. Faculty includes members of the Departments of Psychiatry and Neurology. Term I covers brain organization strategies for the diagnosis of central nervous system disease.

These strategies include the mental status and cognitive assessment examinations, psychological testing, and routine (e.g., blood count) and specialized (e.g., lumbar puncture, magnetic resonance imaging) laboratory testing, normal and abnormal personality. Term II covers disorders of the central nervous system, encompassing psychopathology. For these disorders, prevalence, pathophysiology, clinical manifestations, diagnosis, treatment and prevention are covered.

Drs. Sierles, Atre-Vaidya, and faculty. 7 total units.

### Sophomore Elective Course

#### **MPSY 699 Evaluating a Patient From a Different Culture Through Cinema**

Students will understand how culture facilitates and hinders medical care, and learn the skills which will enable them to interview patients from different cultures through the use of film. This course will discuss topics from a student's perspective and cross culture communication patterns and their impact on clinical care. Ten weeks. Dr. Vaidya

### Junior Required Course

#### **MPSY 700 Psychiatry Clerkship**

This is an intensive, full-time experience in the medical specialty of psychiatry. Under faculty supervision, clerks perform the duties of house staff. Clerks participate in interviews and history taking, charting, triage and referral decisions, treatment and care of psychiatric inpatients and significant experience in consultation/

liaison psychiatry and outpatient psychiatry. The classroom work consists of seminars on psychiatric emergencies, psychotherapy, behavior modification, liaison/consultation psychiatry, pediatric psychiatry, forensic and ethical psychiatry.

Case conferences, grand rounds, and professor rounds are held regularly. Clerks on inpatient services are assigned a personal caseload of two new patients per week; there are different responsibilities on the other services. Elgin Mental Health Center, Mount Sinai Hospital and North Chicago Veterans Affairs Medical Center. Six weeks. Dr. Moss and faculty.

Students who have received PhD degrees in the RFUMS MD/PhD program, or who have otherwise demonstrated outstanding performance by certain standards prior to the clerkship, are eligible to participate in a clerkship honors program in which they participate in specialized research or clinical experiences during this required clerkship.

### Senior Elective Courses

*Note:* Prerequisites for all senior elective courses: successful completion of the clerkship in Basic Psychiatry and departmental permission.

#### **MPSY 817 Child Psychiatry**

The goal of this course is to enable students contemplating a career in pediatrics (or child psychiatry) to gain valuable experience in treating children, adolescents, and their families in an active outpatient setting. Under the supervision of board-certified child psychiatrists, students assume the role of house staff and diagnose and treat a variety of patients. A number of therapeutic models are used, and the student is considered part of the treatment team. All quarters, 40 hours. Dr. Sarma.

**MPSY 825 Clinical Elective in Forensic Psychiatry**

Student will become familiar with the specialized clinical and medicolegal issues surrounding treatment of patients adjudicated Not Guilty by Reason of Insanity and Unable to Stand Trial. Three to four weeks, 40 hours/week. Dr. Daghestani

**MPSY 830 Neuropsychiatry Clinical Elective**

Students will spend four weeks working closely with attendings at the North Chicago Veterans Affairs Medical Center, Kiley Developmental Center, and The Behavioral Health Center in Vernon Hills, IL. Students will be assigned to neurobehavioral clinic, neuropsychiatric clinic, the women's psychiatric clinic and developmental disability clinic. Students will evaluate patients with Parkinson's disease, head injury, epilepsy and developmental delay. Four to six weeks, 40 hours/week. Dr. Atre-Vaidya.

**MPSY 890 Addiction Medicine**

Inpatient and outpatient experience, lectures on detox and medical complications, cocaine, hallucinogens, inhalants, smoking, diagnosis and screening; group therapy experience. Four weeks, 40 hours/ week. Dr. Doot.

**MPSY 891 Psychotherapy Elective**

This elective will expose senior medical students to the basics of psychotherapy theory and practice, through required readings and patient care in inpatient and outpatient settings. Four weeks, 40 hours/week. Drs. Garfield, Weiss, Bair Patricia Zaror, MD, Assistant Professor

**MPSY 899 Sleep Disorders Clinic and ECT**

This elective will combine two specialty clinics: 1) ECT Clinic, which will involve ECT consultations and student participation in all aspects of administering ECT; and 2) Sleep Disorders Clinic which will expose students to common sleep disorders, in addition to learning about the laboratory investigations of sleep disorders and the various tests used and their role in managing sleep disorders. Three to 4 weeks. Drs. Simon, Moss

**Facilities**

The Department has affiliations with Mount Sinai Hospital, Elgin Mental Health Center and the North Chicago Veterans Affairs Medical Center, and has ongoing programs in community facilities in DuPage County and in the public schools in the Lake County area, and the Behavioral Health Center at Rosalind Franklin University Health System.

