

2015 -2016 COURSE CATALOG

Introduction

The School of Medicine Student Handbook is a reference for medical and academic health students and others regarding the administrative policies, rules and regulations of Emory University and the Emory University School of Medicine. In addition, the ***Student Handbook*** contains procedural policies for areas such as admissions, academic and professional standards, progress and promotion, financial aid, student organizations, disability insurance, academic and personal counseling, and student health.

It is the responsibility of each student enrolled in the Emory University School of Medicine programs to understand and abide by the regulations and policies within this handbook and within Emory University Publications.

Accreditation Statement

Emory University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, master, education specialist, doctorate and professional degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Emory.

The Emory University School of Medicine MD Program is fully accredited by the Liaison Committee on Medical Education (LCME). Current accreditation standards and additional information is available at www.lcme.org.

DOCTOR OF MEDICINE PROGRAM (MD)

APPLICATION REQUIREMENTS FOR THE MD PROGRAM

Completion of at least three years of a balanced undergraduate education, including at least 90 semester hours or 135 quarter hours in arts and sciences is required. For applicants pursuing undergraduate coursework in the United States or Canada, all 90 hours (or 135 quarter hours) must be completed at a regionally accredited U.S. institution or a similarly accredited institution in Canada (completion of the baccalaureate degree is preferred).

If your undergraduate degree is from a college outside the United States and Canada, you must complete all 32 semester hours of the required science coursework at a regionally accredited U.S. institution or a similarly accredited institution in Canada.

Minimum course requirements:

- 8 semester hours (with lab) in biology
- 8 semester hours (with lab) in general or inorganic chemistry
- 8 semester hours (with lab) in organic chemistry
- 8 semester hours (with lab) in one of the physical sciences
- 6 semester hours of English
- 18 semester hours of humanities and social and/or behavioral sciences
- Demonstration of a high level of scholarship (the means for those accepted: 3.7 GPA and 11 on the MCAT subtests)

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Completion of the Medical College Admission Test (MCAT) no later than September of the year in which application is made. The test must be taken within four years of the enrollment year.

If Emory is designated as one of the medical schools on the applicant's AMCAS application, results of the test will be sent directly to Emory. Applicants should NOT send MCAT test results to Emory.

For the 2015-2016 application cycle, Emory will prescreen for minimum MCAT scores. For applicants submitting an MCAT taken prior to January 2015, Emory will prescreen for a minimum MCAT score of 27 with at least a 7 in each of the three subtests. Applicants with an MCAT score of less than 27 or a subtest score of less than 7 on any of the three MCAT subtests will not receive an invitation to complete an Emory Supplemental Application. For applicants submitting an MCAT taken January 2015 or later, Emory will prescreen for a minimum MCAT score of 500 with at least a 123 in each of the four subtests. Applicants with an MCAT total score of less than 500 or a subtest score of less than 123 on any of the four MCAT subtests will not receive an invitation to complete an Emory Supplemental Application. If an applicant has more than one MCAT score, the latest score will be used to determine eligibility.

Submission of online application through the American Medical College Application Service (AMCAS) at the following web site: www.aamc.org.

Submission of a \$120 application fee (fee amount subject to change) and photograph (the application fee and photograph is submitted electronically with the Emory

Supplemental Application). Fee waivers of the Emory Supplemental Application fee are granted to those applicants for whom AMCAS has waived its application fee.

All materials must be submitted online no later than 11:59pm Eastern Time on December 1 of the application cycle.

Submission of the required letters of recommendation via the AMCAS Letter Service. Applicants may submit one of the following:

- A packet of letters or a composite letter from a Pre-Medical or Pre-Health Committee
- A packet of letters from a Career Center or a Letter Writing Service
- Three letters of recommendation from individuals, two of whom should be individuals familiar with your knowledge in the sciences

Completion of a personal interview before the Admissions Committee on the University campus. Not all applicants are invited for interview.

Exposure to patients in a clinical setting. Examples include volunteering at a local hospital or clinic, clinical volunteer work abroad, or shadowing a physician. The Admissions Committee is most interested in applicants who have face-to-face experience with the patient-doctor relationship.

APPLICATION REQUIREMENTS FOR MD DUAL DEGREE PROGRAMS

For the 2015-2016 application cycle, Emory will prescreen for minimum MCAT scores. For applicants submitting an MCAT taken prior to January 2015, Emory will prescreen for a minimum MCAT score of 27 with at least a 7 in each of the three subtests. Applicants with an MCAT score of less than 27 or a subtest score of less than 7 on any of the three MCAT subtests will not receive an invitation to complete an Emory Supplemental Application. For applicants submitting an MCAT taken January 2015 or later, Emory will prescreen for a minimum MCAT score of 500 with at least a 123 in each of the four subtests. Applicants with an MCAT total score of less than 500 or a subtest score of less than 123 on any of the four MCAT subtests will not receive an invitation to complete an Emory Supplemental Application. If an applicant has more than one MCAT score, the latest score will be used to determine eligibility.

MD/PhD

Verified applicants deemed competitive will be sent instructions to complete the online Emory Supplemental Application.

Those who wish to apply to the MD/PhD program must indicate this on the Emory Supplemental Application. Applicants will be asked to provide detailed information

about their research experiences on the Emory Supplemental Application. All of the same application deadlines apply.

MD/MPH

Those who wish to apply to the MD/MPH program may indicate this on the Emory Supplemental Application. All of the same application deadlines apply. Applicants who are interested in the MPH program are encouraged to also indicate this on their application.

(NOTE: Indication of interest in the MD/MPH program at the time of application to medical school does not formally commit applicants to this program. Medical students have until their third year of medical school to officially decide if they wish to pursue the MPH – even if they did not indicate interest in this program at the time of application.)

MD/MSCR

Students do not formally apply to the MSCR until their third year of medical school. At that time, students apply separately through the Laney Graduate School of Arts and Sciences.

MD/MA in Bioethics

Verified applicants will be sent instructions to complete the online Emory Supplemental Application. All of the same medical school application deadlines apply. Those who wish to apply to the MD/MA program may indicate this on the Emory Supplemental Application. Instructions for submitting a separate application to the Laney Graduate School of Arts and Sciences will be sent to applicants who indicate this interest on their Emory Supplemental Application.

Other Programs for Medical Students

Emory medical students may be accepted to graduate programs at Emory such as the [Juris Master \(JM\) program at Emory Law School](#) and the [MD/MBA program at the Goizueta Business School](#). Applicants must follow all AAMC procedures to apply through AMCAS first. Verified applicants will be sent instructions to complete the online Supplemental Application, and all of the same medical school application deadlines apply. Accepted students who wish to apply to the MD/JM or MD/MBA program may do so by submitting a **separate application** to Emory Law School or Emory's Goizueta Business School **after** acceptance to medical school.

ADMISSION PROCEDURE

Admissions Committee

The Admissions Committee will meet monthly during the interview season (October - February) and will select applicants for acceptance. Applicants will be notified of their acceptance via the US Postal Service. Applicants will NOT be notified by email or telephone. Emory School of Medicine operates on a rolling admission cycle, so applicants who are not selected for admission will remain in consideration for all subsequent Admissions Committee meetings. No completed applicant is rejected during the interview season. At the close of the interview season, all interviewed applicants will be information of their status (accepted, rejected or alternate).

International Students

International applicants are welcome to apply to Emory School of Medicine. The admissions process is the same for domestic and international students. All completed applications will receive a full review of their file, regardless of citizenship or immigration status.

No TOEFL scores are required; however, all applicants must take the Medical College Admissions Test (MCAT).

If your undergraduate degree is from a college outside the United States and Canada, you must complete all 32 semester hours of the required science coursework at a regionally accredited U.S. institution or an accredited institution in Canada.

In recent years, 10-15 international students have been accept to Emory's MD program. There are no spots specifically reserved for international or domestic students.

At the present time, Emory University School of Medicine does not offer need-based aid for international students. All international students must be prepared to document funding resources to pay their tuition and living expenses for all four years of medical school. Tuition and expenses are estimated at over \$80,000 per year

Accepted Applicants

Accepted applicants to the first-year class are required to sign a Statement within two weeks of the receipt of their acceptance letter. The deadline for students to make a final decision for medical school is April 30. No admission deposit is required.

All accepted students are expected to maintain their academic performance, personal characteristics, and behavior. Documented evidence to the contrary may result in

revocation of acceptance. This includes, but is not limited to, all Emory University School of Medicine Policies and Regulations for Professionalism, Conduct and Academic Integrity. A complete listing of policies and regulations can be found online at: <http://www.med.emory.edu/handbook/>.

Emory University School of Medicine participates in the AAMC-sponsored Criminal Background Check (CBC) program. Beginning January 1 of the matriculation year, all accepted students will be asked to authorize a third party (CertiPhi, Inc.) to perform this CBC and to release all findings to Emory University School of Medicine. Failure to authorize this CBC and/or release the findings to Emory may result in revocation of acceptance.

All applicants are expected to follow the "AAMC Recommendations for Medical School Applicants."

All students are required to maintain health insurance coverage that meets Emory University minimum coverage requirements throughout the entire period of enrollment at Emory University. Emory will automatically enroll accepted students in the Emory Student Health Insurance Plan. If the student has health insurance coverage with another carrier that meets Emory University minimum coverage requirements, the Emory Student Health Insurance Plan can be waived.

All incoming students will be required to complete and pass health and safety training courses prior to M1 Orientation. Courses will be available online in the summer prior to M1 Orientation.

