

Chicago Medical School

2012-2013 Academic Catalog



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 catalog. 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.

TABLE OF CONTENTS

General Content

Letter from the Dean.....4

Introduction.....5

History.....5

Mission.....6

Core Competencies.....7

Vision.....7

Accreditation.....7

Equal Opportunity.....8

Location.....8

Application Procedure.....8

AMCAS.....8

MCAT9

Early Decision Plan.....9

Admissions Policy.....9

Admission Requirements.....10

Admissions Committee Procedures.....10

Advanced Standing.....11

Non-Immigrant International Students.....11

Academic Performance Standards and Measurement.....11

Grading.....11

Professionalism Expectations.....12

Student Records and Transcripts.....12

Leave of Absence.....13

Tuition and Other Educational Expenses.....13

Tuition and Fee Payment Policy.....14

Refunds and Withdrawals.....14

Health Care and Health Insurance.....14

Disability Insurance.....14

Students with Disabilities.....15

Technical Standards.....14

Requirements for the MD Degree.....16

Requirements for the Combined MD/MS Degree.....17

Requirements for the Combined MD/PhD Degree.....17

Master of Science Programs in Clinically Oriented Subjects for Medical Students.....18

MD with Distinction in Research Program.....16

Educational Competencies and Learning Objectives.....18

Statement of Policy on Professionalism and Ethics21

Student Treatment.....22

Teaching Hospital Affiliations.....22

Continuing Medical Education23

TABLE OF CONTENTS CONTINUED

Residency Programs.....24
 Financial Assistance.....24
 Scholarships.....24
 Academic Records.....25
 Academic Calendar.....25
 Student Housing.....25
 Student Services and Programs.....25
 CMS Office for Student Affairs and Medical Education.....25
 Learning Communities.....25
 Career Counseling.....26
 CMS Office for Undergraduate Studies.....26
 Student Organizations, Services and Activities..... 26
 Honors, Awards and Prizes.....27
 Additional Policy and Resources.....28

Departmental Information

Basic Science Departments

Department of Biochemistry and Molecular Biology.....29
 Department of Cell Biology and Anatomy.....30
 Department of Cellular and Molecular Pharmacology.....32
 Department of Microbiology and Immunology.....34
 Department of Neuroscience.....36
 Department of Physiology and Biophysics.....37
 Office of Undergraduate Studies.....39
 Interprofessional Healthcare Studies45

Clinical Science Departments

Department of Anesthesiology.....46
 Department of Emergency Medicine.....46
 Department of Family and Preventive Medicine.....49
 Department of Medicine.....53
 Department of Neurology.....64
 Department of Obstetrics and Gynecology.....67
 Department of Ophthalmology.....70
 Department of Pathology.....71
 Department of Pediatrics.....73
 Department of Physical Medicine and Rehabilitation.....82
 Department of Psychiatry and Behavioral Sciences.....85
 Department of Radiology.....88
 Department of Surgery.....91

Dear Prospective Student,

There has never been a more exciting time to consider a career as a physician. The environment into which you will enter is dynamic, rapidly changing and open to innovation. In that light, you will want to select a medical school that will prepare you well to adapt to new health care settings where the foundations are only now being developed.

That school is Chicago Medical School. Our innovative, state-of-the-art curriculum will prepare you to practice as an essential member of a health care team. Knowing and applying your special skills as a physician and then implementing them side by side with nurses, physician assistants, pharmacists, podiatrists, physical therapists and other members of a coordinated team of providers, will lend you a competitive edge both in your education and your practice unavailable at any other medical school in America.

A special strength of Chicago Medical School is the many teaching affiliations we have developed. You will have the opportunity to learn in both urban and suburban settings. You will rotate with many accomplished clinician educators and with a number of residencies in all specialties enhancing your post graduate residency options.

Conjoined with these opportunities is the ability to collaborate with our basic science faculty members and add to your career options the ability to participate in the science of medicine and excitement of research and discovery. Several of our basic science professors are authors of nationally known USMLE board review texts and make a special point of preparing our students well for these exams.

Chicago Medical School's groundbreaking history as one of the first medical schools to embrace admissions standards based on character and merit without regard to race or sex continues to yield strong and diverse classes. I firmly embrace our openness to entertain candidates whose work lives began in other careers.

It is truly a gift to be able to enter into the profession of medicine. I welcome you to Chicago Medical School and the opportunity to assist in crafting your future as a physician.

Russell G. Robertson MD
Dean and Vice President of Medical Affairs

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 five-college University that was originally built around the Chicago Medical School (CMS), which has been educating physicians and furthering biomedical research for 100 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, DSc, 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 was established. The University comprised the Chicago Medical School, the School of Related Health Sciences (now named the College of Health Professions), and the School of Graduate and Postdoctoral Studies. In 1980, the University relocated to its current campus in North Chicago, Illinois, adjacent to the Captain James A. Lovell Federal Health Care Center.

The new campus included the University's Basic Sciences Building, a 400,000-square-foot facility that houses a 52,000-square-foot Boxer 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. The Heather Margaret Bligh Cancer Research Laboratory, a cancer immunology research and treatment complex, is located on the north end of the Basic Sciences Building.

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 2001, the Dr. William M. Scholl College of Podiatric Medicine (established in 1912) became part of the University structure.

In January 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 the College of Health Professions.

In addition to the name change and the announcement of several new strategic initiatives, the University was experiencing profound growth. In October 2002, the University opened its Health Sciences Building, a 140,000-square-foot 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.

From 2004 to 2009, the University has significantly and steadily expanded its student base and set record enrollment growth, from 1,664 students to 1,940 — a 16 percent increase in the student population. By strengthening its research enterprise and attracting pre-eminent scientists, the institution now provides greater access to leading-edge research opportunities. This growth will continue to be fueled by the increased interest in the programs in the College of Health Professions and the new College of Pharmacy.

In 2010, the University broke ground on the 23,000-square-foot Interprofessional Education Center which offers additional small group learning classrooms, laboratories, clinical simulation spaces, and an amphitheatre. It is the home of the College of Pharmacy, which welcomed its inaugural freshman class in fall 2011.

Dr. Rosalind Franklin, through her pioneering work in the science of DNA 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 100 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.

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 core 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 ill and healthy patients of all ages.
- 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.
- 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 to evaluate and improve patient care practices.
- 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 health care 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.

ACCREDITATION

Rosalind Franklin University of Medicine and Science (RFUMS) 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
800.621.7440
312.263.0456

CMS is fully accredited by the Liaison Committee on Medical Education (LCME). The U.S. Department of Education recognizes the LCME for accreditation of programs of medical education leading to the MD degree in the United States and Canada. 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 fosters institutional and program improvement. It 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, sex, sexual orientation, color, creed, religion, national origin, disability or age in admissions or employment or in any programs or activities. It is the University's intent to comply with applicable statutes and regulations, including Title IX of the 1972 Education Amendments and Section 504 of the Rehabilitation Act of 1973. Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 both prohibit discrimination against individuals with disabilities by mandating a provision of reasonable accommodations to make limitations to what services can be provided. It is the University's goal to assist students in developing their potential in light of what is feasible and reasonable under the law. Refer to the RFUMS Student Handbook for Educational Opportunity Policies and Procedures.

LOCATION

The Chicago Medical School is located on the campus of Rosalind Franklin University of Medicine and Science at 3333 Green Bay Road, North Chicago, IL 60064. The University is situated in the northern suburbs of Chicago, with easy access to downtown Chicago and the surrounding areas by car or public transportation. For directions and a map, [click here](#).

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
(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 1st.

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 to matriculate.

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 CMS 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 to CMS are required to have completed 90 hours of undergraduate level education at an accredited institution. Listed below are those science courses required for admission to the school. However, applicants are urged to seek a broad based education that includes the humanities and social sciences.

- **Biology:** A one year course with laboratory experience is required. Advanced placement credits can be used to satisfy this requirement, but the application will be strengthened if upper level courses are taken when advanced placement credits are granted.
- **Chemistry:** Full year course in general (or inorganic) chemistry with laboratory is required. Advanced placement credits may be used to meet this requirement. A full year of organic chemistry with laboratory is required. A one semester course in organic chemistry supplemented by a semester course in biochemistry will substitute for the traditional year of organic chemistry. If the biochemistry course does not have a laboratory component, either an advanced chemistry course with laboratory or an in depth, wet laboratory, research assistant experience will substitute.
- **Physics:** A one year course with laboratory is required. Advanced placement credits may be used to meet this requirement.
- **Mathematics:** A one year course in calculus and a semester course in statistics are advised, but not required.

In addition to meeting coursework requirements, CMS applicants should have leadership experience, excellent communication skills, a high level of professionalism, and demonstrated initiative. The admissions committee is seeking applicants who understand the importance of interprofessional health care and thrive in a diverse community.

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 CMS faculty members and 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 who 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

CMS 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 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.

Please consult the Registrar's Website for the University grading policy.

Professionalism 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. Most importantly, the CMS student is expected to develop and maintain the highest 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 student's achievement reflects cognitive performance AND meeting or exceeding the standards for the six core competencies of the Chicago Medical School. Professionalism is assessed using a number of metrics including appropriate behavior, completion of course surveys and active and timely participation in assignments. In clinical clerkships, performance on each of the competencies 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. This time frame does not include approved leaves of absence. The total amount of time that can pass with leaves of absence is 7 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 or clerkship, for failing twelve or more weeks of senior electives, or for documented failure to develop and maintain acceptable standards of ethical integrity, professional judgment and 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 CMS faculty members recommended by the Academic Assembly and two student members appointed by the Associate Dean for Student Affairs and Medical Education. The Associate Dean for Student Affairs and Medical Education in CMS represents students' interests before this committee.

STUDENT RECORDS AND TRANSCRIPTS

All documents and records pertaining to a student's admission and academic performance in the University are filed in the Office of the Registrar. Refer to the RFUMS Student Handbook for information regarding Students' Personal and Academic Information.

LEAVE OF ABSENCE

Students at CMS 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.

For policy information regarding Leave-of-Absence and Withdrawal, please visit the Registrar's Office website.

TUITION AND OTHER EDUCATIONAL EXPENSES

The following table shows the educational expenses for entering students at CMS effective for the 2012-2013 academic year.

Direct Educational Expenses Tuition (Annually): \$46,873.00

Student Council Fee, Freshmen: \$160.00

Disability Fee (varies): (approximate) \$250.00

Technology Fee: \$200.00

Student Service Fee: \$90.00

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, USMLE Step I, Sophomores: \$525.00

National Board Fees, USMLE Step II, Seniors: \$1,580.00

*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 AND 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 must at least be 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.

STUDENTS WITH DISABILITIES

It is the intent of Rosalind Franklin University Medicine and Science and CMS 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 Coordinator in the Division of Student Affairs and Enrollment Management.

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 MD DEGREE

To be awarded the MD degree from CMS, a student must accomplish the following:

- Pass courses in Anatomy, Biochemistry, Clinical Epidemiology, Embryology, Genetics, Histology, Essentials of Clinical Reasoning, Medical Ethics, Clinical Molecular and Cell Biology, Neuroscience, HMTD 500, Clinical Reflections I and Physiology to complete the first academic year.
- Pass courses in Essentials of Clinical Reasoning, Clinical Neuroscience, Microbiology and Immunology, Pathology, Pharmacology, Clinical Skills, Clinical Reflections II and Patient Safety, Prevention and Professionalism to complete the second academic year. Students must complete 3 credits of sophomore electives and must pass the USMLE Step 1 to complete the second year of the curriculum.
- Pass clinical clerkships in Emergency Medicine, Family Medicine/Primary Care, Internal Medicine, Neurology, Obstetrics/Gynecology, Pediatrics, Psychiatry, Surgery and Clinical Reflections III and a required Clinical Skills Exam (OSCE) to complete the third year of the curriculum.

- Pass a required Sub-Internship and 32 weeks of approved electives. Students must also pass 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 above.
- Complete all requirements in no more than 5-1/2 years from first matriculation.

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 CMS 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, or Physiology 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 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 biomedical science 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 medical-graduate didactic and research program before entering the clinical clerkships of medical school. The combined program requires a minimum of six years of full-time study for its completion. Application for the MD/PhD program is made after acceptance into Medical School.

MASTER OF SCIENCE PROGRAMS IN CLINICALLY ORIENTED SUBJECTS FOR MEDICAL STUDENTS

CMS offers selected medical students the opportunity to earn the MD degree and a clinically oriented MS degree in 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 in Pathology 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 are 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 appears on the student’s transcript.

EDUCATIONAL COMPETENCIES AND LEARNING OBJECTIVES

The objectives of CMS 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, students 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.

This core competency is met by satisfactory completion of the preclinical course work, passing internal exams, and passing performance on Step 1 USMLE.

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 a 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.