## Faculty and Associated Staff

Yogi Ahluwalia, MD, Associate Professor  
 Syed Anwar, MD, Clinical Assistant Professor  
 Nutan Atre-Vaidya, MD, Professor and Chair  
 John Bair, PhD, Clinical Assistant Professor  
 David Baron, MD, Clinical Assistant Professor  
 Ronald Baron, MD, Clinical Associate Professor  
 Mariam Barouta-Kharzo, MD, Assistant Professor  
 Marc Bear, MD, Lecturer  
 Carl Bell, MD, Lecturer  
 Zafeer Berki, MD, Assistant Professor  
 John Burns, PhD, Professor  
 Jang-June Chen, MD, Assistant Professor  
 Sung Cheon, MD, Assistant Professor  
 Amin Daghestani, MD, Clinical Professor  
 Bhargavi Devineni, MD, Assistant  
 Viktoria Erhardt, MD, Assistant Professor  
 Roland Erwin, PhD, Associate Professor  
 Maria Fisfalen, MD, Assistant Professor  
 Arturo Fogata, MD, Clinical Assistant Professor  
 David Garfield, MD, Professor,  
 and Associate Chair  
 Vamsi Garlapati, MD, Instructor  
 Medeia Gartel, MD, Instructor  
 Alfreda Grosrenaud, MD, Assistant Professor  
 Mortimer Gross, MD, Clinical Associate Professor  
 Daniel Hardy, MD, Lecturer  
 Tariq Hassan, MD, Associate Professor  
 Julianne Hish, APRN, Clinical Instructor  
 Charles Hillenbrand, MD, Clinical Professor  
 Syed Hussain, MD, Clinical Assistant Professor  
 Chowdary Jampala, MBBS, Professor  
 and Associate Chair  
 Hasina Javed, MD, Clinical Assistant Professor  
 Patrick Kamm, MD, Clinical Assistant Professor  
 Mallikarjuna Kanneganti, MD, Assistant Professor  
 Faiza Kareemi, MD, Clinical Assistant Professor  
 Elizabeth Kessler, MD, Associate Professor  
 Anna Klyachkina, MD, Assistant Professor

Milton Kramer, MD, Clinical Professor  
 Michael Kuna, MD, Clinical Assistant Professor  
 Jadwiga Kuszynska, MD, Assistant Professor  
 Henry Lahmeyer, MD, Clinical Professor  
 Steven Lammers, MD, Clinical Assistant Professor  
 Phil Lebovitz, MD, Clinical Associate Professor  
 Marcia Leikin, MD, Clinical Assistant Professor  
 Rebecca Lutner, JD, Adjunct Instructor  
 George Lutz, PhD, Assistant Professor  
 Thakshakamani Madamala, MD,  
 Clinical Assistant Professor  
 Lynn Malenfant, MD, Assistant Professor  
 Allan Markle, PhD, Adjunct Assistant Professor  
 Barbara Meyer, PhD, Adjunct Assistant Professor  
 Elizabeth Mirkin, MD, Instructor  
 Brett Moberg, JD, LLM, Assistant Professor  
 Aron Mosnaim, PhD, Professor  
 Lori Moss, MD, Associate Professor  
 Gary Oltmans, PhD, Associate Professor  
 Harvey Parhad, MD, Assistant Professor  
 Salwa Parhad, MD, Assistant Professor  
 Malini Patel, MD, Clinical Professor  
 Stephen Penepacker, MD, Clinical Assistant Professor  
 Shahnaz Rahman, MD, Clinical Assistant Professor  
 Pradeep Rattan, MD, Assistant Professor  
 Ruth Rosenthal, MD, Assistant Professor  
 Lorraine Roth, MD, Assistant Professor  
 Ioana Sandu, MD, Assistant Professor  
 Balasubramania Sarma, MD, Associate Professor  
 Michael Seidenberg, MD, Professor  
 Kavita Shah, MD, Clinical Assistant Professor  
 Rita Shapiro, DO, Associate Professor  
 Sandra Siegel, RN, Adjunct Assistant Professor  
 Frederick Sierles, MD, Professor  
 Sarah Silva, MD, Assistant Professor  
 Edwin Simon, MD, Assistant Professor  
 Laura Sunn, MD, Assistant Professor  
 Mirella Susnjar, MD, Clinical Assistant Professor  
 Shastri Swaminathan, MD, Lecturer  
 Michael Taylor, MD, Professor Emeritus

John Tomkowiak, MD, Associate Professor  
 Chandragupta Vedak, MD, Clinical Associate Professor  
 Jyoti Warikoo, MS, Assistant Professor  
 Jessica Weddle, MD, Assistant Professor  
 Amanda Weiss, MD, Assistant Professor  
 David Wilson, MSW, Adjunct Assistant Professor  
 Patricia Zaror, MD, Assistant Professor

## Department of Radiology

The Department offers medical students an introduction to all of the various branches and diagnostic modalities of radiology, including computerized tomography, ultrasound, nuclear medicine, radiation/health physics, and magnetic resonance imaging. The Department offers an elective course in radiology in the second year, participates with other departments in teaching the basic radiologic anatomical correlation in the first year and the clinical application of radiology in the second year, and offers six intramural radiology clerkships in the senior year. In each of these activities, the faculty seeks to inculcate sound decision making and systematic implementation of different radiologic modalities, and to develop a thorough understanding of proper indications and contraindications in radiological procedures in patient care. Teaching evaluations and other educational research methods are utilized extensively to further improve learning opportunities.