Attendance and full participation in all orientation sessions for incoming students will be required. No exceptions will be granted and all acceptances are contingent upon attendance at ALL orientation sessions.

Technical Standards

For successful completion of the course of study for the Doctor of Medicine degree at Emory University, students must have certain technical and intellectual skills. In order to maintain an acceptable level of performance, the student must:

Be able to develop the ability to obtain a medical history and perform a thorough physical examination. These activities require that the student:

Communicate effectively with the patient and the patient's family in order to obtain an adequate medical history.

Review records that relate to the patient's medical history and be able to develop a medical record for the current episode that will be useful to others who care for the patient.

Perform the essential functions of the medical school curriculum such as performing a thorough physical examination by using the appropriate instruments and manual techniques required.

Be able to participate in and demonstrate an understanding of all phases of the educational program, including lectures, laboratory activities, teaching conferences, hospital rounds, and clinical duties.

Be able to demonstrate characteristics that suggest that the student has the ability to function in complex social, professional, and personal roles.

Be able to function in delicate interpersonal relationships and manifest honesty, reliability, genuineness, warmth, and empathy.

Be able to control impulses and maintain good judgment even under physically and emotionally exhausting conditions.

**Developed in compliance with the Rehabilitation Act of 1973.*

Enrollment Policy

Each year, Emory University School of Medicine enrolls 138 new students into the first-year class. To be enrolled in the program, students must have submitted an application, completed an interview and been selected for admission to the program by the Admissions Committee. Students must also have completed all prerequisites and obtained an undergraduate degree prior to enrollment in the program.

DOCTOR OF MEDICINE CURRICULUM

After nearly 3 years of planning involving hundreds of medical faculty and students, and key members of Emory's schools of nursing, public health, and graduate programs in the arts and sciences, Emory School of Medicine implemented an innovative medical curriculum in August 2007. This exciting program was carefully designed after extensive consultation with other renowned medical institutions and educational experts in the United States and the United Kingdom. Emory's curriculum reflects the extraordinary advances taking place in biomedical science; meets the needs of an

ever-changing local and global healthcare environment; takes advantage of the unique educational resources in Atlanta; and respects the intellectually-gifted and highly-motivated students who choose to come to Emory.

Curriculum Philosophy and Design

The specific structure of the curriculum was designed by the faculty and student leadership in keeping with the following desired characteristics of Emory School of Medicine graduates:

Superb clinicians who demonstrate the highest degree of professionalism; outstanding clinical competency and problem solving skills; and the ability to understand and utilize basic science in the clinical setting

Curious and creative thinkers with the ability to utilize available resources to answer clinical and research questions and to assess information critically

Lifelong adult learners with the ability to take ownership of their own present and future educational needs

Physicians who continue to be passionate about medicine and about making a difference; who are involved in and appreciate efforts to improve the health of local and global communities; who see medicine as profession that seeks to address issues of social justice

Physicians committed to understanding the sociological, psychological, and economic issues of the patient, the family, and the community

Future leaders eager and able to play leadership roles in their chosen field of medicine or biomedical science, and in their community

The academic community articulated the characteristics of a new curriculum that would produce such graduates. Our curriculum:

Is competency-based, through the development and assessment of core competencies as determined by the faculty

Provides for integration of basic and clinical science--both horizontally (across disciplines) and vertically (across years)--throughout all four years

Provides an early introduction of clinical medicine and an increase in clinical experience in the ambulatory setting, including a sustained experience in a continuity clinic

Increases flexibility throughout the four years of the curriculum

Provides an “in-depth” discovery phase that will enhance creativity, curiosity and the development of leadership skills. Inherent in this opportunity is the potential of a tuition-free fifth year of study, and encouragement of year-long experiences at Emory (e.g. lab-based research, MPH at the Rollins School of Public Health) or at other institutions (e.g. CDC, NIH).

Reduces lecture time and rely less on rote memorization with simultaneous creation of more opportunities for active learning

Provides better methods of academic and clinical assessment closely linked to the appropriate competencies

Increases student mentoring throughout the four years of medical school and increases exposure to master clinicians at all Emory clinical sites

Increases use of clinical simulation and standardized patients for skills training and assessment

The structure of the curriculum provides for:

Earlier completion of the “basic science” phase

Completion of the core clinical experiences over the following one year (allowing students hands-on exposure to specialty fields of medicine, such as neurosurgery, urology, and ophthalmology earlier than the conventional “fourth year”)

Addition of a required period of discovery and the addition of a “capstone” experience to the end of the fourth year of medical school which would prepare students for entrance into House Staff training programs

In order to achieve the desired outcomes, the new curriculum is divided into four phases:

- Phase 1: *Foundations of Medicine*. This phase provides students with the core knowledge of basic and clinical sciences.
- Phase 2: *Applications of Medical Sciences*. This phase provides students with core knowledge of the basic clinical medical specialties.
- Phase 3: *Discovery*. This phase is a structured time for students to concentrate in a specific area of interest, such as basic or clinical research, public health, community development, medical ethics, or other areas.

- Phase 4: *Translation of Medical Sciences*. This phase prepares the student for the transition to physician. Rotations as a Sub-Intern; advanced clinical work in an ICU; experience in the Emergency Department; and a final Capstone Course prior to graduation are required.

Foundations

The Foundations courses are co-taught by basic scientists and clinicians. There are no department-based courses; medical professionalism, ethics, history of medicine, and principles of public health and biostatistics are taught in an integrated manner via clinical cases presented as part of the Foundations curriculum and during the longitudinal, out-patient experience. Building on its success in our previous curriculum, students spend one of their very first weeks in medical school in a popular “Week on the Wards” rotation. This allows new students of medicine an opportunity to both “try on” their new role as a physician, and for the last time, observe the patient and physician interaction from “outside” the system of healthcare. Students undergo clinical instruction in the art of the history, patient-doctor communication, and physical examination skills during those early weeks and in October enter a longitudinal Primary Care clinic in Family Medicine, Internal Medicine, or Pediatrics. The students spend one afternoon every other week in their Primary Care Clinic for the next 12 months, under the guidance of a primary care physician.

The Foundations Phase begins with a four-month section on the “Healthy Human,” a section designed around the human life cycle and emphasizing healthy human activities: Neural Function (including cognition), Exercise, and Nutrition. Basic science concepts including cell biology, genetics, biochemistry, physiology, embryology, histology, reproduction, and human development are covered during the Healthy Human section. By beginning with the “Healthy Human” approach, the curriculum emphasizes: 1) the important role that behavior plays in health and disease; 2) that the approach to the patient must include consideration of the community, environment, family, and the “whole” of the person; and 3) the importance of healthy human activities, such as exercise, nutrition, procreation, and cognition/creativity as foundational to human well-being.

The Healthy Human is followed by Prologue II, a section designed to prepare students for the Human Disease Section. Prologue II introduces the principles of microbiology, pathology, immunology, and pharmacology. The Human Disease section consists of organ block sections. Human Anatomy, including cadaveric dissection, is completed during the first five months of the Human Disease Section, and where possible, will correlate with the organ system being taught. The organ system blocks begin each week with a simulated or real case presentation. Approximately two hours of class and

two hours of small group each morning are augmented with longer small groups/skills sessions on Tuesday afternoons; the primary care clinic will continue one half day weekly. Normal human function is revisited during the Human Disease section as applicable. Clinical cases drive the week's learning objectives, including social topics such as cultural competency, addiction, homelessness, etc.

Degree Requirements for MD Degree Program

Foundation Phase

- MD 505 Foundation – Prologue I Healthy Human – 2 weeks/credits**
Module Directors: J. William Eley, MD; Gordon Churchward, PhD
Required, S/U
- MD 508 Foundation – Human Development – 1 week/credit**
Module Directors: Nancy Fajman, MD; Rickey Gillespie, MD
Required, S/U
- MD 510 Foundation – Embryos, Tissues, and Cells – 3 weeks/credits**
Module Directors: Winfield Sale, PhD; Victor Faundez, MD
Required, S/U
- MD 515 Foundation – Neural Function – 2 weeks/credits**
Module Director: Douglas Falls, MD
Required, S/U
- MD 520 Foundation – Exercise and Movement – 2 weeks/credits**
Module Director: Wylie Nichols, PhD; Laurence Sperling, MD
Required, S/U
- MD 525 Foundation – Nutrition and Metabolism – 2 weeks/credits**
Module Director: David Pallas, PhD; Thomas Ziegler, MD
Required, S/U
- MD 530 Foundation – Endocrine Control – 1 week/credit**
Module Directors: Victor Faundez, MD; Eric Felner, MD
Required, S/U
- MD 535 Foundation – Genetics and Evolution – 2 weeks/credits**
Module Director: Kathryn Garber, MD
Required, S/U
- MD 540 Foundation – Aging and Dying – 1 week/credit**
Module Director: Manuel Eskildsen, MD
Required, S/U