This core competency is met by satisfactory completion of the required clerkships, passing internal exams, passing NBME subject exams (when given) and passing performance on Step 2 CS and CK USMLE.

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 one's self.
6. Understand the financial, organizational and other conflicts of interest inherent in the practice of medicine.
7. Recognize and accept limitations to one's own 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.

This core competency is met by satisfactory completion of all years of the educational program, passing internal exams, passing external (national) exams, participation in service learning and community outreach projects and working as an effective member of society.

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.

This core competency is met by satisfactory completion of all years of the educational program, passing internal exams, passing NBME subject exams (when given) and passing performance on Step 2 CS and CK USMLE.

V. Systems-Based, Inter Professional Practice. Demonstrate an awareness of and responsiveness to the larger context of health care and be able to call on system resources and other health care 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 health care 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 health care systems.
6. Demonstrate knowledge of practice management.
7. Identify and address systematic practices that increase the risk for patients.

This core competency is met by satisfactory completion of all years of the educational program, passing internal exams, passing external (national) exams and working as an effective member of the healthcare team.

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 health care 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.

This core competency is met by satisfactory completion of all years of the educational program, passing all internal and external exams and obtaining a residency in the specialty field of choice.

STATEMENT OF POLICY ON PROFESSIONALISM AND ETHICS

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 health care providers in the clinical setting and as researchers in the laboratory or clinic. All students should 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, regardless of race, color, creed, ethnic origin, religion, disability, gender, sexual orientation, or socioeconomic 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. Any departures from these standards may result in disciplinary action.

STUDENT TREATMENT

Students have a right to work and study in an environment free from harassment. The University will not tolerate student mistreatment. A core principal of RFUMS is the education of students who will meet the health care needs of society in a caring, competent, and professional manner. Insensitivity during training/education runs counter to the fundamental tenets of health care and impairs the ability of many students to maintain their idealism, caring, and compassion past training into their careers. Refer to the RFUMS Student Handbook for the Student Treatment Policy.

TEACHING HOSPITAL AFFILIATIONS

Advocate Christ Medical Center (ACH) is a 648-bed teaching, research and referral medical center in Oak Lawn, Illinois. 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 (AIMMC) 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 (ALGH) 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, Illinois, the hospital serves the north and northwest suburbs of Chicago. Advocate Lutheran General Hospital is the primary teaching hospital for CMS.

Advocate Condell Medical Center is a newly transitioned 283-bed multidisciplinary hospital that has been serving the community since 1928 in Libertyville, Illinois. As the largest health care provider in Lake County, Advocate Condell is a community-based hospital with more than 2,400 employees.

John H. Stroger, Jr., Hospital of Cook County (CCH) is a 460-bed 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).

Captain James A. Lovell Federal Health Care Center (FHCC) is a 150-bed teaching hospital located on Green Bay Road next to CMS. The Lovell Federal Health Care Center serves as the long-term care referral center for veterans and active duty military personnel. It has capacity for 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.

Centegra Hospital is located in McHenry County and is a Level II Trauma Center. It provides services to the counties west of CMS and is a new site for the students' clinical rotations in medicine, surgery, and psychiatry.

CONTINUING MEDICAL EDUCATION

Continuing medical education (CME) 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, CMS has sought to participate in this professional development. The objectives of the program are to:

1. Provide high-quality educational programs for alumni and 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 and 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 physicians.

Each year, about 30 symposia are sponsored by the CME office in conjunction with the school departments. About 2,500 registrants attend 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 applicable for state medical licensure.

RESIDENCY PROGRAMS

CMS 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 Office of Clinical Affairs.

FINANCIAL ASSISTANCE

Student Financial Services 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 Student Financial Services 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 financial need, which is used in the awarding of subsidized Federal loans.

Students needing additional information may contact Student Financial Services by calling (847) 578-3217 or via e-mail at financial.services@rosalindfranklin.edu.

CMS Alumni Scholarships and Trustee Merit Scholarships

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

Private CMS Scholarships and Loans

Through the efforts of several CMS benefactors, a limited number of direct gift awards and a restricted amount of institutional loan funds are made available to medical students experiencing extreme financial need. Amounts vary according to financial 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, or 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. For further information, please call: Army (414) 476-6622; Navy (847) 688-7100, ext. 165; or Air Force (312) 922-2923.

National Health Service Corps (NHSC) 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 the NHSC Scholarship, contact the Bureau of Health Professions at 1-800-221-9393, press "1."

ACADEMIC RECORDS

A copy of each student's complete academic record at the University is furnished upon request after each academic quarter attended – a written request form is available on the Registrar's Website. Students are encouraged to periodically monitor their academic progress via WebAdvisor.

ACADEMIC CALENDAR

All Schools within RFUMS operate using a quarter calendar and credit is expressed in quarter hours.

STUDENT HOUSING

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

STUDENT SERVICES AND PROGRAMS

The Division of Student Affairs and Enrollment Management helps students maximize their academic experience and supports their academic success by fostering their professional, mental, physical, and social development and by enhancing the quality of campus life. Programs and services are provided to augment students' ability to learn and develop life skills necessary to become productive and caring members of our global society. Programs and services include academic support services, multicultural student services, student counseling service, student life, and tutoring and study skills assistance. See the RFUMS Student Handbook for a list and description of programs and services offered and visit the Division website.

CMS OFFICE FOR STUDENT AFFAIRS AND MEDICAL EDUCATION

Throughout the student's medical education, the CMS Office for Student Affairs and Medical Education 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 the students' academic progress and professional development.

CMS LEARNING COMMUNITIES

The communities provide medical students a familiar cohort of peers that lasts throughout medical school. Under the leadership of a physician faculty mentor (the community mentor), approximately 48 students (comprising one-fourth of each medical school class) develop trust and help one another adapt to the culture of medicine. Communities link vertically with students in other classes through a faculty advisor system. Students in each class from 9-10 faculty advisor groups will be incorporated into a single learning community. Community mentors are responsible for advising, clinical mentoring, teaching, and social support. Community mentors serve as role models in classroom and clinical settings. They reflect on their own views of clinical medicine and provide examples of medical interactions for the students to discuss. Mentors invite students, especially in the M1 year, to shadow them in their clinical work. For students who are interested in specialties outside the mentor's field, mentors will make clinical contacts available for students.

Community mentors participate in ceremonies marking important transitions in the students' education, including the White Coat Ceremony (at orientation), the gross anatomy memorial service (early M1 year), the transition to clinical medicine ceremony (end of M2 year), and graduation. Each community has a limited budget for social gatherings, and mentors work with student volunteers to arrange informal gatherings. Faculty advisors are invited to these informal settings, designed to build familiarity and trust among students and faculty affiliated with the community.

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 CMS Office for Student Affairs and Medical Education 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.

CMS OFFICE FOR UNDERGRADUATE STUDIES

The CMS Office for Undergraduate Studies designs, schedules, and evaluates the CMS educational program leading to the MD. 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 also manages several interdisciplinary courses including first-year courses in Clinical Epidemiology and Introduction to Biomedical Ethics and Health Law, a second year course in Patient Safety, Prevention and Professionalism, the two-year interprofessional Essentials of Clinical Reasoning course, the capstone Clinical Skills course given just prior to entrance into the third year clinical rotations, the required M3 Clinical Skills Exam and several Sophomore and Senior Elective courses.

STUDENT ORGANIZATIONS, SERVICES AND ACTIVITIES

CMS is concerned with the total educational environment of its students and strives to facilitate their personal growth as well as intellectual development. For a list of student organizations, visit the Office of Student Life.

University Student Council

Students in all schools participate in the RFUMS Executive Student Council. This group is organized and run entirely by students and is concerned with the overall policy and direction of the institution as these relate to student concerns. The Council plans and supports campus social events and student delegate trips to national professional group meetings. It also names student representatives to school committees 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.

In addition to the University Executive Student Council, CMS has chapters in many of the national medical student associations. These include the American Medical Student Association, 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 representatives 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, Year 1/ Year 2 and Year 3/ Year 4 subcommittees of the Educational Affairs committee, and faculty and dean search committees.

HONORS, AWARDS AND PRIZES

CMS publicly recognizes outstanding scholarship, research accomplishments and community service of its 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 CMS Chapter was chartered in 1965. This society promotes scholarship and research in medical schools, encourages high standards of character and conduct among students and graduates, and recognizes high achievement in medical science and practice. Students who have demonstrated leadership and academic promise of future achievement are elected. Membership is selected 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 individuals 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 honors medical students, residents, role-model physician teachers and other exemplars 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 CMS. Students are selected for membership during their junior year by peer nomination with final selection by a committee of students and faculty. The 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

Additional Policy and Resources

All students are required to follow the policies that supplement this Catalog which include, but are not limited to, RFUMS Student Policies Handbook. Please consult these documents for additional information. The RFUMS Student Policies Handbook also details resources available to all students including Housing, Health Insurance, Student Organizations, Executive Student Council, etc.

BASIC SCIENCE DEPARTMENTS

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 Clinical Molecular Cell Biology and Medical Biochemistry. These 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 metabolic regulation, proteomics and biomarker discovery, membrane transport proteins, neuroendocrine and neurotrophic proteins, signal transduction, RNA-protein interactions and membrane protein structural biology. Graduate students are integrated into these research programs. Opportunities for medical student participation in research are available during the summer and on a part-time basis throughout the school year. Students with strong research interests are encouraged to investigate the combined degree program (MD/PhD) with the chair. Medical students may pursue the MD with Distinction in Research in the department.

Required Courses

MBCH 502 Clinical Molecular Cell Biology

The molecular and cellular processes common to all eukaryotic cells are studied and, where appropriate, comparisons to prokaryotic cells are made. Nucleic acid and protein structure and function, gene expression, and cell cycle regulation are examined. 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.

MBCH 505 A, B & C Medical Biochemistry

The fundamental bases of biological reactions of important compounds in the normal and disease states of the human organism are studied. Emphasis is placed on the regulation and integration of metabolic processes as it relates to medicine. 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.

MBCH 508 Clinical Genetics

Clinical Genetics uses problem-based learning (PBL) sessions and provides students with a basic knowledge of the genetic abnormalities that lead to patient illnesses with known genetic components. Students learn to develop a patient treatment and management plan as a collaborative task, make an oral presentation of their findings and then write up the findings as a modified patient chart note. Different clinical cases with a genetic basis are introduced in each PBL session.

Elective Courses

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.

MBCH 630 Enzyme Structure and Mechanism

This is a course of lectures, student presentations, and seminars by outside speakers on aspects of enzymology. The following subjects are covered:
protein sequence methodology, X-ray crystallography, computer graphic modeling, chemical and enzyme kinetics including regulatory kinetics, enzyme mechanisms, chemical modification of enzymes, and site-directed mutagenesis.

Faculty and Associated Staff:

Jun-yong Choe, PhD, Assistant Professor

Carl Correll, PhD, Associate Professor

Marc Glucksman, PhD, Professor and Chair

Adrian Gross, M.D., Associate Professor

Ronald Kaplan, PhD, Professor, Vice Dean (CMS) and Vice President for Research (RFUMS)

John Keller, PhD, Professor Emeritus

Robert Kemp, PhD, Research Professor

Min Lu, PhD, Assistant Professor

David Mueller, PhD, Professor

Kenneth Neet, PhD, Professor, Associate Dean for Research

Kyoung Joon Oh, PhD, Assistant Professor

Henry Symersky, 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 curriculum including Clinical Anatomy, Histology, Embryology and part of the Clinical Molecular and Cellular Biology course. 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 courses focus on the structural organization of the adult human body in relation to its development and function. This material is presented as lectures, audiovisual demonstrations, laboratory participation (dissections and microscopic study) and individual consultations by faculty committed to excellence in teaching. Clinical lectures are presented by clinical specialists, such as surgeons and radiologists, who emphasize anatomical principles and their relevance to clinical problems.

Required Courses

MCBA 500 A, B, C Clinical Anatomy

Both gross anatomy and developmental anatomy are studied in this course. Laboratory time is devoted exclusively to the regional dissection of human cadavers. Supplementary offerings within the course include films, prosected cadavers, and bone sets for individual study.

MCBA 502 A, B, C 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.

MCBA 504 Embryology

This 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.