The Department of Radiology is able to call upon faculty and clinical resources located in all of the hospitals in the Chicago metropolitan area that are associated with the Chicago Medical School.

## Sophomore Elective Courses

### **MRAD 600     Diagnostic Radiological Imaging**

This elective helps students develop skills in understanding the radiographic appearance of normal anatomical structures, variations of the normal and the contrast with common abnormalities encountered in clinical conditions. The course also deals with augmentation of the student's skills in physical

diagnosis and patient examination, demonstrating visually the normal and abnormal findings in simulated physical examination situations. Teaching is done in semi-formal lecture format with radiographs selected from the teaching files of the Department. Students will be given an exam and be required to turn in a course evaluation at the end of the course. Requisite: M2 standing; Advanced M1s during last term only. Faculty.

## Senior Elective Courses

### **MRAD 801 and MRAD 804**

### **General Diagnostic Radiology Clerkships**

Students work with faculty at the North Chicago Veterans Affairs Medical Center to develop skills in interpreting radiographic anatomy, physiology and pathology. In addition to and within the NCVA rotation, at the discretion and approval of chair of the Department, students may be assigned visitation at other hospitals and radiology facilities within the Chicago area to receive instruction from faculty at various locations, including Jesse Brown Veterans Affairs Medical Center, Gurnee Radiology Imaging, Resurrection Medical Center and Good Shepherd Hospital. Students will learn and understand routine procedures and augment skills in differential diagnosis of radiographic manifestations of common clinical situations. Students will attend scheduled supplemental, didactic lectures and interdisciplinary conferences given by faculty. Students may also be assigned independent work, utilizing the various learning aids in the Departments at CMS and at the NCVAMC. Students are required to complete a paper with images and bibliography. Offered Fall, Winter and Spring in four-week sessions. One to five students per session. Faculty.

### **MRAD 802     General Diagnostic Radiology Clerkships**

This elective helps the student develop skills in interpreting radiographic anatomy, physiology and pathology. The student learns and understands routine procedures and augments skills in differential diagnosis of radiographic manifestations of common clinical situations.



Students work one-on-one with an attending radiologist at Mount Sinai Hospital Medical Center. Offered Fall, Winter and Spring in four-week sessions. One student per session. Faculty.

#### **MRAD 806 Introduction to Neuroradiology**

This course, held at Lutheran General Hospital, is an introduction to the clinical problems and imaging modalities involved in neuroradiology, including neuro-interventional techniques. Prerequisite: Completion of a four-week Diagnostic Radiology elective. Offered in all quarters of academic year in two-week rotations. Maximum two students per session. Faculty.

#### **MRAD 809 Diagnostic Radiology**

This course is designed to introduce students to diagnostic radiology in the community hospital, including: 1) basic radiographic interpretation, i.e., general radiology; 2) cross-sectional imaging, i.e., general radiology; 3) neuroradiology, special procedures and interventional radiology; and 4) utilization of imaging and the role of the radiologist as a consultant. Requirements include an oral clinically oriented presentation at the end of the rotation. Students are expected to participate in all conferences, both radiology teaching conferences and interdisciplinary conferences. Offered all quarters or as determined by faculty in four-week sessions. Maximum two students per session. Faculty.

#### **MRAD 810 Radiation Therapy**

Our faculty is committed to training medical students to be more aware of the oncologic aspects of human medicine. The medical students will be better versed in areas of clinical symptoms as they relate to oncology along with the diagnosis and workup of malignancies. Our faculty will instruct the student physician on our unique specialty with special attention to the indications and details regarding brachytherapy and external beam therapy with three-dimensional or intensity-modulated treatment planning. We will also

educate the medical students in all aspects of oncology treatment, not only in radiation therapy, but also in chemotherapy and surgery. We will also train these future physicians in the realms of post-radiation patient care and follow up for malignancies.

Responsibilities will include: 1) performing history and physicals on selected new patient consults, both in the ambulatory and inpatient settings; 2) participate in the decision making for patient workup and management in collaboration with the attending physician; 3) assigned to a physician to follow on a daily basis; and 4) attend oncology conferences. Four hours per week will be spent in tumor conferences, and one hour of formal lecture will be given per week. Offered all quarters of academic year in two- or four-week rotations. Maximum two students per session. Faculty.