- MD 545** **Foundation – Prologue II Human Disease** – 4 weeks/credits
Module Director: Gordon Churchward, PhD
Required, S/U
- MD 548** **Foundation – Becoming a Doctor** – 3 credits
Module Director: Lisa Bernstein, MD
Required, S/U
- MD 550** **Foundation – Skin, Bones, Muscles & Joints** – 4 weeks/credits
Module Directors: Karen Atkinson, MD; Mary Spraker, MD
Required, S/U
- MD 555** **Foundation – Pulmonary** – 5 weeks/credits
Module Director: David Schulman, MD
Required, S/U
- MD 560** **Foundation – Cardiovascular** – 5 weeks/credits
Module Directors: Joel Felner, MD; Dimitri Cassimatis, MD
Required, S/U
- MD 565** **Foundation – Gastrointestinal** – 4 weeks/credits
Module Director: Tanvi Dhere, MD
Required, S/U
- MD 570** **Foundation – Renal and Genitourinary** – 4 weeks/credits
Module Directors: James Bailey, MD; Douglas Eaton, MD
Required, S/U
- MD 578** **Foundation – Becoming a Doctor II** – 3 credits
Module Director: Lisa Bernstein, MD
Required, S/U
- MD 600** **Foundation – Endocrine/Reproductive Health** – 5 wks/credits
Module Directors: Eric Felner, MD; Mary Dolan, MD
Required, S/U
- MD 605** **Foundation – Hematology** – 3 weeks/credits
Module Director: Louis Rapkin, MD
Required, S/U
- MD 610** **Foundation – Neuroscience I** – 4 weeks/credits
Module Director: Jaffar Khan, MD
Required, S/U
- MD 615** **Foundation – Neuroscience II** – 5 weeks/credits
Module Directors: Rickey Gillespie, MD; Jaffar Kahn, MD
Required, S/U

- MD 620** **Foundation – Summation Human Disease** – 2 weeks/credits
Module Director: Wendy Armstrong, MD
Required, S/U
- MD 625** **Foundation – Elective** – 2 credits
Module Director: Gordon Churchward, MD
Required, S/U
- MD 630** **Foundation – Review Human Disease** – 3 weeks/credits
Module Director: Gordon Churchward, MD
Required, S/U
- MD 635** **Foundation – Review and Self Study** – 4 weeks/credits
Required, S/U
- MD 638** **Foundation – Becoming a Doctor III** – 3 credits
Module Director: Lisa Bernstein
Required, S/U

Foundations Phase – 79 credit hours

The Foundations Phase and USMLE Step 1 are completed within 19 months, allowing students to begin the Applications Phase during the middle of Year 2.

Applications Phase

The Applications Phase includes “clerkship” training in the core clinical areas of medicine, including Internal Medicine, Surgery, Obstetrics/Gynecology, Pediatrics, Psychiatry and Neurology. During clinical rotations, students operate as full members of a medical care team. While core clinical knowledge is learned, patient-directed learning is emphasized. This patient-directed learning is the best preparation for the engaged life of a practicing, inquisitive physician/learner.

- MD 705** **Applications – Adult Primary Care** – 9 credits
Clerkship Directors: Eva Rimler, MD; Emily Herndon, MD
Required, Letter Grade
- MD 706** **Applications – Pediatric Primary Care** – 3 credits
Clerkship Director: Eric Felner, MD
Required, Letter Grade
- MD 710** **Applications – Internal Medicine** – 8 credits
Clerkship Directors: Richard Pittman, MD; Karen Law, MD
Required, Letter Grade

- MD 715 Applications – Neurology** – 4 credits
Clerkship Director: Jaffar Khan, MD
Required, Letter Grade
- MD 720 Applications – Obstetrics/Gynecology** – 6 credits
Clerkship Director: Jennifer Goedken, MD
Required, Letter Grade
- MD 725 Applications – Pediatrics** – 4 credits
Clerkship Director: Eric Felner, MD
Required, Letter Grade
- MD 730 Applications – Psychiatry** – 6 credits
Clerkship Director: Jeffrey Rakofsky, MD
Required, Letter Grade
- MD 735 Applications – Surgery** – 7 credits
Clerkship Director: Barbara Pettit, MD
Required, Letter Grade
- MD 740 Applications – Anesthesiology** – 1 credit
Clerkship Director: Billynda McAdoo, MD
Required, Letter Grade
- MD 745 Applications – Radiology** – 2 credits
Clerkship Director: Stefan Tigges, MD
Required, Letter Grade
- MD 748 Applications – Becoming a Doctor IV** – 2 credits
Clerkship Director: Lisa Bernstein, MD
Required, S/U

Applications Phase – 52 credit hours

Students complete the Applications Phase in the middle of Year 3, at which time an individual student may move directly into five months of Discovery, or may choose to take clinical electives in sub-specialty fields. This will afford students the opportunity to choose their research area within their expected field of residency, if desired.

Discovery Phase

- MD 800 Discovery Phase** – 20 credits
Director – Maureen Powers, PhD
Required*, Letter Grade

The mandatory Discovery Phase may be spent in any field, but must be research related to medicine, closely mentored, and result in a final product approved by the

mentor. The time period for this phase may be extended to 9 months by using elective months available during the Translations Phase. Alternatively, students may choose to spend an extra year in research, either at Emory (tuition-free) or at another institution (e.g. CDC or NIH). A year or more of study may allow a student to obtain a Masters of Medical Science degree.

This phase is a structured time for students to conduct a hypothesis-driven research project under the direction of a faculty member. While the Discovery project must be a scientific inquiry based in Medicine, students are able combine their interests in other areas, such as creative writing, public health, community development, education, or health policy into their project. Many students are also able to include an international experience in their Discovery project. This is a critical opportunity for students to renew their creative energies and explore a new facet of medicine under the tutelage of an Emory faculty member.

During Discovery, medical students will work virtually full time on their projects with no other commitments except occasional seminars or workshops relevant to their work. With only one required course, SoCRATES, held during this time (a special course addressing topics relevant to Discovery including reading the literature, writing and publishing papers, research ethics, and the IRB), students are also able to spend time in clinic to maintain and develop their clinical skills.

** Students taking an extra year to obtain a dual degree are granted an exemption from this five month phase.*

Discovery Phase – 20 credit hours

Translation Phase

The Translation Phase prepares each individual for the transition to physician. Required senior rotations include Emergency Medicine, Critical Care (ICU), and a sub-internship in Surgery, Medicine or Pediatrics; there is sufficient time for electives or away-rotations during this year. The Translation Phase concludes with a required month-long Capstone course that offers carefully designed lectures, workshops, panel discussions, and exercises which equip the soon-to-be-graduate with the practical skills and information that will be crucial to their success as residents.

MD 905 Translation – Senior Medicine Sub-Internship – 4 credits
Course Director: Michael Lubin, MD
Required*, Letter Grade

MD 906 Translation – Senior Surgery Sub-Internship – 4 credits
Course Director: Barbara Pettit, MD
Required*, Letter Grade

MD 907 Translation – Senior Pediatrics Sub-Internship – 4 credits
Course Director: Eric Felner, MD
Required*, Letter Grade

** Students are required to select and complete one of the sub-internships from this list.*

MD 910 Translation – Critical Care – 4 credits
Course Director: Eric Honig, MD
Required, Letter Grade

MD 915 Translation – Emergency Medicine – 4 credits
Course Director: Douglas Ander, MD
Required, Letter Grade

MD 920 Translation – Elective (3 required)* – 4 credits each
Course Directors: Various
Required, S/U

** Students are required to take three electives for a total of 12 credit hours. There are over 100 elective course offerings. If a student has an interest in an area where there is no elective offering, they can create a unique experience with a faculty preceptor. This experience requires the advance approval of the Associate Dean of Clinical Education.*

MD 940 Capstone – 4 credits
Course Directors: Sheryl Heron, MD; Jason Liebrecht, MD
Required, S/U

Translation Phase – 28 credit hours

Degree Requirements for MD Dual Degree Programs

MD/PhD

In addition to all of the requirements for the PhD degree, students who are enrolled in the MD/PhD program at Emory University School of Medicine must meet all of the requirements for the MD program, with the following minimum course requirements:

Applications Phase – 11 months

8 weeks Ambulatory Care

8 weeks Medicine (preceded by one additional ungraded month)

8 weeks Surgery (includes 1 week of Anesthesiology)

4 weeks Pediatrics

4 weeks Neurology

6 weeks Obstetrics/Gynecology

6 weeks Psychiatry

Radiology intertwined with Applications clerkships (2 credit hours)

Becoming a Doctor IV taught during small group meetings (2 credit hours)

Applications Phase for MD/PhD – 48 credit hours

Translation Phase – 5 months

4 weeks Senior Medicine Sub-Internship, Senior Pediatrics Sub-Internship, or
Senior Surgery Sub-Internship

4 weeks Critical Care

8 weeks electives (2 electives, 4 weeks each)

4 weeks Capstone

Translation Phase – 20 credit hours

Students who intend to enter highly competitive residency programs (ex. Neurology, Neurosurgery, Radiation Oncology) must plan for away rotations and an early re-entry to coincide with the start of the September rotation.

Upon return from the graduate program, and during the final year of medical school, MD/PhD students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. MD/PhD students will be required to participate in the 4-week Capstone course, including Research Day, to present their research project findings.

MD/PhD students are required to be enrolled each semester into the MD/PhD Clinical Research Conference. In addition, MD/PhD students are strongly encouraged to volunteer at clinical sites during their Graduate School years, as they are able, in order to continue to maintain and develop their clinical skills. In the final year as a PhD student, prior to re-entry to medical school, all students must take the MD/PhD Clinical Refresher course which prepares them to begin clinical clerkships.

MD/PhD students who meet the requirements for PhD degree will be exempt from completing the Discovery Phase with the School of Medicine in order to receive the MD degree.