Department Faculty:

Christopher Brandon, PhD, Associate Professor

Joseph DiMario, PhD, Professor and Dean, School of Graduate and Postdoctoral Studies

Karen DiMario, MS, Instructor

Miroslav Dunder, PhD, Assistant Professor

William Frost, PhD, Professor and Chair

Nasrin Haghighat, PhD, Instructor

Michelle Hastings, PhD, Assistant Professor

Hongkyun Kim, PhD, Assistant Professor

Monica Oblinger, PhD, Professor

Michael Sarras, PhD, Adjunct Professor

Barbara Vertel, PhD, Professor

DEPARTMENT OF CELLULAR AND MOLECULAR PHARMACOLOGY

Faculty are dedicated to teaching the basic principles of pharmacology and performing research in the discipline. Opportunities for medical student participation in departmental research projects are available during the summer and as research electives in the sophomore year. Elective courses are offered that cover 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 their application in treatments of pathophysiological basis of disease. The course promotes the development of a rational approach to therapeutics based on sound understanding of basic principles. The course is organized by drug classes according to their therapeutic effects and mechanisms of action. Clinical conferences and small group sessions are used to underscore the basic pharmacology and pathophysiology in the treatment of disease. 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 gene expression, analysis of pre-mRNA splicing, neuropharmacology, and principles of drug action and therapeutics have been developed.

Specific areas of research of departmental faculty include drug addiction, neurodegeneration and Parkinson's disease, Schizophrenia, the neurobiology of learning, emotion, and behavior, neuronal plasticity, morphology, ultrastructure, synaptic plasticity and integration, basal ganglia structure and function, gene expression and regulation of alternative splicing.

Sophomore Required Course

MCMP 600 A, 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. Pharmaco-genetics, gene therapy, drug interactions, therapeutic uses, contra-indications and side effects, and the toxicology of selected compounds are presented.

Sophomore Elective Courses

MCMP 610 Molecular and Biochemical Bases of Neuropsychiatric Disorders

This course takes a multidisciplinary approach to present various neurochemical correlates of normal and abnormal behavior. Current biochemical theories of different neuropsychiatric disorders are presented in some detail; the rationale underlying use of different classes for the treatment is presented. Discussion of addiction-causing drugs and relationship to their suggested mechanism of action is presented.

MCMP 612 Neuropharmacology

This course focuses on the biochemistry of neurotransmitters in the CNS and factors regulating their activity. Chemical structure-pharmacological activity relationships of psychotropic drugs and the rationale behind their chemical modification that guide drug design are presented.

MCMP 613 Principles of Drug Action and Therapeutics

The purpose of this course is to present a comprehensive and coherent explanation of the science of pharmacology in terms of its basic concepts and principles. It will cover various ethics, moral and legal aspects of drug development. It will follow the path of various classes of drugs from their administration to their absorption, distribution, biotransformation and elimination. Dose-response relationship and host factors influencing drug reactions and interactions will be discussed.

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.

MCMP 618 Anatomy and Function of Brain Reward Circuits

This research elective will focus on the anatomy and function of brain reward circuits. Anatomical studies will be performed in rodent models whose brain activity will have been previously established using neurophysiological techniques. Students will learn a variety of skills, such as histological techniques, bright-field and fluorescent microscopy, and statistical and data analysis. Finally, students will attend weekly lab meetings, where they will interact with other lab members, present data, and familiarize themselves with research methods in health-related sciences

Faculty and Associated Staff

Charles P. Barsano, MD, PhD, Professor

Seymour Diamond, MD, Adjunct Professor

Dominick Duelli, PhD, Assistant Professor

Rachid El Kouhen, PhD, Adjunct Assistant Professor

Patricia Loomis, PhD, Research Assistant Professor

Michela Marinelli, PhD, Associate Professor

Aron David Mosnaim, PhD, Professor

Judith Potashkin, PhD, Associate Professor

J. Amiel Rosenkranz, PhD, Assistant Professor

Ann Snyder, PhD, Associate Professor

Heinz Steiner, PhD, Professor and Chair

Kuei Tseng, MD, PhD, Assistant Professor

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

Infectious diseases 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 year-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, protozoan and metazoan parasites, as well as the host-parasite relationships, including immunologic mechanisms in infectious diseases. The etiology, pathogenesis, epidemiology, prevention and treatment of infectious diseases are emphasized. Special attention 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 coincide with the topics encompassed in the course. Students are assured of receiving information that is accurate and current from faculty 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 seek to provide efficient and effective means of disseminating information through lectures, case studies, a study guide book, written notes of lecture materials, POPS (Patient-Oriented Problem Solving) sessions and an open-door policy for those requiring help or information. Sophomore and senior electives are offered throughout the year in selected areas of microbiology and immunology to students interested in a deeper understanding of infectious disease processes and immune mechanisms.

Required Courses**MMIC 600 A, 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.

Sophomore Elective Courses**MMIC 643 Advanced Immunology**

This elective is designed for students seeking an in-depth knowledge of contemporary immunology.

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.

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.

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

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.

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.

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.

Faculty and Associated Staff

Kenneth Beaman, PhD, Professor

Virginie Bottero, PhD, Research Assistant 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

Gulam Waris, PhD, Assistant Professor

Chao-lan Yu, PhD, Associate Professor

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, taken during the Spring Quarter of their freshman 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 projects are available during the summer and as electives during the sophomore and senior years.

Required Course

MNSC 501 Medical Neuroscience

An interdisciplinary introduction to the structure and function of the nervous system is 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, case-based 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, sleep disorders, schizophrenia, affective disorders, and Alzheimer's disease.

Sophomore Elective Course

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.

Faculty and Associated Staff

Marjorie Ariano, PhD, Professor and Associate Dean, Undergraduate Studies

Lise Eliot, PhD, Associate Professor

Robert Marr, PhD, Assistant Professor

Daniel Peterson, PhD, Professor

Grace Stutzmann, PhD, Associate Professor

Anthony West, PhD, Associate Professor

Marina Wolf, PhD, Professor and Chair

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 and a variety of elective courses of study and research opportunities for medical students. Normal system physiology is presented as well as discussions of clinically relevant pathological conditions. Teaching methods use different venues, such as large lecture presentations, small group conferences, individual consultation and laboratory demonstration-participation. There is considerable one-on-one interaction between students and faculty and individualized feedback on progress in mastering course material.

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

Required Courses

MPHY 500 A, B, C 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.

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.

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.

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.

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.

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.

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.

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.

Faculty and Associated Staff

Dmitri Y. Boudko, PhD, Assistant Professor
 Neil A. Bradbury, PhD, Professor
 Robert J. Bridges, PhD, Professor
 Lisa Ebihara, MD, PhD, Associate Professor
 Sarah Garber, PhD, Associate Professor
 Raul Gazmuri, MD, PhD, Associate Professor
 Timothy Hansen, PhD, Professor and VP Faculty Affairs (RFUMS)
 Richard Hawkins, PhD, Professor
 Donghee Kim, PhD, Professor
 Charles McCormack, PhD, Professor
 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, Professor and Chair
 Juan Vina-Ribes, MD, PhD, Research Professor
 Carl White, PhD, Assistant Professor
 Demetrios Zikos, MD, Associate Professor

OFFICE OF UNDERGRADUATE STUDIES

The Office has oversight for the clinical courses taken in the preclinical years of the educational program. Many of these courses are shared across schools/colleges at RFUMS and thus provide students an interprofessional learning environment that develops clinical reasoning and clinical skills.

Required Courses

MCUR 502 A, B, C and MCUR 602 A, B, C Essentials of Clinical Reasoning (1 and 2)
 ECR is an interprofessional course that serves at the entry point to the student’s clinical experience. Within the context of this course, students will be expected to develop proficiency in history taking, communication, and clinical exam skills. Developing the language and understanding the format of effective and professional medical communication will be emphasized while also learning the art of history taking. Students will be expected to participate in various learning venues including: lecture, lab sessions, small-group discussions, and independent projects. Proficiency and development will be assessed through written, oral, and performance-based evaluations as well as an ongoing assessment of

professional behavior. Working with and evaluating real and standardized patients is also a mandatory component of this course. Throughout the two years, students will be introduced to, and start gaining confidence in the knowledge and logic necessary to think critically as a clinician.

The first year of the course will focus on appreciating and understanding the person through effective communication and clinical examination techniques. The normal clinical exam as well as learning the components necessary for thorough history taking and reliable communication will be emphasized. As students transition to the second year of the course, the content will build upon the foundation learned in first year. However the emphasis will become more oriented toward understanding pathology and disease states. The focus will turn to more symptoms-based learning and refining history taking and physical exam skills needed to evaluate and assess the abnormal. Learning to develop a differential diagnosis and acquiring finesse in communication are important skills to gain in this dimension of clinical development. This course ultimately serves as the foundation of the development of the effective clinician.

MMTD 510 Introduction to Biomedical Ethics and Health Law

Ethical issues that arise in the practice of medicine and recognition of the controversial nature of topics such as patient's rights are presented in the Socratic Method. Inquiry into the historical basis of ethical problems, appreciation for alternative positions and identifying the ethics associated with new developments in the practice of medicine are discussed.

MMTD 509 Clinical Epidemiology

Basic concepts of biostatistics and introductory Clinical Epidemiology are presented using small group sessions. Elements of research design are stressed so that the student is able to critically evaluate research literature and formulate PICO questions. Practice in simple statistical skills and analysis is included.

MMTD 601 Patient Safety, Prevention and Professionalism

Patient Safety: Improved patient safety is a key target for increasing the quality of health care provided. This course provides the basics of patient safety, quality improvement, communication/collaboration, error science, and process improvement. **Prevention:** The Guide to Clinical Preventive Service Report of the U.S. Preventive Services Task Force (USPTF) is discussed to help students understand how clinicians can provide effective preventive services today. Students systematically review the current literature supporting the key questions, estimate the benefit and harm to providing the service and make a determination based on the balance of net benefits as to whether or not the service should be provided. **Professionalism:** Discussions are provided about topics such as the intersection of ethics and the law, research ethics and an appreciation for obligations to individual patients and society as a whole and the nature of translational research in applied medical management.

Sophomore Elective Courses

MCUR 608 Sophomore Independent Project

Sophomore medical students wanting to do an independent project as an elective must complete a proposal form which includes the signature of the responsible supervisor. Students can be creative and select topics of interest to pursue through this elective.

MCUR 617 Managing Cardiopulmonary Emergencies - The First 5 Minutes

This intensive, hands on elective is designed to help students improve their knowledge and skills related to managing cardiopulmonary emergencies. This is not a formal Advanced Cardiac Life Support (ACLS) course and course completion will not result in ACLS certification. The course will introduce basic EKG rhythm interpretation, airway management, pharmacologic interventions, teamwork principles, and build upon BLS competencies.

MIPS 600 Literature in Medicine

Students will select 2 books from a suggested reading list to read and participate in three small group face to face discussions and weekly on line discussions over a ten week period. The books will represent literature appropriate to medicine and will focus on the experience of being a patient and of being a doctor. A sample reading list will be provided, and additional input will be sought from the participants. The group will be broken into smaller groups each facilitated by a of the faculty member. Each small group will select 2 books from the reading list. Students will write a one page reflective paper after reading each book and discuss these in the small group sessions. Students will read, serve as discussion leader for one or more sessions, participate in face to face meetings and in on line forums.

MCUR 610 Cultural Diversity and the Management of Healthcare Services

This elective introduces the importance of providing culturally appropriate health care services for the diverse ethnic populations encountered in the U.S. The significance of family traditions, cultural heritage, health and healing traditions on the patient's interactions with the healthcare delivery system and providers will be explored. Students will develop interventions that managers of healthcare facilities and providers can use to diminish the conflict patients and staff may experience when traditions related to the patient's cultural heritage are at odds with the norms in the American healthcare delivery system.

MCUR 611 Practice Management

Practice Management offers the essential elements and support for a successful private practice concentrating on facility management and organizational skills. Topics will include the organizational management landscape and management functions such as planning and decision-making, organizing, staffing, and budgeting. This course addresses practical concerns such as committees and teams and human resource management considerations such as training and development, retention and recruitment, and communication.

MCUR 612 Training in Cultural Awareness in Healthcare

This course provides the tools necessary for providing culturally sensitive care within the hospital/clinic setting. Through the utilization of small group discussions, case studies, videos, and interprofessional/team activities, students will acquire a clearer understanding of their expectations and biases as they pertain to their approach of individuals from different cultures and ethnicities. Activities will use both the traditional classroom setting and on-line forums. By encouraging the exploration of culturally appropriate behaviors, this course will ensure more positive treatment outcomes and assist healthcare professionals in their pursuit to treat patients both holistically and on an individual basis.

MCUR 615 Clinical Exposure Program

Students are assigned a preceptor in a specialty of interest to them. The student observes the activities of the clinical specialty in which their preceptor works (hospital, clinic, and ambulatory). This experience focuses on the doctor-patient relationship and how it works, what the physician does to make it work, and what sensitivities must be observed to establish a strong relationship. Students learn some of the subtleties involved in the doctor-patient relationship as the student observes the day-to-day practice of their preceptor. Students gain experience interacting with patients and their families, other physicians, members of the healthcare team and the medical office staff.