#### **Faculty and Associated Staff**

Thomas Anderson, MD, Lecturer  
 Thalerng Balachandra, MD, Assistant Professor  
 Jonathan W. Berlin, MD, Lecturer  
 Winston Casis, MD, Instructor  
 John Chang, MD, Assistant Professor  
 Yong-Kyu Choe, MD, Clinical Assistant Professor  
 Stephen Doundoulakis, MD, Clinical Assistant Professor  
 Pierre Eilian, MD, Clinical Associate Professor  
 Yan-Fu Feng, MD, Assistant Professor  
 Brent Greenberg, MD, Clinical Assistant Professor  
 Donald Hebel, MD, Lecturer  
 Alan Hecht, MD, Assistant Professor  
 Leonard Kaufman, MD, Lecturer  
 Nam Kim, MD, Clinical Associate Professor  
 Kevin Kirshenbaum, MD, Lecturer  
 Joseph Levy, MD, Associate Professor  
 Leon Love, MD, Lecturer  
 Najma Mirza, MD, Clinical Assistant Professor  
 Gregory Moss, MD, Clinical Professor  
 Ejaz Rahim, MD, Associate Professor and Interim Chair  
 Jeffrey Rosengarten, MD, Clinical Associate Professor  
 Pratiba Sansi, MD, Clinical Assistant Professor  
 Parkash Talwar, MD, Clinical Professor  
 Piyush Vyas, MD, Assistant Professor  
 Donald Waxler, MD, Associate Professor  
 Edwin Willgress, MD, Clinical Assistant Professor  
 Bong-Hyun Yoon, MD, Associate Professor

## Department of Rehabilitation Medicine

The Department provides didactic and clinical educational opportunities to students and postgraduate physicians in the medical care of the ever-increasing number of patients with sequelae of trauma, disease, congenital and degenerative abnormalities. Elective courses in rehabilitation medicine, physical fitness and sports medicine, electrodiagnosis and electrotherapy, and research in rehabilitation medicine are offered to second-year students. Senior students may take a clinical elective in electromyography, rehabilitation medicine, sports and spine rehabilitation, clinical pediatric rehabilitation, clinical management of chronic pain and rehabilitation research at any of several hospitals.

In its clinical course work, faculty of the department seek to:

- Improve students' abilities to evaluate the clinical entity, quality of life and total functional capacities and needs of patients as living, functioning individuals, and as members of families and communities.
- Develop skills in establishing short- and long-range goals for prophylaxis, health maintenance, diagnosis, treatment, patient education restoring functions and quality of life.
- Sensitize students to basic principles of comprehensive patient care in prevention of disease, complete evaluation of clinical entity and quality of life. Treat cost effectively and educate patients to the contributions of allied health personnel and community resources in maximizing patient functioning and improving the quality of life.

The department is affiliated with many medical centers. These facilities, together with a large and diversified faculty, expose the student to a considerable variety of methodologies, healthcare approaches to various patients, and clinical entities. Postgraduate clinical conferences are held for physicians. Research within the department

focuses upon the use of electromyography to investigate variations in conduction of peroneal and tibial nerve components in sciatic nerve pathology, the effect of electric currents on inflamed joints, variations in pain threshold, myofascial pain syndromes and systemic and seasonal vascular pathologies in patients with diagnosis of strokes, peripheral vascular disease and coronary artery diseases.

## Sophomore Elective Courses

### MRHM 613 Research Elective in Rehabilitation Medicine

This course is designed to be a comprehensive, experience-based practical exercise in conducting research on pain disorders. Students who choose this elective will be involved in all aspects of pain research to include study protocol development and grant writing, subject recruitment, study execution, data entry/analysis and presentation at scientific conferences. (Other duties are assigned). Students should be willing to dedicate between three and 15 hours per week and have an interest in learning all about aspects of the diagnosis and treatment of pain disorders. Dr. Harden.

## Senior Elective Courses

### MRHM 801 Rehabilitation Medicine for Primary Physicians

Students work under the direct supervision of the instructional staff at various affiliated hospitals to obtain an overview of rehabilitation. Techniques include evaluation, goal setting, discharge planning, team approach, therapeutic procedures for inpatients and outpatients. Opportunities to pursue special interest in neurologic diseases, spinal cord injury, geriatrics, electrodiagnosis, surgical, cardiac or other conditions are available. A term paper on a related subject of interest is suggested. All quarters. Multiple sites, and North Chicago VA Medical Center.

EMG, exercise electrocardiography and exercises for cardiac patients, basic psychological testing and administration of tests including the interpretation. All quarters. Dr. Reddy. Hines VA Medical Center.



**MRHM 803     Rehabilitation Medicine for Primary Physicians**

In this elective, the student works directly with the instructors and under their direct supervision, the student is expected to take responsibility for a limited number of patients, review the medical problem with the instructor and define rehabilitation goals after listing the problems at hand, and follow patients at various therapies. Special laboratory training includes electrodiagnosis of neuromuscular diseases, including EMG, exercise electrocardiography and exercises for cardiac patients, basic psychological testing and administration of tests including the interpretation. All quarters. Dr. Reddy. Hines VA Medical Center.

**MRHM 804     Clinical Rehabilitation Medicine for Primary Physicians**

In this elective, students are expected to participate in medical and rehabilitation care provided to inpatients and outpatients. They perform history and physical examinations and monitor patients' progress through the rehabilitation program. Students document this progress in clinical record. All of these activities are under the supervision of the Physical Medicine and Rehabilitation residents and the attending staff. All quarters. Dr. Gittler, Schwab Rehabilitation Hospital. Dr. Elliot Roth, Rehabilitation Institute of Chicago.