MD/Oral & Maxillofacial Surgery Program (MD/OMS)

In addition to all of the requirements for the Oral & Maxillofacial Graduate Medical Education Program, students who are enrolled in the special MD/OMS Program at Emory University must complete the following requirements in order to receive the MD degree:

Foundations of Clinical Medicine – 12 months

All Human Disease lectures, small group activities and clinical training activities

All Human Disease exams and assessments

All Anatomy dissections and exams

Foundations Phase – 63 credit hours

Clinical Rotations of the Applications and Translations Phases – 12 months

8 weeks – Surgery (7 weeks) & Anesthesiology (1 week)

8 weeks – Medicine

4 weeks – Pediatrics

4 weeks – Obstetrics & Gynecology

4 weeks – Psychiatry

8 weeks – Ambulatory Care (Outpatient Care)

4 weeks – Neurology

4 weeks – Senior Medicine Sub-Internship

4 weeks – Critical Care Medicine

Radiology intertwined with Applications clerkships (2 credit hours)

Becoming a Doctor IV taught during small group meetings (2 credit hours)

Applications and Translations Phases – 52 credit hours

These requirements must be completed within 26 months and to the satisfaction of the Executive Associate Dean of Medical Education and Student Affairs, in order to receive the MD degree.

MD/OMS students are *exempt* from these regular MD requirements:

Healthy Human lectures and small group activities

Outpatient Clinical Experience (OPEX)

Discovery Phase

Emergency Medicine Course

Senior Electives

Capstone Course

MD/MPH

All students enrolled in the MD/MPH program at Emory University School of Medicine must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MPH degree as set by the Rollins School of Public Health at Emory University.

Students who meet the requirements for MPH program will be exempt from the Discovery Phase with the School of Medicine in order to receive the MD degree.

Upon return from the Rollins School of Public Health, and during the final year of medical school, MD/MPH students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. All MD/MPH students are required to participate in Research Day for their graduating class and present their MPH degree program thesis.

MD/MSCR

All MD students who participate in the MSCR program at Emory University must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MSCR degree as set by the Atlanta Clinical & Translational Science Institute and the Director of the MSCR Program.

Students who meet the requirements for MSCR degree will be exempt from the Discovery Phase with the School of Medicine in order to receive the MD degree.

Upon return from the MSCR year, and during the final year of medical school, MD/MSCR students are required to complete 5 additional research electives to fulfill the requirements for the MSCR degree. All MD/MSCR students are required to participate in Research Day for their graduating class and present their MSCR project findings.

MD/MA in Bioethics

All MD students enrolled in the MA in Bioethics program at Emory University School of Medicine must meet all of the regular requirements for the MD program, in addition to all of the requirements for the MA in Bioethics degree as set by the Laney Graduate School of Arts and Sciences and the Director for the MA in Bioethics Program at Emory University.

Students who meet the requirements for MA in Bioethics degree will be exempt the Discovery Phase with the School of Medicine in order to receive the MD degree.

Upon return from the Laney Graduate School of Arts and Sciences, and during the final year of medical school, MD/MA students may be required to complete additional elective rotations, as determined by the Associate Dean of Clinical Education. All MD/MA students are required to participate in Research Day for their graduating class and present their MA degree program thesis.

Other Dual Degree Programs

MD Students who wish to pursue other degrees at Emory University or other institutions must meet with the Dean of Medical Education to determine an academic plan for the remainder of the MD requirements prior to matriculation in any other degree program or at any other institution.

United States Medical Licensing Examination (USMLE) Requirements for Medical Students

The USMLE is an examination series with four complementary steps, the first three of which are graduation requirements for Emory University School of Medicine. Students must successfully pass USMLE Step 1, USMLE Step 2 Clinical Knowledge (CK), and USMLE Step 2 Clinical Skills (CS) in order to graduate from Emory University School of Medicine.

USMLE Step 1

In addition to successful performance during the Foundations Phase, students must also earn a passing score, as set by the National Board of Medical Examiners (NBME) prior to receiving promotion to the Applications Phase of the Emory University School of Medicine curriculum.

USMLE Step 1 must be taken by February 1st of the second year of medical school. Prior to taking Step 1, all academic requirements of the foundations Phase, including any necessary remediation, must have been completed by the preceding December 20th. For students who do not meet these deadlines, the School cannot guarantee Applications, Discovery, and Translation Phase schedules that will permit the student to graduate at the expected time. Any delay in taking Step 1 must be approved in writing by the Executive Associate Dean for Medical Education and Student Affairs or his/her designee.

USMLE Step 2 Clinical Knowledge (CK)

Students are encouraged to take Step 2 CK as soon as feasible after completing the Applications Phase. At the latest however, students must take Step 2 CK by January 31st of their senior year. Passing Step 2 CK is a requirement for graduation.

USMLE Step 2 Clinical Skills (CS)

Students must take Step 2 CS by October 31st of the senior year. Students must schedule their exam date by the preceding March 31st in order to ensure an exam date by the October 31st deadline. Passing Step 2 CS is a requirement for graduation.

STANDARDS OF PROGRESS

Assessment, Evaluation, and Grading

Assessments are measurements of student performance conducted using psychometrically appropriate instruments such as written exams or observational checklists. Evaluations are comprehensive summaries of student performance measured against a performance standard. Grades are assigned based on data collected from both assessments and summative evaluations.

A wide variety of assessment types are used to measure students' academic and professional performance in relation to the Emory University School of Medicine Student Physician Activities (SPAs) and are incorporated into grades for courses and clerkships. In addition to written exams and academic papers, instructor observational assessments are often used during small group work, during patient care on clerkships, for elective courses, and in research labs. Objective Structured Clinical Exams (OSCEs) are a regular and vital element of student assessment.

Grading Scales

A-F

The letter grades "A" through "F" indicate the quality of a student's performance as measured by various assessment instruments and processes: modifiers of 'plus' or 'minus' with letter grades are also used. Letter grades are derived from a comprehensive, summative evaluation of a student's achievement, both academically and professionally. Grades are assigned based on published criteria.

"A" indicates exceptional performance

"B" indicates good performance with no identified weaknesses

"C" indicates acceptable performance with improvement needed

"D" indicates unacceptable performance on at least one criterion and no academic credit is awarded

"F" indicates unacceptable performance on multiple criteria and no academic credit is awarded

A student cannot be promoted to the next phase of the curriculum with a grade of "D" or "F" on their transcript. Any student who receives a "D" or "F" will, at a minimum, have to repeat the clerkship, and the student will be susceptible to additional actions such as probation or dismissal, as determined by the Progress and Promotions Committee.

S/U

"S" indicates satisfactory work; Pass

"U" indicates unsatisfactory work and carries no academic credit; Fail

A grade of "U" carries no academic credit. A student cannot be promoted to the next phase of the curriculum with a grade of "U" on their transcript. Any student who receives a "U" will, at a minimum, have to repeat the course, and will be susceptible to additional actions such as probation or dismissal, as determined by the Progress and Promotions Committee.

IP and I

"IP" indicates 'in-progress' course work. Final transcripts cannot carry grades of "IP."

"I" indicates incomplete course work.

The grade of "I" will be assigned to students who have been unable to complete the requirements of the course/clerkship due to absences approved by the dean's office. The grade of "I" is appropriate only when enough work has been completed at an acceptable level of performance such that the student can complete the remaining work without repeating the entire course/clerkship.

If a student receives a grade of "I," the remaining work must be completed within a reasonable time, as determined by Associate Dean for Clinical Education, or the grade of "I" will automatically convert to an "F." The grade of "I" cannot be assigned for unsatisfactory work. The grade of "I" is to be viewed as a non-prejudicial entry on the student's record.

W

"W" indicates withdrawal from course or clerkship without penalty

"WF" indicates withdrawal failing

"WU" indicates unsatisfactory withdrawal

Grading in the Foundations Phase

In the Foundations Phase of the curriculum, grades "S" or "U" are assigned to students

for each module. When appropriate, students may also be assigned the grades of "I," "IP," "W," "WF," or "WU."

Students may not progress to the Application Phase of the curriculum without receiving a final grade of "S" in all Foundations courses. Although Anatomy is not a separately graded course, students must reach a satisfactory standard of performance in the portion of each 'end of module exam' devoted to Anatomy. In addition, students must reach a satisfactory standard of overall performance in Anatomy when the initial scores for these portions of each exam, prior to remediation, are combined.

Grading in the Application, Discovery, and Translation Phases

In the Application, Discovery, and required clerkship portion of the Translation Phases of the curriculum, grades "A+" through "F" are assigned to students. For electives taken during in the Translation Phase, grades of "S" or "U" are assigned. When appropriate, students may also be assigned the grades of "I," "IP," "W," "WF," or "WU."

If a student fails any aspect of a clerkship that is required to pass the clerkship, the student will receive a failing grade ("D" or "F") for the clerkship and be required to repeat the clerkship in its entirety. The student will be re-enrolled in the clerkship and a second grade will be issued after repetition of the clerkship; however, the "D" or "F" grade earned after completing the clerkship for the first time will remain on the student's official transcript.

Students must successfully complete all Applications clerkships before proceeding to the next phases of the curriculum.

Completion of Clerkship Requirements

All clerkship requirements must be completed by 5pm on the final day of the rotation, including but not limited to patient logs in OASIS and direct observation forms. Students who fail to complete clerkship requirements on time will be subjected to penalties outlined by the clerkship directors and may result in a grade deduction or a failing grade for the clerkship.

Grade Appeals

Students are encouraged to discuss evaluations of them and their final grades with the module, course, clerkship, or elective director. Although grades are assigned as an accurate and fair representation of a student's work, students have the right to appeal a grade and to receive an independent review of the grading criteria and their performance.