MCUR 601 Medical Spanish

This elective provides a basic and fundamental exposure to the Spanish language, particularly as relates to healthcare. The elective will focus on one component of the history and physical exam each week. A small amount of class time will also be set aside for exposure to the culture, music, art, architecture and cuisine of various Spanish-speaking cultures. Some background in Spanish language preferred, but not required. Required elements of the course include in-class participation, vocabulary and grammar activities and a written final exam.

MCUR 605 Academic Peer Teaching

This elective is intended to provide M1 students with academic assistance from a peer (M4). The tutor gains a better conceptual understanding of the material as they explain it to others and learns about methods and principles of education that enhance learning. M1 benefits from the experience of a peer who has done well in the course and can help 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 Experiences in a Developing Country

Students complete at least 90 hours of exposure to clinical and cultural practices in a developing country. The student will take and observe histories, exams and medical/surgical practices, supervised by a physician mentor. The mentor must come from a certified list maintained by the Office of Student Affairs and Medical Education. Students submit a short summary of their experiences and evaluate their program in the first week of the M2 year.

GPSC 600 Psychosocial Issues in Blood Pressure Regulation and Cognition

This elective is designed to enhance the student's understanding of the role of psychological issues in medicine. The student will read journal articles in behavioral medicine. In addition, the student will perform data analysis. To enable the student to develop proficiency in evaluating journal articles from a methodological perspective. The student will learn to utilize the SPSS software package to develop data files and to perform analyses with precision. The student will also learn to strengthen his/her writing skills with respect to the analysis and presentation of research data from this laboratory.

Senior Elective Courses

HHCM 801 Healthcare Administration and Management

Students are introduced to the fundamentals of the healthcare business industry. Topics include various healthcare delivery systems, healthcare law, risk and quality management, and leadership and management. Competency in communication, leadership, healthcare management, business knowledge and knowledge of the healthcare environment are discussed. Students collaboratively submit assignments in the first half of the week and respond to/ discuss the work of other students in the second half of the week. At the end of the second week, students submit an individual paper to demonstrate competency in all topics and how this new knowledge will be implemented in their future medical practice. The course is facilitated by faculty and M4 students.

HHCM 800 Teaching Healthcare Administration and Management

The M4 facilitate M2 students in HHCM 801. Topics include various healthcare delivery systems, healthcare law, risk and quality management, and leadership and management. Competency in communication, leadership, healthcare management, business knowledge and knowledge of the healthcare environment are discussed. M4 have earned a Masters in Healthcare Administration and Management from RFUMS College of Health Professions. If students with a Masters degree are not available, students who hold a Certificate in Healthcare Administration and Management will be eligible to assist in moderating the course.

MCUR 802 Global Health Initiatives

This elective facilitates development of qualities and abilities necessary to work globally as a physician. Students are provided with opportunities to refine and develop educational, professional and personal goals and objectives that will support 1) pursuit of their vision in global health and 2) acquisition of the

abilities necessary to address the international health needs with compassion, integrity, high ethical standards and a high level of competence.

MCUR 805 Academic Peer Teaching

See description under MCUR 605 (Sophomore Elective Courses)

MCUR 808 Clinical Skills Course Elective

Clinical instruction of M2 students, facilitation of small groups, and review of clinical experiences with individual students occur in this elective. M4 review M2 performance in the OSCE experience, assist in writing SOAP notes, writing orders, presenting patients, suturing, reading X-rays and EKG.

HMTD 800 Teaching Culture in Health Care

M4 participate as group leaders in standardized volunteer teaching sessions for the HMTD 515 B (Culture in Healthcare) course. M4 review the teaching case, participate in the training session for the volunteers, lead small group sessions for the HMTD 515 interprofessional groups, and evaluate the effectiveness of those sessions.

MCUR 896 Literature in Medicine Online Elective

M4 work in groups of five. Each group selects two books to read (one about being/becoming a doctor, and one about the experience of being a patient) from a suggested reading list. M4 participate in on-line discussions about the reading and submit a reflective paper about each book. Each student submits a one page "autobiography" during the first week and a critical incident report during the second week. Each group has a faculty facilitator. Students reflect on their own evolving identities as physicians and discover the role that literature plays in shaping one's professional identity as a physician and connecting to the patients' experience.

MCUR 850 - Senior Elective in Essentials of Clinical Reasoning

This is an opportunity for the fourth year student to improve upon his/her history, physical examination, and clinical reasoning skills by teaching and mentoring the freshman and sophomore medical and podiatry students these same skills. Senior students will receive training to teach in small group settings, learn appropriate evaluation methods, contribute to curriculum development, and learn to write exam questions. This elective will foster peer to peer communication and learning and prepare students for their teaching role as residents and faculty.

MCUR 851 Proposal for an Independent Senior Elective project

This serves as an "umbrella" elective for numerous potential projects that students develop. The completed proposal is reviewed and approved by the supervising faculty member and the Associate Dean for Undergraduate Studies.

HNUT 801 Fundamentals of Clinical Nutrition (On-line)

Provides an in-depth overview of human clinical nutrition including the components and measurement techniques of a nutritional assessment. The etiology and medical nutrition therapy of various disease

conditions such as obesity, cardiovascular disease, hypertension, osteoporosis, diabetes mellitus, gastrointestinal, renal, neurological, pulmonary diseases, anemia, sepsis, trauma, cancer, and other metabolic diseases are discussed. Students will be able to discuss medical nutrition therapies for various medical conditions with other members of the healthcare team and to implement the appropriate medical nutrition therapy for their patients and clients.

HNUT 802 Fundamentals of Human Nutrition (On-line)

This course provides an in-depth overview of human clinical nutrition including the components and measurement techniques of a nutritional assessment as well as the etiology and medical nutrition therapy of various disease conditions such as obesity; cardiovascular disease; hypertension; osteoporosis; diabetes mellitus; gastrointestinal; renal; neurological; pulmonary diseases; anemia; sepsis, trauma; cancer; and other metabolic diseases. Students will gain a nutritional perspective of the macronutrients (carbohydrates, proteins, and fats) and micronutrients (vitamins and minerals), to understand the physiological and psychosocial factors associated with obtaining and maintaining a healthy weight, and to identify and implement the components of a healthy diet.

Faculty and Associated Staff

Lecia Apantaku, MD, Associate Professor of Surgery, Assistant Dean, Clinical Science Education

Marjorie Ariano, PhD, Professor of Neuroscience, Associate Dean, Undergraduate Studies

Christina Belmonte, DO, Lecturer

Laurie Broutman, MD, Associate Professor of Medicine

James Carlson, MS, PA-C, Assistant Professor in Physician Assistant, Assistant Dean, Evaluation and Assessment

Sheryl Juliano, MA, Curriculum Evaluation Specialist

Jeanette Morrison, MD, Associate Professor of Medicine

Amy Pabst, MD, Assistant Professor of Family and Preventive Medicine

Gordon Pullen, PhD, Assistant Professor of Physiology, Assistant Dean, Basic Science Education

Sally Venus, Manager of Operations, Undergraduate Studies

INTERPROFESSIONAL HEALTH CARE STUDIES

HMTD 515 A, B Interprofessional Teams and Culture in Health Care

This is an experiential learning opportunity for students to interact in interprofessional health care teams which extends through the fall and winter of the first year. This interactive course is intended to help prepare the health care professional student to provide effective patient-centered health care through small group discussion and problem solving activities. Topics include: team interaction, communication, service learning, information literacy, quality improvement, healthcare professions, diversity in society, the impact of culture, ethnicity and religion on communication and the provision of services, disparities in the healthcare delivery system, and awareness of the impact of a provider's own wellness and illness beliefs on the decisions he/she makes for patients. Interprofessional teams of students develop and participate in significant community based service learning projects.

CLINICAL SCIENCE DEPARTMENTS

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 M3 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 and observe emergencies, trauma and obstetric anesthesia.

Faculty and Associated Staff

Xuan Au-Trong, MD, Assistant Professor
 Mary Kay Bissing, MD, Lecturer and Chair
 Eva Buch, MD, Assistant Professor
 Henri Havdala, MD, Professor Emeritus
 Divyang Joshi, MD, Assistant Professor
 Matilda Koppera, MD, Assistant Professor

Rama Kuchipudi, MD, Assistant Professor
 Aurea Luzano, MD, Instructor
 Venkatgiri Mady, MD, Assistant Professor
 Domingo Osunero, Jr., MD, Instructor
 Robert Rogers, MD, Associate Professor
 John E. Vazquez, MD, Associate Professor

DEPARTMENT OF EMERGENCY MEDICINE

The Department of Emergency Medicine provides health care of the highest standard at the following: Mount Sinai Hospital and Medical Center, John S. Stroger Hospital and Advocate Condell Medical Center. The Department of Emergency Medicine is dedicated to providing a premier learning environment for all medical students and physician assistant students. The Department of Emergency Medicine educates residents in all related training programs including emergency medicine, medicine, surgery, pediatrics, family medicine, and psychiatry. The Department of Emergency Medicine, at two of its sites, engages in a significant amount of clinically based research. Most of this research results in publications in premier journals.

Required Course

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 within the second year are introduced and 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.

Sophomore Elective Courses

MEMG 601 Research In Emergency Medicine - CCH

With the faculty or staff mentor, students will select a topic from the broad areas of clinical or health services research: 1) best practices within the emergency department: 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 or staff 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.

Senior Elective Courses

MEMG 824 Emergency Medicine - CCH

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.

MEMG 825 Research in Emergency Medicine - Mount Sinai Hospital

With the faculty or staff 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.

MEMG 827 Urgent and Emergency Outpatient Care – Outpatient Urgent Care Center, St. Petersburg, FL

The student will be scheduled 20, 9 hour day shifts in urgent care setting, seeing acute medical problems. During these hours, the student will see patients under the direct supervision of the attending physician. The student will acquire basic knowledge of outpatient urgent medical conditions through clinical patient evaluation and treatment and associated assigned readings.

MEMG 894 Emergency Medicine - Mount Sinai Hospital

The student will be scheduled 40 hours to work, 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

Suraiya Alvi, MD, Instructor
 Anthony Beckerman, MD, Instructor
 Rebecca Bower-Lewis, MD, Lecturer
 Steven Bowman, MD, Lecturer
 Trena Burke, MPA, Clerkship and Research Program Coordinator
 Pablo Chagoya, MD, Instructor
 Karen Cosby, MD, Lecturer
 Eileen Couture, DO, Lecturer
 Dirk DeHaas, MD, Assistant Professor
 Tobin Efferen, MD, Instructor
 Stephanie Eugene, MD, Instructor
 Jorge Ferrer, MD, Instructor
 Lana Goldman, MD, Instructor
 Leon Gussow, MD, Lecturer
 Ross Heller, MD, Associate Professor
 Colleen Hickey, MD, Lecturer
 Mark Kling, MD, Lecturer
 Paul Krivickas, MD, Instructor
 Paulina Kuchinic, MD, Assistant Professor
 William Lauth, MD, Professor
 Moses Lee, MD, Lecturer
 Jerrold Leikin, MD, Lecturer

Harvey Louzon, MD, Instructor
 William Maloney, MD, Lecturer
 Kris Narashimhan, MD, Lecturer
 Isam Nasr, MD, Lecturer
 Erik Nordquist, MD, Lecturer
 Charles Nozicka, DO, Associate Professor
 Jon Olsen, MD, Lecturer
 Fernando Orellana, MD, Instructor
 John Piotrowski, MD, Lecturer
 Monika Pitzele, PhD, Instructor
 Scott Plantz, MD, Associate Professor
 Douglas Propp, MD, Lecturer and Chair
 Rebecca Roberts, MD, Lecturer
 Eugene Saltzberg, MD, Assistant Professor
 Shair Schabowski, MD, Lecturer
 Jeffrey Schaider, MD, Lecturer
 Michelle Sergel, MD, Lecturer
 Scott Sherman, MD, Lecturer
 Robert Simon, MD, Lecturer
 Amardeep Singh, MD, Assistant Professor
 Amarjit, MD, Assistant Professor
 Michael Slater, MD, Assistant Professor
 Sharon Southe, MD, Lecturer
 Thomas Widell, MD, Assistant Professor
 Olga Zavelisky, MD, Instructor
 Michael Zimmerman, MD, Instructor
 Leslie Zun, MD, Professor

DEPARTMENT OF FAMILY AND PREVENTIVE MEDICINE

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

Required Course

MFPM 700 Family Medicine Clerkship

The M3 student must master cognitive information presented in the didactic conferences; lectures that cover 12 topics common to all primary care and family practice experiences (see lecture schedule). The lecture topics address a variety of issues in family medicine. The lecture content will not be reflected on the written examination. The examination is a standard NBME exam that covers the breadth of family

medicine. Students will become familiar with presentations of symptoms and signs of differential diagnoses through clinical experiences. Many of these disease processes will be illuminated in regular conferences provided at the rotation sites.