**MRHM 809     Clinical Adult Inpatient Service**

Students will have the responsibility for the initial workup, the prescription of allied health services, and medical coverage of physically and cognitively disabled inpatients. Students will initially attend and later participate in the direction of patient staffings by the allied health team. They will learn to appreciate the contributions of all members of this team. This rotation will also incorporate outpatient clinic exposure (80% inpatient; 20% outpatient). Focus areas include spinal cord injury, head trauma, osteoarthritis, stroke, amputee, and general rehabilitation.

This elective will enhance the student's ability to provide medical and rehabilitative care for disabled

patients in a multidisciplinary team approach. It will also provide experience in writing appropriate therapy prescriptions, and in determining long- and short-term rehabilitative goals.

**MRHM 811     Individual Studies**

Special studies can be designed for students on an individual basis that may include such aspects of PM&R as electrodiagnostic procedures, psychological implications, spinal cord injuries, orthotics, prosthetics, outpatient, etc.

This elective will enhance the student's understanding of a specific area of focus in PM&R: electrodiagnostic medicine, orthotics/prosthetics or performing arts medicine.

**MRHM 812     Rehabilitation Research**

There are extensive opportunities for research in PM&R. Neurophysiology and neuropsychology research are emphasized. Supervision can be provided for students with original research ideas, or the student may consult with department faculty for research ideas. This elective will be customized on an individual basis to provide maximum learning experiences in clinical research, and to offer insight to the field of PM&R.

**MRHM 813     Clinical Pediatric Rehabilitation Service**

Students will work directly with family units, do initial history and physical examination on new patients admitted to the pediatric service, and will have the opportunity to participate in the evaluation and care of the patients in a multidisciplinary team approach. Students will also have the opportunity to participate in the Rehabilitation Consult Service at Children's Memorial Hospital and visit other institutions in the metropolitan area that serve disabled children as well as attend outpatients at the Rehabilitation Institute of Chicago.

This elective will provide insight and experience with the direction and coordination of an interdisciplinary rehabilitation team in the care of a child with a disability. Students will gain an understanding of pediatric outpatient care and long-term management of the disabled child.

**MRHM 814 Inpatient and Outpatient Rehabilitation**

This elective emphasizes evaluation and treatment of physically disabled handicapped patients and patients with a variety of musculoskeletal dysfunctions. The student will have responsibility for the initial patient evaluation and will participate in patient management. The student will attend patient staffings and observe patients in therapy. The student will have an opportunity to perform electrodiagnostic procedures. 50% inpatient, 50% outpatient.

**MRHM 815 Clinical Management of Chronic Pain**

Students will gain an understanding of principles of diagnosis and treatment of chronic low back and other neurological chronic pain syndromes. They will learn to examine and evaluate the spine. They will attend staffings and will participate in the total management of inpatients with severe chronic pain problems. In addition, they will observe the physical treatment of patients including all therapies. They will observe techniques of biofeedback, relaxation therapy and behavior modification.

This elective will provide understanding of the principles of diagnosis and treatment of chronic pain, competence in its evaluation, and ability to differentiate treatment approaches for chronic versus acute pain.

**MRHM 816 Rehabilitation Medicine Clinical Service**

This elective emphasizes evaluation and treatment of the physically disabled handicapped patients and patients with a variety of musculoskeletal dysfunctions. The student will have responsibility for the initial patient evaluation and will participate in patient management. The student will attend patient staffings and observe patients in therapy. The student will have an opportunity to perform electrodiagnostic procedures. 50% inpatient, 50% outpatient.

**Faculty and Associated Staff**

Vijaya Chigurupati, MD, Clinical Instructor  
 Matthew Flanagan, MD, Lecturer  
 Michelle Gittler, MD, Lecturer  
 Mitchell Goldflies, MD, Clinical Assistant Professor  
 Melitta Gratzner, MD, Clinical Assistant Professor  
 Norman Harden, MD, Lecturer  
 David Hinkamp, MD, Clinical Assistant Professor  
 Meilute Indreika-Biskis, MD, Lecturer  
 Martin Lanoff, MD, Clinical Assistant Professor  
 Susan Lis, MD, Clinical Assistant Professor  
 Oleh Paly, MD, Clinical Assistant Professor  
 Barbara Parke, MD, Lecturer  
 Nabih Ramadan, MD, Professor  
 Suzan Rayner, MD, Lecturer  
 Kaswaram Reddy, MD, Clinical Assistant Professor  
 Eugene Rogers, MD, Professor Emeritus  
 Robert Rogers, MD, Lecturer  
 Elliot Roth, MD, Lecturer  
 Uma Shah, MD, Assistant Professor  
 Sang Suh, MD, Assistant Professor  
 Bharathi Swaminathan, MD, Assistant Professor  
 Stephen Weinberg, DPM, Adjunct Instructor  
 Gary Yarkony, MD, Clinical Professor

## Department of Surgery

### General Information

Junior surgical clerks and seniors taking surgical electives are given maximum responsibility and opportunity to participate, consistent with safety and high standards, in the care of patients. There is a schedule of visiting faculty from institutions in and outside the Chicago area and a full complement of qualified professionals in other medical and allied fields. Patients at the affiliated hospitals present challenging problems in the management of all states of surgical care.