If a student wishes to appeal a final grade, this should be presented in writing to the Executive Associate Dean of Medical Education and Student Affairs **within 30 days** of receiving the grade. The appeal may be based on the process that led to the grade and/or questions of factual content used in the evaluation process. The Executive Associate Dean for Medical Education and Student Affairs or his/her designee will then review the basis for the appeal of the grade.

Upon review, the Executive Associate Dean for Medical Education and Student Affairs may find that based on process or factual content, there is no basis for a change of an evaluation or grade. Alternatively, the Executive Associate Dean for Medical Education and Student Affairs may recommend that the grade be changed.

After review by the Executive Associate Dean for Medical Education and Student Affairs and submission of the reconsidered grade, the student may appeal any decision to the Dean of the medical school. The decision by the Dean shall be final.

It should be noted that any and all grade appeals should be conducted in a professional manner by the student involved; that is, demonstrating respectful disagreement with the perspective and judgment used by faculty members. Failure to exhibit appropriate professional attitudes may immediately terminate the appeal process and lead to an unprofessional conduct report.

Remediation

Remediation for the Foundations Phase

Assessments are used to identify those students who have not achieved minimal competency during a module: remediation is the process used to improve student performance and ensure that all students achieve the designated Student Physician Activities (SPAs) before moving on to the Application Phase of the curriculum.

The Office of Medical Education and Student Affairs will notify students of their need to remediate no later than three weeks after exam completion. The student must contact the module director within one week after this notification. **It is the responsibility of the student to schedule the remediation process with the module director.** The first attempt at remediation should occur by the week following the next school break.

Students requiring remediation must meet with the director of the module to be remediated. If, during this conversation, the student identifies a non-academic contributor to their poor performance (i.e., something medical or social), this should be brought to the attention of the Associate Dean of Medical Education and Student Affairs, Director of Admissions (jschwar@emory.edu or 404-727-5660).

The process for remediation, as determined by the module director, will be tailored to the individual student through the identification and correction of specific areas of deficiency. Retaking the entire module exam is only appropriate if the student's performance in all major content areas is unsatisfactory.

The module director will give to the Assistant Dean for Medical Education and Student Affairs a record of the remediation process for each student. This will be part of the student's record. Failure to demonstrate adequate competence will necessitate additional remediation by the student.

To more readily identify students in academic difficulty and offer them additional support services in a timely fashion, students who need to remediate more than one module will be provided with information on receiving a learning assessment, the results of which may trigger further support services that may help the student avoid the need to remediate additional modules.

Graduation Requirements for the MD Degree

Student Physician Activities (SPAs)

The Emory University School of Medicine Curriculum Committee has stated the outcomes of the MD program in terms of the activities characteristic of a physician that students will learn and do. These "Student Physician Activities" define what students should be able to perform prior to graduation.

1. Take a patient-centered history (focused and complete)
2. Perform a physical examination (focused and comprehensive) and recognize normal and abnormal findings
3. Apply principles of medical science to interpret clinical information
4. Apply principles of medical science to patient care to develop a problem list, working diagnosis, etiologic evaluation, and management plan
5. Develop a patient care plan
6. Perform technical procedures * (see Graduation Procedures List)
7. Communicate with patients and their support system regarding their care
8. Participate in difficult conversations with patients and their families
9. Document patient findings and treatment plans
10. Explain clinical decisions using scientific reasoning
11. Use electronic medical records
12. Formulate questions and search the literature to resolve knowledge gaps
13. Contribute to generalizable medical knowledge
14. Apply best evidence to the care of individual patients
15. Recognize and address ethical dilemmas
16. Protect patient information
17. Fulfill the professional role of a physician
18. Manage time
19. Be a leader

20. Use feedback to improve one's own practices
21. Demonstrate trustworthiness to patients, colleagues, and other healthcare personnel
22. Treat patients while understanding own biases
23. Treat patients without regard to personal advantage
24. Work in inter-professional teams
25. Identify personal limitations and seek assistance as needed
26. Teach peers and team members
27. Serve the community
28. Contribute to healthcare quality and safety initiatives

* Graduation Procedures List

Before graduation, all medical students should be able to:

1. Adhere to universal precaution technique
2. Maintain aseptic technique for invasive procedures
3. Perform sterile gloving and gowning
4. Perform a surgical hand scrub
5. Perform basic suturing
6. Administer local anesthesia
7. Manage the airway [oropharyngeal, nasopharyngeal, or intubation]
8. Conduct an initial emergency examinations, including assessment of the airway and hemodynamic stability
9. Use a bag-mask
10. Use an Automatic External Defibrillator (AED)
11. Use a defibrillator
12. Attain Basic Life Support certification
13. Perform splint placement/fracture management
14. Immobilize the cervical spine and perform a log roll
15. Perform an abscess incision and drainage
16. Perform an arterial puncture in the upper extremity
17. Draw a venous blood sample
18. Draw blood for bacterial cultures
19. Place a peripheral IV line in the upper extremity
20. Place a nasogastric tube
21. Perform injections (intradermal, intramuscular, & subcutaneous)
22. Perform stool occult blood testing
23. Perform a swab for throat culture
24. Perform microscopic urinalysis
25. Perform vaginal wet mount and KOH prep
26. Obtain a cervical culture
27. Perform a pap smear
28. Perform a spontaneous vaginal delivery
29. Place EKG leads
30. Place a urinary catheter (female & male)
31. Perform a surgical wound dressing change

32. Provide broncho-inhaler instruction
33. Provide clean catch urine instruction for male and female
34. Use a handheld ultrasound machine including: probe selection, probe orientation, scanning technique.

Academic Requirements

The judgment of the faculty as to the fitness of a student for the MD degree is based not only upon scholastic achievement, but also upon evidence of the student's character and professionalism. Each student must be approved for graduation by the Dean and the School of Medicine Council of Chairs.

To be eligible to receive the degree of Doctor of Medicine from Emory University School of Medicine, students must:

1. Have attained satisfactory standing in all courses and clerkships required for the degree and mastered the 28 Emory University School of Medicine SPAs;
2. Have taken and successfully passed Step 1, Step 2 Clinical Knowledge and Step 2 Clinical Skills of the USMLE;
3. Have completed all academic requirements of the MD degree within no more than six academic years from the date of matriculation.

Financial Obligations

It is a requirement for graduation that all financial obligations to the University shall have been satisfied. In the case of outstanding loans not then due and payable, loan documents satisfactory to the University must have been executed and delivered and all payments must be current.

Progress and Promotions

Promotional Guidelines

A student is considered to be achieving satisfactory academic progress as long as he or she passes the sequence of course and clerkships established by the Curriculum Committee and meets the performance standards set by the appropriate Progress and Promotions Committee. The assessment of academic progress includes the domains of knowledge, skills, behaviors, and attitudes – as expressed in the form of Student Physician Activities (SPAs). Hence, professionalism is an integral component when considering academic progress.

Independent of the final grade, unprofessional behavior may be the sole criterion for which a student may be recommended for academic warning, a period of academic probation, suspension, dismissal, or other sanctions as described throughout this document.

Students must be aware that the designation of Academic Probation or suspension may result in the loss of federal financial aid.

Guidelines for Performance in the Foundations Phase

Assuming the required level of professionalism has been met:

1. A student qualifies for promotion with grades of "S" in the Healthy Human modules and in the Human Disease modules. Although Anatomy is not a separately graded course, students must reach a satisfactory standard of performance in the portion of each end of module exam devoted to Anatomy. In addition, students must reach a satisfactory standard of overall performance in Anatomy when the initial scores for these portions of each exam, prior to remediation, are combined.
2. Receiving an initial grade of "unsatisfactory" for one module may result in a student being placed on academic warning and admonished to improve academic performance in the future. Remediation, as described above, will be required for the module.
3. Two or more initial grades of "unsatisfactory" in any semester during the Foundations Phase will result in an Academic Warning, at a minimum, in addition to required remediation of each modules in which the unsatisfactory grade was earned. After review and evaluation of the student's overall record, a student may: (a) not be promoted, (b) be requested to repeat specific modules, (c) be placed on probation, (d) be asked to repeat the Foundations Phase, or (e) be asked to withdraw from medical school.

A student may not be promoted with one or more final grades of "U." The Progress and Promotions Committee will review the entire record of any student who has a final grade of "U" in any subject to decide if remediation of the single "U" will be sufficient for promotion, or if the student should repeat any or all of the Foundations Phase, or if the student should be dismissed from medical school.

No student may be promoted to the next academic phase while still holding a grade of "IP" or "I" in any course.

Guidelines for Performance in the Applications, Discovery and Translations Phases

As stated above, independent of grades, unprofessional behavior may be the sole criterion for which a student can be recommended for a period of Academic Warning, a period of Academic Probation, suspension, dismissal, or other sanction. The Progress and Promotions Committee may use the following guidelines, but may make recommendations based on the merits of the specific case and regardless of the specific grades.