Senior Elective Courses

MFPM 803 Sports Medicine - Resurrection Hospital, Chicago, IL

This elective 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.

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.

MFPM 812 Preventive Medicine and Wellness - Northwest Community Hospital, Arlington Heights, IL

The student will have further exposure to Family Medicine in a private office, with an emphasis on preventive care, addiction medicine, musculoskeletal pathology, wellness evaluations and training, exposure to exercise/kinesiology treatments and chronic disease management towards minimizing long-term morbidity.

MFPM 815 Sports Medicine - ACH

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 ACH Family Practice Center. There will be one hour per week of formal lecture on sports medicine topics at Christ Hospital.

Clinics at the ACH 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 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.

MFPM 885 Sports Medicine - ALGH

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.

Faculty and Associated Staff

Abdulmassih Abdulmassih, MD, Assistant Professor

Alby Antoo, MD, Lecturer

Joseph Atto, MD, Assistant Professor

Ihab Aziz, MD, Assistant Professor

Walton I. Baba, MD, PhD, Professor

Inis Bardella, MD, Professor, Associate Dean Faculty Development and Global Health Initiatives

John Benages, MD, Instructor

Stephen Bennett, MD, Lecturer

William Briner, MD, Lecturer

George Brodsky, M, Assistant Professor

Gail Bryant, MD, Assistant Professor

Sangili Chandran, MD, Assistant Professor

Brian Chicoine, MD, Lecturer

Jim Christoforidis, MD, Assistant Professor

Charles Colodny, MD, Assistant Professor

Carlos da Fonseca, MD, Assistant Professor

Seymour Diamond, MD, Adjunct Professor

Lakshmi Dodda, MD, Assistant Professor

Erin Dominiak, MD, Lecturer

Harvey Echols, MD, Instructor

Mark Fields, MD, Assistant Professor

Frederick G. Freitag, DO, Assistant Professor
 Michael H. Friedman, MD, Lecturer
 Darnella Gist, MD, Instructor
 Stuart L. Goldman, MD, Associate Professor
 Arvind Goyal, MD, MPH, Associate Professor
 Judith Gravdal, MD, Professor and Chair
 William Greenfield, MD, Assistant Professor
 Inna Gutman, MD, Lecturer
 Michael Jacobs, MD, Assistant Professor
 Carrie Jaworski, MD, Instructor
 Rajiv Kandala, MD, Assistant Professor
 James Kim, MD, Instructor
 Greg K. Kirschner, MD, Assistant Professor
 Herbert Lipschultz, MD, Associate Professor
 Adolfo Llano, MD, Assistant Professor
 Georgia Lubben, MD, Instructor
 Mohammad Malik, MD, Assistant Professor
 Manfred Man, DO, Assistant Professor
 Jay Mayefsky, MD, Professor
 Dennis McCreary, MD, Assistant Professor
 Timothy McCurry, MD, Lecturer
 Ruksana Nazeer, MD, Instructor
 Senora Nelson, MD, Assistant Professor
 Donald Novey, MD, Assistant Professor
 Jennifer Ota, MD, Assistant Professor
 Steven Pearlman, MD, Assistant Professor
 Bruce Perlow, MD, Lecturer
 Tamar Perlow, MD, Lecturer
 Michael Plunkett, MD, Assistant Professor
 Stuart Richer, DO, PhD, Associate Professor
 Stephen Rittman, MD, Assistant Professor
 Russell Robertson, MD, Professor and Dean, CMS
 Robert Rozner, MD, Instructor
 T. Eric Schackow, MD, Lecturer
 Taher Sobhy, MD, Instructor
 Gerald Stanton, MD, Assistant Professor
 Sajjini Thomas, MD, Lecturer
 Larry Williams, DDS, Assistant Professor
 Deborah Winiger, MD, Lecturer
 Augustine Wong, MD, Assistant Professor
 Miles Zaremski, JD, Adjunct Assistant Professor Liping Zhong, MD, Instructor

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.

Required Courses**MMED 700 Medicine Clerkship**

The M3 Medicine Clerkship is conducted at one of CMS's eight affiliated hospitals. This eight week rotation is offered at John H. Stroger, Jr., Hospital of Cook County (CCH), Advocate Christ Hospital (ACH), Advocate Illinois Masonic Medical Center (AIMMC), Advocate Lutheran General Hospital (ALGH), Centegra Hospital, Mount Sinai Hospital and the Captain James A. Lovell Federal Health Care Center (FHCC). There are designated faculty clerkship supervisors and teaching faculty at each institution. The clerkship presents 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 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 one of the seven CMS's affiliated hospitals. This four week rotation is offered at CCH, ACH, AIMMC, ALGH, Mount Sinai Hospital, and the FHCC. 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 permits 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 judgment in clinical medicine.

Senior Elective Courses

Ambulatory Care

MMED 808 - ALGH

MMED892 - AIMMC

MMED881 - Dr. Singla - Private Practice

MMED 894 – Dr. Kiken – Access Healthcare - Kling

AIMMC, ALGH and Dr. Kiken - 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 endocrinological evaluation and interpret the results of both physical examination and laboratory will be Endocrinology Conferences, Nuclear Medicine- Thyroid Conferences and impromptu didactic sessions for the student to attend.

Cardiology

MMED 814 – CCH

MMED 815 – FHCC

MMED 864 – ALGH

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 ECG's. These sessions emphasize clinical correlation.

Cardiovascular Clinical and Testing

MMED 818 – FHCC

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 – ALGH

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 – CCH

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 – CCH

MMED 822 – Dr. Berk – Private Practice

MMED – 836 Dr. Polisky – Private Practice

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

Dr. Berk, Dr. Polisky- 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 807 – ACH

MMED 826 – Mount Sinai Hospital

MMED 827 – FHCC

MMED 830 – CCH

MMED 865 – ALGH

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 students will be under the supervision of Endocrinology/Metabolism staff members. Students will take part in clinical conferences, ward rounds and journal club.

Gastroenterology

MMED 801 – ACH

MMED 832 – FHCC

MMED 833 – CCH

MMED 834 – AIMMC

MMED 863 – Norwalk Hospital

MMED 866 – ALGH

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 – ALGH

MMED 890 – CCH

MMED 835 – FHCC

MMED 898 – ACH

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.

HIV/Aids

MMED 880 – CCH

Students will learn about HIV primary care including HIV counseling and testing; prevention, diagnosis, and treatment of opportunistic infections; and antiretroviral therapy. Experiences include adult and adolescent HIV clinics, and brief exposure to a walk-in sexually transmitted disease clinic, and specialists in HIV eye, cancer and hematology specialty care, as well as mental health, social work, and chemical dependency support services.

Infectious Disease

MMED 806 – ACH

MMED 839 – FHCC

MMED 840 – Mount Sinai Hospital

MMED 841 – CCH

MMED 870 – ALGH

MMED 893 – AIMMC

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 – ALGH

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 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 – AIMMC

MMED 817 – Norwalk Hospital

MMED 819 – CCH

MMED 820 – FHCC

MMED 843 – Mount Sinai Hospital

MMED 869 – ALGH

MMED 869 – ALG 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 (cerebrovascular accidents, 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 – FHCC

MMED 847 – CCH

MMED 871 – ALGH

MMED 887 – ACH

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 – FHCC

MMED 856 – Mount Sinai Hospital

MMED 857 – CCH

MMED 858 – Norwalk Hospital

MMED 859 – ACH

MMED 872 – ALGH

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, fiber optic bronchoscopy and thoracentesis.

Physical Medicine and Rehabilitation

MMED 895 – ALGH

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, lymph edema 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.

Rheumatology

MMED 873 – ALGH

MMED 874 - CCH

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 house staff member in providing evaluation and care for patients. Inpatient rounds and office hours are made daily with an attending rheumatologist. Unique aspects of the rotations include osteoporosis detection and therapy, arthroscopic surgery, joint irrigation and muscle biopsy techniques. Formal teaching conferences and complement bedside teaching.

Sophomore Elective Courses

MMED 608 Endocrine-Metabolic Research

This elective is aimed to develop and enhance student's understanding of the pathophysiology of endocrine-metabolic diseases. A wide variety of opportunities exist both in basic and clinical research so the student can pursue specific goals of interest to him/her on an individual basis. Students will be able to 1. Evaluate intermediary metabolism in brain, liver in alcohol-fed rats. 2. Evaluate insulin receptors of hepatocytes. 3. Perform insulin and glucagon radioimmunoassays. 4. Evaluate glucose transporter expression in various tissues, e.g. brain, liver, muscle. This elective will acquaint the student in overall

methodologies used in endocrine-metabolic research. Students will gain an understanding of derangements in carbohydrate in association with alcoholism; glucose transporters gene expression; and, hormone radioimmunoassays.

MMED 614 Research in Clinical Diabetes

This elective addresses health care outcomes of patients with diabetes in relation to evaluation of current and innovative therapies and complications.

MMED 623 Research in Cardiopulmonary Resuscitation

This elective is designed to expose the student to scientific and clinical research techniques and laboratory procedures. By the very nature of the topic covered, exploration of this topic will draw upon information learned in Mammalian Physiology, Pathology, Pharmacology, and ECR. Student will perform treatment-blind neurological assessment of porcine subjects at 24 and 48 hours after experimental procedures completed. Student will learn to perform neurological assessments utilizing pre-determined and accepted behavior criteria. Student will then have opportunity to utilize these skills as part of a clinical research effort with a range of outcome possibilities. In addition, the student's participation will fill a much-needed role in the research project. 1) Expose the student to scientific and clinical research techniques. 2) Present research as a system and organism wide topic not just at the cellular or intracellular level. 3) Teach the student to perform neurological assessments using a variety of fixed criteria. 4) Fulfill a much-needed role in the research protocols. 5) Enable the student to be a part of potentially lifesaving research that "may represent a novel and highly effective form of treatment for resuscitation from ventricular fibrillation".

MMED 627 Research in Cardiovascular Disease

This course is intended to introduce the student to the process of clinical research, including the scientific method, the formulation of hypothesis, data acquisition by use of publication database (i.e. PubMed), statistical analysis, reporting of data for poster or oral presentation at national scientific conferences and ultimately preparation of scientific manuscripts for journal submission. Specifically, the student will participate in the formulation of a Meta-Analysis dealing with the efficacy of statins (HMG-CoA reductase inhibitors) in patients with Coronary Artery Disease and Renal Insufficiency.

MMED 699 Critical Care Medicine: Physiology at the Bedside

This elective is based on structured presentations/discussions of specific critical care topics in a conference area followed by bedside discussion of a critical care topic based on the ICU patient mix. Topics covered will include: 1) Initial Contact with the Critically Ill; 2) Assessment of Gas Exchange; 3) Understanding Respiratory Muscle Physiology and Work of Breathing; 4) Ventilator Management - What to do after Intubation; 5) Body Water Distribution - Assessment and its Clinical Relevance; 6) Acid-Base and Electrolyte Abnormalities - A Simple Approach to a Complex Problem; 7) CPR - Basic Life Support; 8) CPR - Advanced Life Support; 9) Heart Failure - Understanding how the Pump Works and how to Develop a Treatment Plan; 10) Hemodynamic Crises - When Tissues Suffer Diminished Blood Supply (Part I Basics); 11) Hemodynamic Crises - When Tissues Suffer Diminished Blood Supply (Part II Clinical); 12) Putting it all Together.