Faculty in the department are currently engaged in research in the areas of shock and critical care, surgical nutrition, neurosurgery, and education.

### Sophomore Elective Courses

#### **MSUR 600 Electives in Cardiovascular Surgery**

The student, under the direction of the cardiovascular surgeon, will observe history, exam, and surgery. Relevant clinical correlations to basic science courses will be evident. Some examples of procedures that will be observed: coronary bypass, valve repair and replacement, implantable devices, anti-arrhythmia and revascularization procedures. The student will arrange scheduled visits to the cardiovascular office in Libertyville, so as not to conflict with his or her academic schedule. Spring quarter, 10 weeks.  
Dr. Phillip Faraci (1 credit).

#### **MSUR 601 Elective in Orthopedics**

The student under the direction of the orthopedic surgeon will observe history, exam and surgery. Fractured bones, osteoarthritis, rheumatoid arthritis, strains, low back discomfort, and carpal tunnel syndrome are examples of some of the conditions that will be observed. Relevant clinical correlations to basic science courses will be evident. The student will arrange scheduled visits to the orthopedic office in Long Grove, IL, not

to conflict with the academic schedule.

### Required Course

#### **MSUR 700 Surgery Clerkship**

The Surgical Clerkship Program is an eight-week rotation in one of six affiliated hospitals: Mount Sinai Hospital Medical Center, Illinois Masonic Medical Center, Christ Hospital, John H. Stroger, Jr., Hospital of Cook County, Lutheran General Hospital, and Swedish Covenant Hospital, under the supervision of Internal Coordinators who are faculty members. Six weeks are assigned to general surgery, and two weeks of one of the following electives: anesthesiology, emergency room, metabolic care, orthopedic surgery, trauma, urology and vascular surgery.

As an integral part of the surgical team, the clerks gain clinical experience by participating in clinics, rounds, operative procedures, and on-call duties. They attend the following regularly scheduled surgical conferences: radiology, pathology, tumor, morbidity and mortality, grand rounds, surgical GI conference, vascular, journal club, critical care, surgical indications, basic science, cardiothoracic, orthopedic, surgical nutrition and trauma.

The main didactic aspect of the Surgical Clerkship, the weekly Core Lecture Series, correlates with the Core Curriculum and is required by all clerks. The Core Lecture Series is supplemented by tutorials at each hospital. At these sessions, small groups of students meet with an instructor to discuss and correlate clinical and basic science aspects of the current lecture.

## Senior Elective Courses

### **MSUR 806      Trauma**

The Department of Surgery at Mount Sinai Hospital Medical Center offers a four-week elective on the Trauma Service that allows the fourth-year student an in-depth opportunity to care for the acutely injured patient.

### **MSUR 808      General Urology**

This elective will introduce the student to the principles of urology, basics of urologic disease, diagnostic approaches, and the treatment of urologic problems. Emphasis will be placed on giving the student a working knowledge of urologic problems, i.e., urinary tract infections, obstructive uropathy, urolithiasis, tumors, and congenital defects. The Urology Service at Mt. Sinai Health System of Chicago will be utilized. 2 weeks. Dr. Sangtae Park

### **MSUR 809      Surgical Critical Care**

Offered at Mount Sinai Hospital Medical Center, the clinical clerkship in multidisciplinary critical care provides the senior student an opportunity to serve as an active member of a fellow-student team intimately involved in the critical care of patients in the medical-surgical intensive care units. The clinical experience exposes the student to a wide variety of medical and surgical problems for which the clerk is responsible for diagnosis and treatment under the direct supervision of the critical care fellow and attending physician. The full teaching program includes daily attending rounds, daily critical care conferences, and weekly medical and surgical grand rounds. The clerkship is intended to permit the student to serve as an “acting intern” as a means of enhancing his or her knowledge, skills and judgment in critical care medicine.

### **MSUR 820      Surgical Subinternship**

The clerkship is designed to continue surgical training

as an extension of the Junior clerkship and is offered at Mount Sinai Hospital Medical Center.

The Student Externship provides the senior student an opportunity to serve as an active member of a resident-intern-student team intimately involved in the acute care of patients on the surgical service and care of patients in the outpatient department. The clinical experience exposes the student to a wide variety of problems for which the clerks are responsible for diagnosis and treatment under the direct supervision of the resident and attending physician. The full teaching program includes attending rounds, specialty conferences, morbidity & mortality conferences, journal club, and Surgical Grand Rounds. The clerkship is intended to permit the student to serve as an “acting intern” as a means of enhancing his or her knowledge, skills and judgment in clinical surgery.