1. With one "D," a student may be (a) withdrawn from medical school, or (b) allowed to continue on Academic Warning or Academic Probation and

- required to repeat the course in which the grade of "D" was earned, or (c) allowed to continue on Academic Warning or Academic Probation and required to repeat the entire year. Grades of "C" or better will be required in all course work thereafter.
2. With more than one "D," a student may be:
 - withdrawn from medical school, or
 - allowed to continue on Academic Probation and required to repeat the courses in which the grade of "D" was earned, or
 - allowed to continue on Academic Probation and required to repeat the entire year. Grades of "C" or better will be required in all course work thereafter.
 3. With a grade of "F" or "U" in any clinical education course, a student may either be dismissed or may be allowed to continue, after the course is successfully repeated. Alternatively, the student may be required to repeat one or all of the Application, Discovery, and Translation Phases of medical school. If allowed to continue, the student will be placed on Academic Probation. Grades of "C" or better will be required in all course work thereafter.
 4. Students required to repeat clerkships or courses will receive grades for both the initial and repeat attempts. Those grades will be recorded on the official transcript and remain a part of the student's permanent record.
 5. Two grades of "F" call for dismissal.

Requirements for the Discovery Phase of the MD Curriculum for MD Students Enrolled in a Second Degree Program

1. All students must demonstrate that they have adequate knowledge of the research methods commonly used in healthcare professions. Either they must take and pass didactic material associated with Discovery (e.g. the materials delivered as SoCRATES), or take and pass material associated with the second degree program that has been approved by the Discovery leadership as meeting this requirement.
2. All students must carry out a research project that meets the standards established by the Discovery leadership for the MD degree. This project can be part of the student's second degree program, and may be designed and undertaken as part of that program. The Discovery leadership is responsible for assuring that the project fulfills the requirements for the Discovery phase of the MD curriculum.
3. All students will be required to present the results of their research project at Research Day.

United States Medical Licensing Examination (USMLE)

The USMLE is an examination series with four complementary steps, the first three of which are graduation requirements for Emory University School of Medicine. Students must successfully pass Step 1, Step 2 Clinical Knowledge, and Step 2 Clinical Skills in order to graduate from Emory University School of Medicine.

USMLE Step 1

In addition to successful performance during the Foundations Phase, students must also earn a passing score, as set by the USMLE, on Step 1 examination of the United States Medical Licensing Examination (USMLE) prior to receiving promotion to the Application Phase of the Emory University School of Medicine curriculum.

USMLE Step 1 must be taken by February 1st of the second year. Prior to taking USMLE Step 1, all academic requirements of the Foundations Phase, including any necessary remediation, must have been completed by the preceding December 20th. For students who do not meet these deadlines, the School cannot guarantee Applications, Discovery and Translation schedules that will permit the student to graduate at the expected time. Any delay in taking USMLE Step 1 must be approved in writing by the Executive Associate Dean for Medical Education and Student Affairs or his/her designee. Students who do not meet these deadlines for completion of academic requirements and for taking and passing USMLE Step 1 may be referred to the Progress and Promotions Committee for action.

The following guidelines have been adopted regarding failure to pass the first administration of Step 1 of the USMLE.

A student whose overall academic record warrants promotion, but whose failing Step 1 score is 15 points or less below the passing level has two options to gain promotion into the clinical years:

Option A - permits re-taking the test at the next available administration. Once the examination has been re-taken, the student may begin clinical work. If a passing score is achieved, the student will continue the Applications Phase; if a passing score is not achieved, the student will cease Applications Phase course work and be allowed to retake the examination a 3rd time. It is highly encouraged that such students engage in an intense review of the basic sciences and consider auditing courses prior to re-taking the examination for the third and final time.

Option B - grants a year's time during which time the student is encouraged to obtain remedial help and engage in an intense review of the basic sciences, with re-take of the examination by February 1st of the following year. If the test is passed at that time, the student then enters the Applications Phase.

A student whose failing score is more than 15 points below the passing level is generally required to take a leave of absence to prepare for retaking the test the following year. Such students may appeal to the Executive Associate Dean for Medical Education and Student Affairs and request an earlier re-take if extenuating circumstances can be shown. On successful re-take, such a student enters the Application Phase.

A student who fails USMLE Step 1 on the second administration will be given a third

and final opportunity to successfully pass Step 1. Dismissal from Emory University School of Medicine is mandatory after three unsuccessful attempts to pass Step 1 of the USMLE.

USMLE Step 2 Clinical Knowledge (CK)

Students are encouraged to take Step 2 CK as soon as feasible after the Applications Phase. At the latest however, students must take Step 2 CK by January 31st of their senior year. Passing Step 2 CK is a requirement for graduation.

USMLE Step 2 Clinical Skills (CS)

Students must take Step 2 CS by October 31st of the senior year. Students must schedule their exam date by the preceding March 31st in order to ensure an exam date by the October 31st deadline. Passing Step 2 CS is a requirement for graduation.

Required Objective Structured Clinical Examinations (OSCEs)

Students are required to pass the "End of Foundations OSCE" before advancing to the Application Phase, and to pass the "End of Application OSCE" before advancing to any subsequent clinical phase of the curriculum.

Progress and Promotions Committees

The academic progress and professionalism of EUSOM students is monitored in two separate Progress and Promotions (P & P) Committees. The module directors for the Foundations Phase (i.e., M1/M2 P & P Committee) and the course directors for the Application, Discovery and Translation of Medical Science phases (i.e., M3 & M4 P & P Committee) meet regularly to review the academic record of all students. The committees also review students that are brought forward due to academic or professionalism problems and follow up on students who have previously been given academic sanctions. Note that students who have violations of the EUSOM Conduct Code as defined in the EUSOM Student Handbook (Section 1) are referred to the Conduct Committee.

Each committee reviews the academic records of students and is responsible for making recommendations to the Executive Associate Dean (EAD) for Medical Education and Student Affairs to continue the student in good academic standing or address academic or professionalism concerns brought forth by module and clerkship directors. Note that a module or clerkship director who has made a recommendation that a student be brought up for discussion or, who has given a student a failing grade must recuse themselves from voting on any action. Academic and professionalism concerns are addressed by recommendations that the student receive a letter of concern, academic warning, or academic probation, or dismissal.

A ***letter of concern*** is recommended when the committee members have a concern about the student's performance but feel that the concern is not a pattern of academic underperformance or repeated professional lapses. The letter is intended to make the

student aware of the concern and serves as a record to the committee that the student was notified of the concern. An example of behaviors warranting a letter of concern would be a student in good academic standing missing a required lecture, failing to contact a module director to complete remedial work in a timely manner or being late to clinical rounds on several occasions. Students who receive a letter of concern meet with the EAD to discuss the concern(s) and a copy of the letter is placed in the student's file.

An **academic warning** is recommended when a student's academic performance or professionalism is of a more serious nature or if the issue that recurs was previously the subject of a Letter of concern. Examples that might warrant an academic warning would be a student who receives a D in a clerkship or has professionalism concerns such as disruptive behavior or a breach in patient confidentiality. Students who are given a Warning meet with the EAD to discuss the specific concerns and receive written notice of the academic warning. A copy of the letter is placed in the student's file.

Academic probation is recommended when the student's performance is unsatisfactory and is generally recommended after an academic warning but can be endorsed by the committee members for serious concerns related to academic performance (e.g., failure of a course) or professionalism (e.g., gross neglect for the welfare of their patient). The period of academic probation is outlined in a letter to the student after a full discussion with the EAD. The letter is placed in the student's file. Academic probation is a serious reprobation and requires that a student maintain adequate performance for the period designated as the probationary period.

Students who receive an academic warning or academic probation may also be required to successfully complete remedial work repeat specific courses including deceleration or repeat an entire academic year.

There are specific requirements outlined in the EUSOM Handbook for students who receive a D in a clerkship. These students are recommended for an academic warning or academic probation and required to either 1) repeat the course in which the grade of D was earned, or 2) allowed to continue on academic warning or academic probation and required to repeat the entire year (depending on their overall academic record). Students who receive more than one D can be suspended or dismissed, allowed to continue on academic probation and required to repeat the courses in which the grade of D was earned, or allowed to continue on academic probation and required to repeat the entire year with grades of C or better on all course work through the next year.

There are also specific academic sanctions outlined in the EUSOM Handbook for students who fail a course. Students who receive a grade of F or U in any clinical education course may either be dismissed or may be allowed to continue after the course is successfully repeated. Alternatively, the student may be required to repeat one or all of the Application, Discovery, and/or Translation Phases of medical school. If allowed to continue, the student will be placed on academic probation and grades of C or better will be required in all course work thereafter. Two grades of F call for dismissal as outlined in the EUSOM Handbook.

Students, who are not recommended for promotion by the P & P committee, may be recommended for suspension or dismissal. Suspension and dismissal generally occur after a series of academic warnings and a period of academic probation, although the EUSOM Handbook cites specific cases in which a student with one D may be suspended from medical school and a student with two F's should be dismissed from medical school.

Suspension may be recommended when a student has been given previous warnings and a period of academic probation but continues with sub-standard performance. Dismissal may be recommended when the student has been given adequate warnings and counseling to improve their academic and/or professional behavior and consistently failed to meet the standards of EUSOM.

Once the EAD has been notified of a recommendation for probation, suspension or dismissal the EAD will convene an *ad hoc* committee of three senior faculty members with no previous knowledge of the student's academic performance to review the entirety of the student's record and the circumstances surrounding the committee's recommendation. The *ad hoc* committee will then provide the EAD with their recommendation of whether or not to proceed with the recommendation of the Progress and Promotions committee. The final decision for suspension or dismissal is made by the EAD after considering the *ad hoc* committee's recommendation. The EAD's final decision is then provided to the student and a copy is placed in the student's file. A student may appeal the decision of the EAD to the Dean by submitting such request in writing within ten (10) days of being notified of the decision by the EAD.