Faculty and Associated Staff

Donald Aaronson, MD, Professor
 Sasikanth Adigopula, MD, Instructor
 Mario Affinati, MD, Associate Professor, Associate Dean, Graduate Medical Education
 Brenda Affinati, MD, Associate Professor
 Mohammed Ahmed, MD, Associate Professor
 Nazeen Ahmed, MD, Lecturer
 Adil Alavi, MD, Assistant Professor
 Kris Anand, MD, Assistant Professor
 Rohit Arora, MD, Professor
 John Avramidis, MD, Assistant Professor
 Iyad Ayoub, PhD, Research Instructor
 Marla Barkoff, MD, Associate Professor Charles Barsano, MD, PhD Professor
 Martin Beerman, MD, Lecturer
 Jose-Daniel, Benatar, MD, Assistant Professor
 Hope Bilyk, RD, Assistant Professor
 Mark Berk, MD, Assistant Professor
 Charles Berkelhammer, MD, Lecturer
 Jacob Bitran, MD, Professor
 Sydney Brandwein, MD, Professor
 Harold Bregman, MD, Professor
 Laurie Broutman, MD, Assistant Professor
 Susan Broy, MD, Professor
 Paula Butler, MD, Associate Professor
 Preston Cannady, MD, Professor
 Laura Carothers, DO, Assistant Professor
 Sharada Chaitra, MD, Associate Professor
 Melissa Chen, MD, Lecturer
 Jen-Chieh Cheng, MD, Professor
 Serafin Chua, MD, Assistant Professor
 Jan Clarke, MD, MPH, Associate Professor
 Joseph Cleary, MD, Professor
 MaryAnn Clemens, EDD, Assistant Professor
 Charles Cochran, MD, Instructor
 Ahmet Copur, MD, Assistant Professor
 William Cotter, MD, Lecturer
 Anthony Daddono, MD, Lecturer
 Pranavkumar Dalal, MBBS, Assistant Professor
 Krishna Das, MD, Clinical Instructor
 Sandra Dempsey, MD, Assistant Professor

Muhyaldeen Dia, MD, Lecturer
 Merle Diamond, MD, Assistant Professor
 Lawrence Domont, MD, Associate Professor
 James Dunphy, MD, Lecturer
 Hardik Doshi, MD, Instructor
 Fredrick Ellyin, MD, Professor
 Annmarie Errichetti, MD, Lecturer
 Axel Feller, MD, Professor
 Ira Fenton, DO, Instructor
 Marc Fine, MD, Associate Professor
 Jonathon Fine, MD, Lecturer
 Martin Floch, MD, Lecturer
 Gerald Frank, MD, Assistant Professor
 Sandra Frellsen, MD, Lecturer
 Yaakov Friedman, MD, Associate Professor
 Abe Friedman, MD, Lecturer
 Ashok Fulambarker, MD, Professor
 Raul Gazmuri, MD, PhD, Professor
 Janice Gilden, MD, Professor
 Harry Ginsberg, MD, Assistant Professor
 Nancy Glick, MD, Associate Professor
 Eric Gluck, MD, Professor
 Barry Goldberg, MD, Lecturer
 Daniel Goldstein, MD, Instructor
 Kelly Guglielmi, MD, Lecturer
 Walter Guthrie, MD, Lecturer
 Rami Haddad, MD, Assistant Professor
 Muhammad Hamadeh, MD, Lecturer
 Maxwell Harris, MD, Professor
 Farah Hasan, MD, Lecturer
 Suresh Hathiwala, MBBS, Associate Professor
 Ervin Hire, MD, Assistant Professor
 George Hvostic, MD, Instructor
 Bruce Hyman, MD, Lecturer
 Maria Iliescu, MD, Assistant Professor
 Bruce Irwin, MD, Lecturer
 Evyan Jawad, MD, Assistant Professor
 Harvey Kantor, MD, Professor
 Naren Kapadia, MD, Lecturer
 Gary Kaufman, MD, Assistant Professor
 Hymie Kavin, MD, Professor
 Walid Khayr, MD, Professor

Sandeep Kholsa, MBBS, Associate Professor
 Paramjeet Kholsa, MD, Associate Professor
 Stuart Kiken, MD, Associate Professor
 Daniel Kniaz, MD, Associate Professor
 Hemantha Koduri, MD, Assistant Professor
 Paul Koh, MD, Assistant Professor
 Panduranga Koya, MD, Assistant Professor
 Mark Kozloff, MD, Lecturer
 GirijanKumar, MD, Associate Professor
 Miloslava Kyncl, MD, Assistant Professor
 John Kyncl, MD, Assistant Professor
 Parde Lalitha, MD, Instructor
 Kristin Lee, MD, Assistant Professor
 May Lee, MD, Instructor
 Norman Lee, MD, Lecturer
 Jerrold Leikin, MD, Lecturer
 Brian Lipson, MD, Instructor
 David Lubell, MD, Associate Professor
 Ajay Madhani, MD, Assistant Professor
 Edward Magid, MD, Associate Professor
 Dheeray Mahajan, MBBS, Lecturer
 Mani Mahdavian, MD, Assistant Professor
 Kenneth Margules, MD, Assistant Professor
 Frank Maldonado, MD, Professor, Assistant Dean for FHCC
 Sheila Maliekel, MD, Assistant Professor
 Deeba Masood, MD, Assistant Professor
 Nilesh Mehta, MD, Associate Professor
 Ira Melnicoff, DO, Assistant Professor
 Sunita Mohapatra, MD, Associate Professor
 Muhammed Mohiuddin, MD, Assistant Professor
 Janos Molnar, MD, Research Assistant Professor
 Clint Moore, MA, BBC, Instructor
 Paul Morgan, MD, Assistant Professor
 Jeanette Morrison, MD, Associate Professor
 Rashid Nadeem, MBBS, Assistant Professor
 Amin-Ur-Rehman Nadeem, MBBS, Assistant Professor
 Sreedhar Nair, MD, Lecturer
 Madeleine Neems, MD, Lecturer
 Emmanuel Nwaokocha, MD, Assistant Professor
 James O'Connell, MD, Lecturer
 Steven O'Mahoney, MD, Lecturer
 Stuart Oserman, MD, Professor

Jennifer Ota, MD, Assistant Professor
 Joseph Oyama, MD, Lecturer
 Chirag Patel, MD, Lecturer
 Janki Patel, MD, Lecturer
 Parag Patel, MD, Assistant Professor
 Amar Peruri, MD, Instructor
 Vidya Puthenveetil, MD, Assistant Professor
 Peter Puthenveetil, MBBS, Assistant Professor
 Baseer Qazi, MD, Instructor
 Jeejabai Radhakrishnan, MD, Research Assistant Professor
 Abdul Rahimyar, MD, Assistant Professor
 Alfred Rathinam, MD, Instructor
 Mamata Ravipati, MD, Assistant Professor
 Antanas Razma, MD, Lecturer
 Geet Reddy, MD, Lecturer
 Douglas Reifler, MD, Professor and Associate Dean, Student Affairs and Medical Education
 Frederick Renold, MD, Assistant Professor
 Terriane Reynolds, MPH, Instructor and Assistant Dean for Planning
 William Rhoades, DO, Associate Professor and Chair
 Susan Rogers, MD, Lecturer
 Louis Rohr, MD, Lecturer
 David Ronin, MD, Assistant Professor
 Joseph Rosman, MD, Associate Professor
 Brian Rubenstein, MD, Assistant Professor
 Lisa Russell, MD, Assistant Professor
 Nagui Sabri, MD, Associate Professor
 Eugene Saltzberg, MD, Assistant Professor
 Patrick Schuette, MD, Lecturer
 Andres Serrano, MD, Assistant Professor
 Pallavi Shah, MD, Assistant Professor
 Jeffrey Shanes, MD, Associate Professor
 Rita Shapiro, DO, Lecturer
 Edward Sherman, MD, Instructor
 Lori Siegel, MD, Professor
 Dean Silas, MD, Associate Professor
 Marc Sliver, MD, Lecturer
 Sant Singh, MD, Professor
 Earl Smith, MD, Professor
 Wiley Smith, MD, Lecturer
 Stephen Sokalski, DO, Lecturer
 Alexander, Starr, MD, Assistant Professor
 Robert Stein, MD, Lecturer

Arvey Stone, MD, Associate Professor
 Patrick Sullivan, MD, Assistant Professor
 Lee Tai, MD, Lecturer
 Bobby Theckedath, MD, Assistant Professor
 Phoung, MD, Assistant Professor
 Adam Treitman, MD, Lecturer
 Mark Tucci, MD, Lecturer
 Christine Veres-Thorner, MD, Associate Professor
 Phillip, Werner, MD, Professor
 William Werner, MD, Lecturer
 Stephen Winter, MD, Professor
 Daneen Woodward, MD, Lecturer
 John Xanthopoulos, MD, Instructor
 Rong Xu, MD, Instructor
 Edwin Zarling, MD, Professor

DEPARTMENT OF NEUROLOGY

The Department of Neurology is involved in four years of undergraduate medical education. In the first year, during the Medical Neuroscience course, clinical material is discussed in conjunction with the basic science substrates. In the second year, the Department 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 four 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 four-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.

The clerkships begin with a day long orientation and includes an introduction to neuroradiology, neurological disorders review, and a neurologic exam practicum. On the final day, students will take the NBME Clinical Neurology Subject Examination to successfully complete their neurology clerkship.

Students in this clerkship receive their clinical instruction at Advocate Christ Hospital, Advocate Lutheran General Hospital, Advocate Condell Hospital, John H. Stroger, Jr., Hospital of Cook County, Hines Veterans Administration Medical Center, and the Lovell Federal Health Care 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 Elective Courses

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.

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 precepting neurologist those patients "worked up" in both an inpatient and outpatient setting. In addition, the student sees selected consultations that are presented to the precepting 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.

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 precepting neurologist those patients “worked up” in both an inpatient and outpatient setting. In addition, the student sees selected consultations that are presented to the precepting 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.

MNEU 850 Neurology

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.

MNEU 855 Neurology

Offered at the Department of Neurology at ACH has been teaching medical students for the past 20 years. We translate the completion of medical/neurological histories and physicals in a palatable, entertaining and informative manner to our students. The structure of our program is exclusively bedside teaching with impromptu lectures on relevant material. X-ray rounds, brain cutting, and participation in hospital-wide conferences occur routinely. An attending physician is present from 10:00 am until rounds are completed at approximately 5:00-6:00 pm five and one-half days per week. No night call is required for students. Weekend rounds include Saturday, which is a half-day. Students will be on service with residents, including Neurology (PGY2 and 4 levels), as well as Emergency Medicine, Internal Medicine and Family Practice residents. The atmosphere is informal; questions as well as constructive criticism are encouraged.

Faculty and Associated Staff

Sandeep Aggarawal, MD, Lecturer

Neil Allen, MD, Professor

Nils Anderson, MD, Assistant Professor and Chair

Russell Bartt, MD, Lecturer

Hien Dang, MD, Assistant Professor

James Dorman, MD, Lecturer

Robert Egel, MD, Lecturer

Morris Fisher, MD, Lecturer

Sudha Gupta, MD, Lecturer

Catherine Haberland, MD, Professor

Tariq Hassan, MD, Associate Professor
 Robert Hazelrigg, MD, Assistant Professor
 Mary Jost, MD, Lecturer
 Gwendolyn Kartje, MD, Lecturer
 Michael Kelly, MD, Lecturer
 Elizabeth Kessler, MD, Associate Professor
 Jose Medina, MD, Professor
 Timothy Mikesell, MD, Lecturer
 Serge Pierre-Louis, MD, Lecturer
 Rita Shapiro, DO, Associate Professor
 Semyon Shulman, MD, Assistant Professor
 Lafayette Singleton, MD, Assistant Professor
 Hilliard Slavick, MD, Associate Professor
 Eugene Thorner, MD, Assistant Professor
 Jonathan Vogel, MD, Instructor
 Reuben Weisz, MD, Professor
 K. Michael Welch, MB, Professor, President and CEO, RFUMS
 Melvin Wichter, MD, Lecturer

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 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, St. Joseph, Mercy, St. Anthony and ALGH 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 Mount Sinai Hospital, St. Joseph Hospital, Mercy Hospital, St. Anthony Hospital, and ALGH 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 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. Physiological, pharmacological, and surgical methods and treatment options will be discussed and, if possible, demonstrated.

MOBG 840 Maternal - Fetal Medicine

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.

Faculty and Associated Staff

Barbara Alif, MS, Instructor
 Bharathi Bhoopathi, MD, Assistant Professor
 Josef Blankstein, MD, Professor
 Joel Brasch, MD, Assistant Professor
 Paula Cavens, MD, Assistant Professor
 Helen Cejtin, MD, Assistant Professor
 David Czuckerberg, MD, Assistant Professor
 James Dolan, Jr., MD, Lecturer
 Abolhamid Hosseinian, MD, Professor
 Thomas Iannucci, MD, Lecturer
 Theodore Jarrett, MD, Assistant Professor
 Ian Jasenof, MD, Lecturer
 Louis Keith, MD, PhD, Professor
 James Keller, MD, Lecturer and Chair
 Theresa Kepic, MD, Assistant Professor
 Prakash Khatkhate, MD, Assistant Professor
 Richard Kurzel, MD, PhD, Professor
 Joanne Kwak-Kim, MD, Professor
 Edward Lampley, MD, Associate Professor
 Brian Locker, MD, Lecturer
 Randee Lopata, MD, Lecturer
 Harilaos Mantouvalos, MD, PhD, Adjunct Associate Professor
 Ligaya Marasigan, MD, 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, 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, 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, Assistant Professor

Megan Tuynman-Hazra, DO, Assistant Professor
 Brett Vassallo, MD, Lecturer
 Daniel Wu, MD, Assistant Professor

DEPARTMENT OF OPHTHALMOLOGY

The Department of 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.

Junior students taking their surgical clerkship at CCH or Mount Sinai Hospital may take a two-week elective in clinical ophthalmology at CCH. Senior students may take a two-week elective in clinical ophthalmology. Both junior and senior electives are centered in the eye clinic at CCH 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.

Senior Elective Course

MOPH 805 Clinical Ophthalmology

Students will be working with CCH Ophthalmology housestaff under the direction of Drs. Axelrod, Ahuja, 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.