### **MSUR 823      Orthopedics**

Students work directly with the attending and resident staff at Mount Sinai Hospital Medical Center. Management of acute injuries, such as fractures, dislocations and tendinous injuries, is the focus. Students are responsible for the pre- and post-operative care of patients, as well as the principles of rehabilitation. They learn the proper techniques of fracture immobilization (casting, traction, internal fixation). They are expected to perform an in-depth examination and evaluation of the extremities and spinal column.

**MSUR 824 Trauma and Critical Care Surgery**

This is a four-week clinical rotation on an inpatient service at Illinois Masonic Medical Center. The exposure is to the acutely traumatized patient and the critical care, follow-up, and management of these patients. The student functions at an extern level with close observation by the attending staff. Two full-time trauma faculty make rounds seven days a week. Conferences and lectures are primarily clinically based on topics relating to the patient load.

**MSUR 825 Otolaryngology**

This four-week clinical elective gives the student firm foundation for the recognition and appropriate course of action of problems of otolaryngology head and neck surgery. Students are included in all the clinical activities of the instructor. This includes initial and follow-up office visits of all ENT population as well as observation and assistance in the operating room. Topics of general otolaryngology are assigned to the students. Following their readings on the topics, formal and informal discussions are held.

**MSUR 842 General Surgery  
Lutheran General Hospital**

The student will participate as a subintern on an academic General Surgery Teaching Service in which a broad spectrum of surgical diseases are encountered. The student will have the opportunity to provide preoperative, intraoperative, and postoperative care for approximately 75 to 80 operative patients per month. The student will be a member of the team providing care in the Surgical Intensive Care Unit, as well as the step down units. The student will be afforded the opportunity to attend daily SICU teaching rounds. The student will participate in weekly surgical grand rounds, M&M conferences, morning presentations of patient case scenarios, and trauma conferences. The student will be a regular contributor to the case presentations, and will be a key member of the academic team.

**MSUR 844 Adult Cardiac Surgery  
Lutheran General Hospital**

The student will experience full exposure to the general cardiologic surgery disease processes. He or she will encounter inpatient and outpatient care of patients with congenital and adult heart disease, to include valvular and coronary artery disease. The student will function as a subintern on the Academic Cardiac Surgery Service, and will be exposed to the outpatient evaluation and decision-making process regarding pre-operative assessment and surgical recommendations following cardiac catheterization, angioplasty, etc. The student will be in the outpatient cardiac surgery office approximately two one-half days per week. There will be no in-hospital call.

**MSUR 845 Orthopedic Surgery  
Lutheran General Hospital**

A senior elective in Orthopedic Surgery includes exposure to an active Emergency Room and patients with variable degrees of orthopedic trauma, preoperative patient evaluation, and intense postoperative care experiences in patients following orthopedic trauma and reconstructive surgery. Two formal teaching conferences are held weekly, and some exposure to orthopedics in an office setting is also included. The student will work closely with an orthopedic resident staff under the guidance of an active faculty of attending orthopedists. Appropriate readings and references will be suggested.



**MSUR 847      General Plastic and Reconstructive Surgery**  
**Lutheran General Hospital**

The student will be exposed to the full spectrum of General Plastic Surgery in the Outpatient Ambulatory Surgery Center. The spectrum of disease will include congenital, reconstructive, and cosmetic. The student will see patients in the plastic surgeon's offices (adjacent to the hospital), and will be involved in diagnostic and therapeutic decisions prior to surgical intervention. The student will see patients in the plastic surgeon's offices post-operatively. The office hours will be approximately two to two-and-one-half to three days per week with the faculty plastic surgeon in the operating room. Occasional inpatient reconstructive surgical problems will be included. There will be no night call.

**MSUR 848      Trauma/Critical Care**  
**Lutheran General Hospital**

The student will participate as a subintern on the Trauma Service, and will be responsible for the implementation of diagnostic and therapeutic decisions regarding seriously ill trauma victims, to include those requiring ventilatory support, nutritional therapy, and optimization of hemodynamic parameters. The student will participate in daily morning conferences, weekly trauma conferences, grand rounds, and M&M conferences as they relate to trauma patients and critically ill surgical patients. The student will provide formal presentations of patients to the Trauma academic group on a frequent and regular basis. Student will attend daily SICU rounds.

**MSUR 849      Neurosurgery**  
**Lutheran General Hospital**

The student will act as a subintern on the academic Neurosurgery Service. The student will be exposed to a broad spectrum of general neurologic diseases involving surgical intervention as a therapeutic modality. The spectrum of patients includes those with neurotrauma, neuro-oncology, congenital neurologic disease, and

disease of the spine and peripheral nerves. The student will focus on neuroanatomy, neurophysiology, preoperative and operative decision-making, and the management of neurologic patients pre- and post-operatively.