National Board of Medical Examiners (NBME) Subject Examinations

The National Board of Medical Examiners (NBME) Subject Examinations are an important part of the educational process, evaluating the performance of a large, representative group of examinees at the same stage of training. These exams are used throughout the curriculum as one part of the evaluation process. Students are required to take NBME Subject Examinations at scheduled times and locations.

Those students granted special accommodations for testing must present them to Ms. Shontell Stanford, Assistant Director of Medical Education Programs and Curriculum Management, a letter from the Office of Disability Services each semester outlining the student's specific accommodations. Individual arrangements will be made for the student at each exam in accordance with the specified accommodations.

To prevent additional charges, exam orders must be placed at least 22 days prior to the testing date. Therefore it is important for the Office of Medical Education and Student Affairs (OMESA) to know well in advance the number of students scheduled to test at every exam. Unexcused absences from NBME exams will result in the student being charged for any additional costs associated with rescheduling of the examination.

For NBME examinations, students MUST test within the normal testing schedule. A published exam schedule is available through the medical student portal.

To ensure the security of NBME materials and compliance with testing regulations, all NBME subject exams must be administered by trained proctors in an NBME-approved testing site. The School of Medicine Building is the only approved testing site for Emory medical students.

Arriving Late for an NBME Exam or Missing Examinations

It is considered part of professional behavior and the responsibility of the student to arrive on time for scheduled examinations with their Emory cards.

Emory designates a Chief Proctor for NBME exams. It is the responsibility of the Chief Proctor and his or her designees to assure that NBME exams are given in strict accordance with NBME policy. As per this policy, a student may be admitted to a testing room up to 30 minutes after the exam has started, provided the student's name is on the check-in roster and the Chief Proctor approves the late start. Students arriving late for an exam will be expected to end the exam at the same time as other examinees; no extra time will be allotted to compensate for their tardiness.

For any student who is more than 30 minutes late for the exam, the NBME must be contacted by the Chief Proctor to seek approval for taking the examination. The Chief Proctor and his or her designees are not required to allow any student to start an exam late if doing so will be excessively disruptive to the other students.

Honors

Academic honors

Academic honors are determined by a School of Medicine faculty committee. The designation of students graduating cum laude, magna cum laude, and summa cum laude are made on the basis of a combination of grade point average and other academic accomplishments, including Discovery and other academic pursuits, inclusive of work done as part of dual degree work or external fellowships.

Alpha Omega Alpha

Founded in 1902, Alpha Omega Alpha Honor Medical Society is a professional organization that recognizes and advocates for excellence in scholarship and the highest ideals in the profession of medicine. Students are elected based on their embodiment of the vision and goals of the society:

- a) Professionalism: To hold the conviction that professionalism in medicine is a worthy goal.
- b) Scholarship: To promote scholarship among medical professionals.
- c) Leadership: To set an example worth emulating.
- d) Service: To serve the medical profession and the community.

Students who are in the upper quartile (25%) of their class in grade point average are eligible for nomination. As outlined above, additional criteria include leadership capabilities, ethical standards, fairness in dealing with colleagues, demonstrated professionalism, and service to the school and community at large.

Per AOA, one-sixth of a medical school graduation class may be considered for membership, and up to one-half of the total may be nominated during the junior year. New members are elected by the student members of Alpha Omega Alpha. Elections occur during the spring of junior year and the fall of senior year. For more information, please refer to <http://www.alphaomegalpha.org/>.

Supplies

Laptops

Laptops are required of all Emory University School of Medicine students. Laptops must meet technical specifications and have the required software programs installed. The School of Medicine Information Technology Services (SOMITS) is available to assist students with technical and software issues for their laptops that meet the specifications.

All newly enrolled School of Medicine students are encouraged to visit the School of

Medicine's IT office before orientation to obtain help configuring laptops and mobile devices for Emory's wireless network (EmoryUnplugged) and Exchange Email System.

Please verify your laptop meets all Minimum Requirements by using the requirements guide provided by IT.

Other Equipment

Each student is required to furnish certain equipment, which must meet standard requirements of the medical faculty. The University assumes no financial responsibility for this equipment. Purchase of a microscope is not required. The School of Medicine provides specifications for diagnostic equipment at the appropriate time during the first course in which an instrument is required. This equipment may be purchased at a number of the commercial suppliers listed in the yellow pages of the local telephone book under "Hospital Supplies and Equipment." More often, however, a medical student in the class handles the purchase of diagnostic equipment for all classmates who wish to purchase it. The purchase is thus more convenient for students and without extra cost, since the student seller usually can obtain the material at reduced prices. Laboratory coats and white coats are required for students on clinical clerkships and are available at the University Medical Bookstore. Patches for the White Coats are available from the Admissions office.

The Office of Admissions is responsible for ordering White Coats for the first year students. Each coat has a EUSM logo patch which must be sewn onto the upper left sleeve. A set of ID badges for laboratory coats and white jackets is also provided to students at the time of Registration and should suffice for all four years of medical school.

Books

The Emory University Medical Bookstore, located on Oxford Road on the Emory Campus, offers books and supplies at reasonable prices to students, faculty, and staff.

TUITION AND FEES

The Board of Trustees sets the tuition and fee rates for the upcoming academic year every February. Below are the MD program tuition and fees rates for 2015-2016:

Tuition per semester	\$24,900
Athletic Fees per Semester	\$120
Activity Fees per Semester	\$92
Transcript Fee (Entering students only) one-time fee	\$70
Student Mental Health and Counseling Fee per Semester	\$58

Clinical Administrative Fee per Semester	\$50
Student Immunization and Disability Fee per Semester	\$125
Technology Fee per Semester	\$50

Deferred Payment/Emory Payment Plan

The Emory Payment Plan is available to qualified students who wish to divide tuition fees into scheduled payments. A \$60 service fee is charged to participate in the Emory Payment Plan. The fee is added to the second payment.

Instructions are given for deduction of loans and for University-administered scholarships in listing the amount due, which is to be paid in four installments each semester according to the Emory Payment Plan Schedule.

To set up a payment plan, contact Student Financial Services at (404)727-6095, visit www.emory.edu/studentfinancials, or sign up in OPUS through the Student Center.

Refund Policy

Students who withdraw from the curriculum for any reason may qualify for a tuition refund on a semester basis. Tuition refunds will be calculated as follows:

Withdrawal During	Charge	Credit
First week (through drop/add)	0%	100%
Second week	20%	80%
Third week	40%	60%
Fourth week	60%	40%
Fifth week	80%	20%

There will be no refunds after the fifth week of any semester.

Resources/Helpful Links

Emory University Office of Financial Aid: Detailed instructions and information regarding the financial aid application process: www.studentaid.emory.edu

Emory University Student Financial Services (Student Accounts Office): Sends bills, accepts payment for tuition and fees, and processes refunds: www.studentfinancials.emory.edu

Free Application for Federal Student Aid (FAFSA): www.fafsa.ed.gov

CSS PROFILE: www.collegeboard.org

U.S. Department of Education: Official information on federal financial aid programs, including eligibility requirements and options for loan repayment: www.studentaid.gov

MD PROGRAM ACADEMIC CALENDAR

Fall Term 2015

Fall term begins	July 13, 2015
cl2019 Orientation	July 20-24, 2015
cl2019 Week on the Wards	July 27-July 31, 2015
cl2019 First day of class	August 3, 2015
cl2016/2017 Summer Break	August 24-31, 2015
Labor Day (university holiday)	September 7, 2015
cl2018 Fall Break	October 5-6, 2015
Spring course registration begins	October 26, 2015
cl2018/2019 Thanksgiving Break	November 21-29, 2015
cl2016/2017 Thanksgiving Break	November 26-30, 2015
End of term	December 23, 2015
cl2017/2018 Winter Break	December 21, 2015-January 3, 2016
cl2015/2016 Winter Break	December 24, 2015-January 3, 2016
cl2016 Deadline to take USMLE Step 2 CK & CS	December 31, 2015

Spring Term 2016

Classes begin	January 4, 2016
MLK Holiday (university holiday)	January 18, 2016
cl2018 deadline to take USMLE Step 1	January 31, 2016
cl2018 Foundation Phase ends	January 31, 2016
cl2018 Break	February 1-21, 2016
Orientation to the Clinical Years	February 22-26, 2016
cl2017 Applications Phase ends	February 29, 2016
cl2017 Discovery & Translation Phases begin	March 1, 2016
Fall course registration begins	March 21, 2016
cl2016 Spring Break	March 26-April 3, 2016
cl2019 Spring Break	April 11-17, 2016
cl2016 Translation Phase Ends	April 29, 2016
End of term	May 9, 2016
Commencement	May 9, 2016

Summer Term 2016

Memorial Day (university holiday)	May 30, 2016
cl2019 Summer Break	June 20-July 10, 2016
Independence Day (university holiday)	July 4, 2016

MD PROGRAM COURSES

MD 505 Prologue I (Health Human), 2 credits

Foundation Phase, Required, S/U

Module Director: J. William Eley, MD; Gordon Churchward, PhD

An introduction to the large themes of medicine – what it means to be a patient, what it means to be a physician, the definitions of health and disease, and balance and homeostasis.

MD 508 Human Development, 1 credit

Foundation Phase, Required, S/U

Module Director: Nancy Fajman, MD; Rickey Gillespie, MD

Illustration of the the significance of the biopsychosocial model in medicine; identification of the major biological and psychosocial milestones of healthy individuals at infancy, childhood, adolescence and adulthood; and the differentiation of the major causes of morbidity and mortality at different age groups.