Faculty and Associated Staff

Richard Ahuja, MD, Associate Professor
 Monique Anawis, MD, Instructor
 Alan Axelrod, MD, Professor and Chair
 Norbert Becker, MD, Assistant Professor
 Troy Close, MD, Lecturer
 Philip Dray, MD, Associate Professor
 Joseph Kiernan, MD, Instructor
 Oksana Mensheha, MD, Lecturer

Mildred Olivier, MD, Associate Professor
 Daniel Ritacca, MD, Assistant Professor
 William Stiles, MD, Assistant Professor
 Robert Weiss, MD, Lecturer
 Joan Whelchel, MD, Lecturer

DEPARTMENT OF PATHOLOGY

The Department of Pathology provides instruction in a sophomore-level course and offers a series of elective courses. The required course is an introduction to the “study of disease.” The course is based on, and integrated with preceding and concurrent basic science topics, 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 in three quarters as lectures 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.

Sophomore Required Courses

MPAT 600 A, B, C 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.

Sophomore Elective Courses

MPAT 601 Honors Pathology

This course is offered by invitation to a limited number of students who are enrolled in the M2 pathology course. Invitations are extended to students who are “high achievers” in the first several segments of the regular course and to other students at the option of the course director as availability of preceptors allows. The objectives of this elective are: 1) apply basic principles learned in the sophomore pathology course in evaluating patient specimens submitted to a pathology department, 2) provide more detailed histopathological analytical experience, 3) gain understanding of the work-up of surgical pathology and autopsy specimens, and 4) better understand a pathologist’s role in clinical diagnosis and patient care.

MPAT 605 Molecular Basis of Cancer

In addition to a thorough analysis of cytogenetic and molecular diagnostic markers currently utilized for the clinical identification and monitoring of malignant neoplasia, the course will focus on newer approaches to diagnosis, prophylaxis, therapy, and monitoring of therapeutic efficacy. Molecular pathways with established as well as potential relevance to clinical practice and basic cancer biology will be discussed. The subjects covered are elaborations of topics concomitantly presented during the sophomore pathology course.

MPAT 622 Special Projects in Pathology

Students participate in a research project or other individualized program under the direction of 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.

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.

MPAT 629 Applied Neuropathology

Each session will include a faculty-student discussion based on material of the prior sessions and on outside reading assignments. Also, there will be a series of student discussions of diagnostic case studies emphasizing approaches to neurologic diagnosis. In addition, each student will prepare a report from a series of suggested topics, and the report will be submitted to the entire group. This course will be an in-depth presentation of nervous system disorders with special emphasis on anatomy, pathology and clinical pathological correlation. The topics covered are elaborations of topics previously introduced during the sophomore pathology course for medical students. The course should be of special interest to students planning careers in pathology, neurology, and psychiatry.

Senior Elective Courses

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 medico-legal autopsies. Students may also participate in toxicological studies and "crime lab" activities if they choose.

Faculty and Associated Staff

Elham Abboud, MD, Assistant Professor

Imad Almanaseer, MD, Lecturer and Chair

Seana Aldabagh, MD, Assistant Professor

Saroja Bharati, MD, Professor
 Moira Breen, PhD, Associate Professor
 Antonio Chedid, MD, Professor Emeritus
 Dilipkumar Dharkar, MD, Professor
 Bourke Firfer, MD, Assistant Professor
 Jack Garon, MD, Professor
 Catherine Haberland, MD, Professor
 Terence Harper, MD, Instructor
 Nancy Jones, MD, Professor
 Noreen Kelly, MD, Assistant Professor
 Ning Liu, MD, PhD, Assistant Professor
 Chandrakant Modi, MD, Assistant Professor
 Marc Reyes, MD, Professor
 Osvaldo Rubinstein, MD, Associate Professor
 Arthur Schneider, MD, Professor
 Anjali Shinde, MD, Assistant Professor
 Satinder Singh, MD, Associate Professor
 Kimiko Suzue, MD, PhD, Assistant Professor
 William Thomas, MD, Professor
 Elliot Weisenberg, MD, Associate Professor
 Shan-Ching Ying, MD, Assistant 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.

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.

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 Yacktman Pavilion of ALGH 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 ALGH 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.

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.

MPED 808 Emergency Care

Students will be working with attending physicians and residents in the emergency room at CCH. 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.

MPED 812 Genetics

Students selecting this elective at the ALGH Children's Hospital at CCH 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 mucopoly-saccharide, 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.

MPED 814 Pediatric Hematology/Oncology

This elective, offered at CCH, 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. This elective 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.

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. This elective provides experience at CCH in obtaining an accurate, complete pediatric history, as well as in securing physical examination data.

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 CCH 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.

MPED 820 Adolescent Medicine

This elective 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 Pre-participation 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. Offered at CCH will provide students the opportunity

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.

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.

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.

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.

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. This rotation takes place at ALGH.

MPED 842 Pediatric Critical Care

The ALGH PICU is the nucleus of a certified Level-1 pediatric trauma center, the Midwest Pediatric Brain Tumor Center, and a congenital cardiac surgical program. 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.

MPED 843 Pediatric Nephrology

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. This rotation takes place at ALGH.

MPED 844 Pediatric Cardiology

The major goal of this elective (offered at ACH and ALGH) 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.

MPED 845 Neonatology

This program, a rotation through the NICU at ALGH 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.

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.

MPED 848 Neonatology

This elective is offered at ACH and CCH. On the elective, M4 will participate in care of patients in 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.

MPED 849 Pediatric Neurology

Senior medical students may spend a one-month elective on the pediatric neurology service at ALGH. 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.

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 at ALGH. 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.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area, providing the highest level of critical care in all units. During this rotation, the medical student will follow only inpatient patients. The student will become familiar with common critical care procedures, such as intubation and line placement. The student will develop a working knowledge base, understanding of differential diagnoses, management, and treatment of common conditions involving critically ill newborns/children.

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.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area. During this rotation, the medical student will follow patients, both inpatient and outpatient. The

student will become familiar with various procedures. The student will develop a working knowledge base, understanding of differential diagnoses, management, and treatment plans of the specifics of pulmonary medicine involving children.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area. During this rotation, the medical student will follow patients, both inpatient and outpatient. The student will become familiar with various procedures. The student will develop a working knowledge base, understanding of differential diagnoses, management, and treatment plans of the specifics of Hematology/Oncology involving children.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area. During this rotation, the medical student will follow patients, both inpatient and outpatient. The student will become familiar with various procedures. The student will develop a working knowledge base, understanding of differential diagnoses, management, and treatment plans of the specifics of development involving children.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area. During this rotation, the medical student will follow patients, both inpatient and outpatient. The student will become familiar with various procedures. The student will develop a working knowledge base, understanding of differential diagnoses, management, and treatment plans of the specifics of gastroenterology involving children.

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. This rotation takes place at ACH-Hope Children's Hospital, one of the busiest children's hospital in the Chicagoland area. During this rotation, the medical student will follow patients, both inpatient and outpatient. The student will become familiar with various procedures. The student will develop a working knowledge base,

understanding of differential diagnoses, management, and treatment plans of the specifics of endocrinology involving children.

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.

MPED 863 Outpatient Pediatrics

The elective provides the M4 year student the experience to learn what a practicing pediatrician does in an outpatient setting. The student will participate in outpatient care of children and newborns and gain an appreciation of normal versus abnormal findings. Pediatric literature will supplement the elective for further understanding of the abnormalities encountered. Day-to-day observation and critique of patient care will be provided as well as final evaluation. Feedback from the student will be anticipated at the end of the rotation.

MPED 864 Pediatric Otolaryngology

This is a 2 week clinical elective to expose the medical student to Pediatric Otolaryngology clinically. This elective also serves to augment the medical student's foundation in Pediatric and Surgical medicine. The student will participate with the instructor on a one-on-one basis and experience all clinical activities such as inpatient and outpatient procedures, office visits, case presentations and consultations. Throughout the course, topics in Pediatric Otolaryngology will be assigned and discussed.

Faculty and Associated Staff

Gabriel Aljadeff, MD, Assistant Professor
 Raghbir Benawra, MD, Associate Professor
 Frank Belmonte, DO, Assistant Professor
 Mitchell Blivaiss, MD, Instructor
 Ira DuBrow, MD, Professor
 Susan Echiverri, MD, Assistant Professor
 Esperanza Garcia-Alvarez, MD, Assistant Professor
 Kanika Ghai, MD, Assistant Professor
 Varsha Gharpure, MD, Assistant Professor
 Steven Goldberg, MD, Assistant Professor
 Barry Goldman, MD, 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
 Jay Mayefsky, MD, Professor
 Kenneth Miller, MD, 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
 Larry Roy, MD, Lecturer
 William Rutenberg, MD, Assistant Professor
 Jaye Schreier, MD, Assistant Professor
 Nishant Shah, MD, Assistant Professor
 David Sheftel, MD, Assistant Professor
 David Soglin, MD, Lecturer
 Gopal Srinivasan, MD, Professor
 Hari Srinivasan, MD, Assistant Professor
 Rabi Sulayman, MD, Professor and Chair
 Howard Weiss, MD, Lecturer
 Shou-Yien Wu, MD, Associate Professor

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

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 Course

MRHM 613 Research Elective in Rehabilitation Medicine

This course is 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 3 and 15 hours per week and have an interest in learning all about aspects of the diagnosis and treatment of pain disorders.

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.

EMG, exercise electrocardiography and exercises for cardiac patients, basic psychological testing and administration of tests including the interpretation.

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.

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. Schwab Rehabilitation Hospital. Rehabilitation Institute of Chicago.

MRHM 817 Physical Medicine and Rehabilitation

This elective exposes students to private practice outpatient musculoskeletal/pain medicine. Spinal injections, joint injections and electromyography included. Student will be exposed to the field of PM&R and observe musculoskeletal history and physical exams and observe spinal injection procedures. Student will understand and become proficient at a musculoskeletal history and, especially, a musculoskeletal physical exam.

Faculty and Associated Staff

Vijaya Chigurupati, MD, Instructor
 Matthew Flanagan, MD, Lecturer
 Michelle Gittler, MD, Lecturer
 Mitchell Goldflies, MD, Assistant Professor
 Melitta Gratzer, MD, Assistant Professor
 Norman Harden, MD, Lecturer
 David Hinkamp, MD, Assistant Professor
 Meilute Indreika-Biskis, MD, Lecturer
 Martin Lanoff, MD, Assistant Professor
 Susan Lis, MD, Assistant Professor
 Oleh Paly, MD, Assistant Professor
 Barbara Parke, MD, Lecturer
 Suzan Rayner, MD, Lecturer
 Kaswaram Reddy, MD, Assistant Professor
 Robert Rogers, MD, Lecturer
 Elliot Roth, MD, Lecturer

Ricardo Senno, MD, Assistant Professor
 Uma Shah, MD, Assistant Professor
 Sang Suh, MD, Assistant Professor
 Bharathi Swaminathan, MD, Assistant Professor
 Stephen Weinberg, DPM, Adjunct Instructor
 Gary Yarkony, MD, Professor

DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES

Required Courses

MPSY 601 Clinical Neuroscience

This multidisciplinary course focuses on brain structure and function and their clinical manifestations of disease. This course covers: (1) brain organization strategies for the diagnosis of central nervous system disease, including the mental status and cognitive assessment examinations, psychological testing, and routine (blood count) and specialized (lumbar puncture, magnetic resonance imaging) laboratory testing, normal and abnormal personality; (2) disorders of the CNS encompassing psychopathology. For these disorders, prevalence, pathophysiology, clinical manifestations, diagnosis, treatment and prevention are covered; (3) traditional behavioral science topics such as psychological testing and healthcare delivery.

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. 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 take part in a clerkship honors program in which they participate in specialized research or clinical experiences during this required clerkship.

Sophomore Elective Course

MPSY 699 Evaluating a Patient From a Different Culture Through Cinema

The elective helps students understand how culture facilitates and hinders medical care, and learn the skills which enable them to interview patients from various cultures through the use of film. This course discusses topics from a medical student's perspective and also focuses on cross culture communication patterns and their impact on clinical care.

Senior Elective Courses

MPSY 825 Clinical Elective in Forensic Psychiatry

Student will become familiar with the specialized clinical and medical-legal issues surrounding treatment of patients adjudicated Not Guilty by Reason of Insanity and Unable to Stand Trial.

MPSY 830 Neuropsychiatry Clinical Elective

Students will spend four weeks working closely with attendings at the Lovell Federal Health Care Center, Kiley Developmental Center, and the Behavioral Health Center in Vernon Hills, Illinois. Students will be assigned to the neurobehavioral clinic, neuropsychiatric clinic, women's psychiatric clinic and developmental disability clinic. Students will evaluate patients with Parkinson's disease, head injury, epilepsy and developmental delay.