**MSUR 850      General Surgery and Gynecologic Oncology**

The fourth-year elective student would report and have a relationship with the general surgery attendings who participate in clinical sessions at the Caldwell Breast Cancer Center, Monday through Friday mornings. The student would also interact with Dr. J. Dolan, Director of the Breast Center on Monday afternoons. The fourth-year student would be actively involved in all clinical activities regarding the Breast Center. The student would be expected to attend morning surgical rounds, all 7:00 a.m. surgical conferences, all breast conferences, as well as the Gynecology-Oncology Tumor Conference. The student would also view the diagnostic work-ups for patients who are being seen and evaluated in the Caldwell Breast Center with the attending surgeon, resident staff, and attending radiologists. The student would also participate in assisting at breast as well as Gynecology-Oncology surgical procedures in the main operating room as well as observing the minimally invasive biopsy techniques that are undertaken in the Caldwell Breast Center. All of the activities would take place at Advocate Lutheran General Hospital. 4 weeks. Dr. Bruce J. Stoehr.

**MSUR 853      Urology**

Students will work closely with a urologist in outpatient and inpatient settings, performing physical examinations and assisting in surgery. This elective will introduce students to the principles of urology, basic of urologic disease, diagnostic approaches and the treatment of urologic problems. Emphasis will be placed on giving students a working knowledge of urologic problems such as urinary tract infections, obstructive uropathy, urolithiasis, tumors, and congenital defects. Dr. Peter Vaselopoulos. Prerequisite: Successful completion of the third-year surgical clerkship.

**MSUR 854 Otolaryngology**

The student will work closely with the otolaryngologist in outpatient and inpatient settings, performing examinations and assisting in surgery. This elective will introduce the student to the principles of otolaryngology, basics of otolaryngologic disease, diagnostic approaches and the treatment of otolaryngologic problems. Objectives include:

- 1) function under the supervision of a practicing otolaryngologist; 2) perform examinations on otolaryngologic patients; 3) discuss findings and treatment plans with the supervising physician; and 4) develop and awareness of the various factors and complexities of the patient's specific conditions that need to be addressed in order to provide optimal care.

Dr. Daoud Nissan. Prerequisite: successful completion of the third-year surgical clerkship.

**Faculty and Associated Staff**

Frank Apantaku, MD, Clinical Assistant Professor  
 Lecia Apantaku, MD, Associate Professor  
 Kathryn Bass, MD, Lecturer  
 Richard Caldwell, MD, Lecturer  
 Vivek Chaudhry, MD, Lecturer  
 Raymond Firfer, MD, Clinical Professor  
 Allan Fredland, MD, Associate Professor  
 Mitchell Goldflies, MD, Clinical Assistant Professor  
 Mark Hill, MD, Clinical Professor  
 Michele Holevar, MD, Professor  
 Nedra Joyner-Triplett, MD, Clinical Assistant Professor  
 Orhan Kaymakcalan, MD, Clinical Assistant Professor  
 Sung-Tao Ko, MD, Clinical Professor  
 Hasmukh Patel, MD, Clinical Assistant Professor  
 Jayantibhai Patel, MD, Clinical Instructor  
 Prahlad Pyati, MD, Clinical Professor  
 Robert Richardson, MD, Clinical Professor  
 Arthur Ross, III, MD, MBA, Professor  
 Marek Rudnicki, MD, PhD, Lecturer  
 Hernando Torres, MD, Clinical Professor  
 Thomas Vargish, MD, Professor and Interim Chair  
 Stephen Wise, MD, Associate Professor  
 Robert Yario, MD, Clinical Associate Professor  
 Phillip Zaret, MD, Associate Professor  
 Michael Zdon, MD, Professor



## Required Multidisciplinary Courses

The faculty has determined that certain subjects are more effectively taught and learned when approached from the body systems or problem-oriented standpoint rather than from the discipline standpoint. Consequently, several required courses have been developed which incorporate these approaches and are included in the curriculum. The courses are developed by faculty assigned to the course by their respective departments and who are specialists in the topics to be taught in these courses. \* = *Primarily an online course.*

### **MMTD 510 Introduction to Medical Ethics\***

The course introduces the student to the basics of ethical issues in the practice of medicine, as well as to recognize the controversial nature of issues such as patient's rights. Elements of research into the foundations on which positions are taken on medical issues are stressed. Logical approaches for such positions are developed. Inquiry into the historical basis of ethical problems, appreciation for alternative positions on ethical issues and identifying the ethical issues concomitant with the new developments in the practice of medicine are emphasized. Spring quarter, first year. 2 units.

### **MMTD 509 Clinical Epidemiology\***

This course acquaints the student with the basic concepts of biostatistics and introductory Clinical Epidemiology. Elements of research design are stressed so that the student is able to critically evaluate research literature. Practice in simple statistical skills and analysis is included. Spring quarter, first year. 2 units.

### **MMTD 601 Preventive Medicine**

The course provides a module in epidemiology, introductory lectures in the fields of occupational medicine and environmental medicine plus lectures on a sampling of diseases that are common, constitute public health problems and are amenable to varying degrees to screening, early diagnosis and subsequent intervention. Spring quarter, sophomore year. 2 units.

## **2008–2009 Academic Calendar**

Dates on Registrar's Web site Academic Calendars