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.

Faculty and Associated Staff

Yogi Ahluwalia, MD, Associate Professor
 Syed Anwar, MD, Assistant Professor
 Daniel Anzia, MD, Lecturer and Chair
 Nutan Atre-Vaidya, MD, Professor
 John Bair, PhD, Assistant Professor
 David Baron, MD, Associate Professor
 Mariam Barouta-Kharzo, MD, Assistant Professor
 Marc Bear, MD, Lecturer
 Carl Bell, MD, Lecturer
 Zafeer Berki, MD, Assistant Professor
 Jang-June Chen, MD, Assistant Professor
 Vincent Colbert, PhD, Assistant Professor
 Sung Cheon, MD, Assistant Professor
 Amin Daghestani, MD, Professor
 Umee Davae, DO, Assistant Professor
 Bhargavi Devineni, MD, Assistant Professor

Arturo Fogata, MD, Assistant Professor
 David Garfield, MD, Professor
 Mitchell Goodman, PhD, Assistant Professor
 Daniel Hardy, MD, Lecturer
 Tariq Hassan, MD, Associate Professor
 Charles Hillenbrand, MD, Professor
 Julianne Hish, APRN, Instructor
 Syed Hussain, MD, Assistant Professor
 Chowdary Jampala, MBBS, Professor
 Hasina Javed, MD, Assistant Professor
 Patrick Kamm, MD, Assistant Professor
 Mallikarjuna Kanneganti, MD, Assistant Professor
 Faiza Kareemi, MD, Assistant Professor
 Elizabeth Kessler, MD, Associate Professor
 Michael Kuna, MD, Assistant Professor
 Jadwiga Kuszynska, MD, Assistant Professor
 Henry Lahmeyer, MD, Professor
 Phil Lebovitz, MD, Associate Professor
 Marcia Leikin, MD, Assistant Professor
 Dayna Lobraico, MD, Instructor
 John Lovsin, PhD, Assistant Professor
 Lin Lu, MD, PhD, Assistant Professor
 George Lutz, PhD, Assistant Professor
 Thakshakamani Madamala, MD, Assistant Professor
 Lynn Malanfand, MD, Assistant Professor
 Allan Markle, PhD, Adjunct Assistant Professor
 Thomas Martin, PsyD, Assistant Professor
 Bret Moberg, JD, LL.M., Assistant Professor
 Aron Mosnaim, PhD, Professor
 Lori Moss, MD, Associate Professor
 Mary Nash-Powell, MSW, LCSW, Instructor
 Gary Oltmans, PhD, Associate Professor
 Malini Patel, MD, Professor
 Stephen Penepacker, MD, Assistant Professor
 Anthony Peterson, PsyD, Assistant Professor
 Shahnaz Rahman, MD, Assistant Professor
 Pradeep Rattan, MD, Assistant Professor
 Karla Rennhofer, PhD, Assistant Professor
 Ioana Sandu, MD, Assistant Professor
 Balasubramania Sarma, MD, Associate Professor
 John Schaut, PsyD, Assistant Professor
 Michael Seidenberg, MD, Professor

Kavita Shah, MD, Assistant Professor
 Sandra Siegel, RN, Adjunct Assistant Professor
 Frederick Sierles, MD, Professor
 Edwin Simon, MD, Assistant Professor
 Aida Spahic-Mihajlovic, MD, Lecturer
 Laura Sunn, MD, Assistant Professor
 Mirella Susnjar, MD, Assistant Professor
 Shastri Swaminathan, MD, Lecturer
 Michael Taylor, MD, Professor Emeritus
 John Tomkowiak, MD, Associate Professor and Associate Dean for Medical Affairs
 Chandragupta Vedak, MD, Associate Professor
 Amanda Weiss, MD, Assistant Professor
 Eddie Williams, PhD, Assistant Professor
 Jack Yen, MD, MPH, Assistant Professor
 Patricia Zaror, MD, Assistant Professor
 Leslie Zun, MD, 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 Course

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.

Senior Elective Courses

MRAD 801 General Diagnostic Radiology

Students work with faculty at the FHCC to develop skills in interpreting radiographic anatomy, physiology and pathology. Students will learn and understand routine procedures and augment skills in differential diagnosis of radiographic manifestations of common clinical situations. Students attend scheduled supplemental, didactic lectures and interdisciplinary conferences given by faculty. Students may also be assigned independent work and are required to complete a paper with images and bibliography on which they will give an oral presentation by the end of rotation.

MRAD 802 General Diagnostic Radiology

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.

MRAD 806 Introduction to Neuroradiology

This course, a two week specialty rotation, held at ALGH, is an introduction to the clinical problems and imaging modalities involved in neuroradiology, including neuro-interventional techniques.

MRAD 809 General Diagnostic Radiology

This four- week course, held at AIMMC 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.

MRAD 810 Radiation Therapy

This four- week specialty elective is held at ALGH Center for Advanced Care. The faculty are 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.

MRAD 812 Introduction to Interventional Radiology

This two - week specialty rotation at Advocate Good Shepherd Hospital in Barrington, in which students will develop an awareness of the indication of the various interventional procedures, how the procedure will benefit the patient, the risks and complications of the procedure and procedure outcomes. Students will function under the supervision of an interventional radiologist, either shadowing or one-on-one, perform pre and post interventional examinations, assist with procedures, and discuss findings and treatment plans with the supervising interventional radiologist. Students will prepare material for an oral presentation to be given at the end of rotation.

Faculty and Associated Staff

Thomas Anderson, MD, Lecturer
 John Anastos, MD, Lecturer and Chair
 Jonathan W. Berlin, MD, Lecturer
 Winston Casis, MD, Instructor
 John Chang, MD, Assistant Professor
 Yong-Kyu Choe, MD, Assistant Professor
 Mark Conneely, MD, Associate Professor
 Stephen Doundoulakis, MD, Assistant Professor
 Pierre Eilian, MD, Associate Professor
 Yan-Fu Feng, MD, Assistant Professor
 Brent Greenberg, MD, Assistant Professor
 Sabouh Gueyikian, MD, Lecturer
 Kathleen Hanson, MD, Lecturer
 Donald Hebel, MD, Lecturer
 Alan Hecht, MD, Assistant Professor
 Leonard Kaufman, MD, Assistant Professor
 Nam Kim, MD, Associate Professor
 Kevin Kirshenbaum, MD, Lecturer
 Joseph Levy, MD, Associate Professor
 Alexander Michael, MD, Assistant Professor
 Najma Mirza, MD, Assistant Professor
 Gregory Moss, MD, Professor
 Ejaz Rahim, MD, Associate Professor
 Jeffrey Rosengarten, MD, Associate Professor
 Pratiba Sansi, MD, Assistant Professor
 Parkash Talwar, MD, Professor

Kamal Patel, MD. MS, Associate Professor
 Piyush Vyas, MD, Assistant Professor
 Donald Waxler, MD, Associate Professor
 Edwin Willgress, MD, Assistant Professor
 Bong-Hyun Yoon, MD, Associate Professor

DEPARTMENT OF SURGERY

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. 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 scholarly activity in the areas of shock and critical care, surgical nutrition, neurosurgery, and education.

Required Course

MSUR 700 Surgery Clerkship

The Surgical Clerkship Program is an eight-week rotation in one of five affiliated hospitals: Mount Sinai Hospital Medical Center, Centegra Hospital, AIMMC, CCH, ALGH, and Advocate Condell Medical Center under the supervision of Internal Coordinators who are faculty members.

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.

Junior students taking their surgical clerkship at CCH or Mount Sinai Hospital may take a two-week elective in clinical ophthalmology at CCH. Senior students may take a two-week elective in clinical ophthalmology (see Department of Ophthalmology for more information).

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 803 Anesthesiology

Students will follow an attending anesthesiologist during the course of the elective and learn the basis of anesthesia, its purpose, the fundamentals, some basic and clinical pharmacology, physiology, and anatomy. Students also will have some exposure to pain management.

MSUR 804 Anesthesiology

Students will follow an attending anesthesiologist during the course of the elective and learn the basis of anesthesia, its purpose, the fundamentals, some basic and clinical pharmacology, physiology and anatomy.

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.

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 831 Thoracic Surgery

This elective in the subspecialty of Cardio Thoracic Surgery provides senior students an opportunity to serve as an active member of a surgical team intimately involved in the care of the acute patient and outpatient. The clinical experience provides a wide variety of problems for which students are responsible for diagnosis and treatment under the direct supervision of attending physicians. The full teaching program includes: weekly lectures, formal and informal teaching rounds, and Chief Surgical Resident supervision. At the end of surgery, students make rounds with the respective attending surgeons on all pre- and post-operative patients. Students will be an integral part of the service and not

mere observers or visitors. They will participate in discussions of the diagnosis, surgical indications, case selectivity and pre- and post-operative management. They learn the pharmacology of the subspecialty and the management of complications as well. They will be encouraged to take call one night per week, as emergencies and post-operative complications usually occur at night.

MSUR 846 Plastic Surgery Research

The students will work closely with a plastic surgeon to develop a research project. This elective will introduce the student to the principles of clinical research. Emphasis will be placed on giving the student a working knowledge of the conduct of clinical research including gathering and interpreting data and preparing results for presentation.

MSUR 851 Breast Health

This elective teaches students to assess breast health and become expert on breast examination through screening clinics, oncology consultations, mammograms, ultrasounds and breast surgery. Students will learn the subtleties of identifying both pathologic and benign breast lesions through physical examinations and explore where breast health fits into the larger topic of Women's Health.

MSUR 820 Surgical Subinternship

The clerkship is designed to continue surgical training as an extension of the M3 clerkship and is offered at Mount Sinai Hospital Medical Center.

The surgical subinternship 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 852 General Surgery

The student will participate in all aspects of patient care, including pre-op patient evaluation in outpatient setting, planning for surgeries, surgeries, and post-operative follow-up. The student will have the opportunity to learn basic laparoscopic skills in the Surgical Skills Lab on simulators.

MSUR 855 General Surgery

Student will participate as a Sub Intern on an academic general surgery teaching service in which a broad spectrum of surgical diseases are encountered. He/she will have the opportunity to provide pre-operative, intra-operative, and post-operative care for approximately 75 to 80 operative patients per month. He/she will attend teaching rounds. The student will participate in weekly surgical grand rounds, M&M conferences, morning presentations of patient cases. The student will be a regular contributor to the case presentations. The student will be expected to function as a member of the surgical team at a sub-intern level. Student will function under the supervision of the students and attendings; perform examinations on surgical patients; discuss findings and treatment plans with the supervising physician; develop an awareness of the various factors/complexities of the patients' specific conditions that need to be addressed in order to provide optimal patient care.

MSUR 858 Aesthetic Plastic Surgery

The student will be exposed to the full spectrum of General Plastic Surgery in Outpatient and Inpatient services. The spectrum of disease will include both reconstructive and cosmetic. However, there will be an emphasis in cosmetic procedures (surgical and non-surgical). The student will see patients in the Plastic Surgeon's office, and will be involved in diagnostic and therapeutic decisions prior to surgical intervention. The student will also see patients in the Plastic Surgeon's office post-operatively. The office hours will be arranged with the attending physician.

MSUR 824 Trauma and Critical Care Surgery

This is a four-week clinical rotation on an inpatient service at AIMMC. 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 / Advocate 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 -ALGH

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 / ALGH

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 / ALGH

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 / ALGH

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 / ALGH

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.

Sophomore Elective Course

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, Illinois, not to conflict with the academic schedule.

Faculty and Associated Staff

Frank Apantaku, MD, Assistant Professor

Lecia Apantaku, MD, Associate Professor

Kathryn Bass, MD, Lecturer

Richard Caldwell, MD, Lecturer

Vivek Chaudhry, MD, Lecturer

Raymond Firfer, MD, Professor

Allan Fredland, MD, Associate Professor

Mitchell Goldflies, MD, Assistant Professor

Mark Hill, MD, Clinical Professor

Michele Holevar, MD, Professor

Orhan Kaymakcalan, MD, Assistant Professor

Sung-Tao Ko, MD, Professor

Sachin Kukreja, MD, Assistant Professor

Robert Kummerer, MD, Assistant Professor
Hasmukh Patel, MD, Assistant Professor
Jayantibhai Patel, MD, Instructor
Lucio Pavone, MD, Assistant Professor
Prahlad Pyati, MD, Professor
Anthony Rousou, MD, Assistant Professor
Marek Rudnicki, MD, PhD, Lecturer
Iris Seitz, MD, Instructor
Hernando Torres, MD, Professor
John White, MD, Lecturer and Chair
Stephen Wise, MD, Associate Professor
Phillip Zaret, MD, Associate Professor
Michael Zdon, MD, Professor