MD 510 Embryos, Tissues, and Cells, 3 credits

Foundation Phase, Required, S/U

Module Director: Winfield Sale, PhD; Victor Faundez, MD, PhD

A description of the fundamentals of development including mechanisms of differentiation and morphogenesis, the embryonic origin of tissues and mechanisms of birth defects; the fundamental features of the basic tissues; the basic design of the cell, and the control of cell growth and relationship of cell growth and death to cancer.

MD 515 Neural Function, 2 credits

Foundation Phase, Required, S/U

Module Director: Douglas Falls, MD

A description of the basic cellular biology of neurons and glia and the biophysics of neuronal electrical signaling; the overall process of chemical synaptic transmission; the autonomic nervous system; the somatosensory and special sensory systems; voluntary movement; the interaction of sensory and motor modalities within association areas of the cortex and of the contributions of the vestibular organ, the cerebellum, and the basal ganglia in modulating body movement and the neuroanatomy and neural function of each clinical function tested in the neurological examination.

MD 520 Exercise and Movement, 2 credits

Foundation Phase, Required, S/U

Module Director: Wylie Nichols, PhD; Laurence Sperling, MD

Explanation of the principles of osmosis and the balance of fluids between different compartments of the body; the principles of thermodynamics in relation to free energy; the oxidation of nutrients to produce useful energy; the electrical and mechanical properties of the heart; the dependency of blood pressure on pressure and volume and how these parameters determine blood flow in the arteries and veins;

essential functions of the kidney; regulation of gas exchange in the lungs and peripheral tissues; the regulation of body temperature; the response of the major organ systems to the challenge of exercise.

MD 515 Nutrition and Metabolism, 2 credits

Foundation Phase, Required, S/U

Module Director: David Pallas, PhD; Thomas Ziegler, MD

A description of the major pathways of metabolism of carbohydrates, proteins, nucleotides, minerals, and lipids; the integration of various metabolic pathways through hormonal regulation; the cell biology and histology of the human digestive tract; the physiology of digestion and absorption of nutrients; the role of gut bacteria in health and disease; the role of macro- and micronutrients in human nutrition and identify the components of a healthy diet and key concepts in nutritional assessment of patients, causes and consequences of micronutrient and macronutrient depletion, and nutritional support strategies.

MD 530 Endocrine Control, 1 credit

Foundation Phase, Required, S/U

Module Director: Victor Faundez, MD, PhD; Eric Felner, MD

A description of the regulatory functions of the endocrine system including pituitary, thyroid and parathyroids, adrenocortical and reproductive hormones, the physiological effects of these systems and the physiology and endocrinology of normal pregnancy.

MD 535 Genetics and Evolution, 2 credits

Foundation Phase, Required, S/U

Module Director: Kathryn Garber, MD

Explanation of the inference of disease risk based on pedigree and family history; the application of genetic/genomic variation to explain variation in normal phenotype, disease phenotypes, and treatment options; the application of cytogenetics and molecular genetics to describe the basic principles, uses and limitations of genetic testing technologies; appropriate indications for specific genetic testing and the limitations, implications of test results, and ethical concerns associated with genetic testing; the basic concepts of population genetics; the indications for genetic referral, and effective communication with patients and professionals.

MD 540 Aging and Dying, 1 credit

Foundation Phase, Required, S/U

Module Director: Manuel Eskildsen, MD

Key concepts of geriatric medicine; basic science of aging; aging physiology; the built environment and aging; gait and function in the elderly; illness trajectory and palliation; death and dying.

MD 545 Prologue II (Human Disease), 4 credits

Foundation Phase, Required, S/U

Module Director: Gordon Churchward, PhD

A description of beneficial and detrimental interactions between microbes and the human host; the defense mechanisms of the human body operate and how their coordinated to prevent infection; the protective and injurious effects of inflammatory responses; disturbances in blood flow and the disruption of hemostasis and resulting vascular injury; the factors that determine if a compound can be an effective drug and how it is prescribed and the perturbation of normal cellular function resulting in neoplasia.

MD 550 Skin, Muscle, Bones and Joints, 4 credits

Foundation Phase, Required, S/U

Module Director: Karen Atkinson, MD; Mary Spraker, MD

A description of the infections, autoimmune/inflammatory conditions, malignancies/tumors, effects of wounds/trauma, effects of toxic exposures and metabolic derangements that can affect skin, muscle, bones and joints, and for these conditions, the factors that predispose to these conditions and the treatment of such conditions, as well as a description of the genetic diseases that occur in skin, muscle, bone and joints and the treatments for such conditions, if any are available.

MD 555 Pulmonary Module, 5 credits

Foundation Phase, Required, S/U

Module Director: David Schulman, MD

A description of the common infections and their manifestations in the lung; normal respiratory epithelial function and its participation in host defense; factors that regulate the transfer of gases between the atmosphere and tissues; common pathological processes that disturb airflow and gas exchange and how these derangements are measured; factors that cause airflow limitation and therapeutic approaches to reverse these abnormalities; the normal anatomy of the lung and surrounding structures and how derangements in the airways, lung parenchyma, and pulmonary circulation lead to alterations in pulmonary function; regulation of blood flow through the lung in health and disease; common disorders involving the lung interstitium; the development of thoracic neoplasms, characteristic manifestations of lung cancer, and common therapeutic approaches used in its treatment.

MD 560 Cardiovascular, 5 credits

Foundation Phase, Required, S/U

Module Director: Joel Felner, MD; Dimitri Cassimatis, MD

Review normal cardiovascular physiology; describe cardiovascular pathophysiology; describe common and uncommon cardiovascular diseases in terms of their pathophysiology, symptoms, and physical exam findings and describe the key

diagnostic and treatment options for these common and uncommon cardiovascular diseases

MD 565 Gastroenterology, 4 credits

Foundation Phase, Required, S/U

Module Director: Tanvi Dhere, MD

A description of the basic function of the GI tract and liver; the risk factors, causes, and/or pathophysiological mechanisms underlying common GI symptoms; clinical presentations and complications of major GI and liver diseases; pathological features of major GI and liver diseases ; the indications for endoscopic procedures; and the definition and correlation pathological features with imaging and laboratory studies.

MD 570 Renal and Genitourinary, 4 credits

Foundation Phase, Required, S/U

Module Director: James Bailey, MD; Douglas Eaton, MD

A description of the basic anatomy and physiology of the genitourinary system; the pathophysiological mechanisms underlying clinical symptoms and signs of major disease;

the anatomical pathological disease correlates with respect to the genitourinary system, and

the complexity of the kidney, the diversity of the pathology and the adaptive and maladaptive responses that occur under normal conditions and diseased states.

MD 600 Endocrine/Reproductive Health, 5 credits

Foundation Phase, Required, S/U

Module Director: Eric Felner, MD; Mary Dolan, MD

A description of the the pathophysiology of endocrine conditions; endocrinologic diseases from the molecular to the clinical level; common endocrine diseases from neonate to geriatric patient; surgical aspects of endocrine diseases; imaging techniques used to evaluate endocrine diseases; laboratory & clinical research methods in the endocrine system; endocrine conditions affecting females and reproduction; the reproductive health issues women may experience throughout their lifetime; the menstrual cycle, abnormalities and associated pathology; options for fertility management, ethical principles of choices regarding reproductive health; female sexual dysfunction; medications commonly used in reproductive pharmacology, side effects, and implications for use during pregnancy and lactation; sexually transmitted infections; pregnancy; lactation, benign vs malignant gynecologic and breast pathology and systemic disorders and their effects on reproductive function.

MD 605 Hematology, 3 credits

Foundation Phase, Required, S/U

Module Director: Louis Rapkin, MD

A description of benign and malignant hematology including normal marrow function, anemia, infections in the immunocompromised host; lymphoid and myeloid

malignancies, premalignant conditions, emergent presentations , end of life care issues; coagulation including primary and secondary hemostasis and disorders of hemostasis.

MD 610 Neuroscience I, 4 credits

Foundation Phase, Required, S/U

Module Director: Jafar Khan, MD

A description of the structure and function of the brain, brainstem, spinal cord and meninges; including gross anatomy, blood supply, and spinal reflexes; the characteristic clinical features, natural history and prognosis and the etiology and pathogenesis of key neurological diseases; the mechanisms of action, use, and adverse effects of drugs for the treatment of nervous system disorders.

MD 615 Neuroscience II, 4 credits

Foundation Phase, Required, S/U

Module Director: Rickey Gillespie, MD, PhD; Jaffar Khan, MD

Neuroscience II continues and concludes the examination of clinical topics in neurology and ophthalmology. The majority of the course surveys clinical topics in behavioral sciences, psychopharmacology, psychology, and psychiatry. Methods of instruction include lectures, small-group problem-based learning, live patient interviews, experiential exercises, and reflective writing.

MD 620 Summation, 2 credits

Foundation Phase, Required, S/U

Module Director: Wendy Armstrong, MD

Translation of basic microbiology and immunology to human disease, including generating a differential diagnosis and develop an approach to therapy; integration of information from individual organ systems to understand multi-system disease and the implications of health policy and decision-making on a population level, including the influence of economics, politics and culture on a global level.

MD 625 Elective, 2 credits

Foundations Phase, Required, S/U

Module Director: Gordon Churchward, PhD

A foundations elective is an opportunity for students to explore fields outside the standard curriculum. They may choose to participate in activities directed to a specific career goal or they may choose to participate in activities outside the primary field of interest. The electives can take the form of a faculty organized experience in which several students participate or a directed study where an individual student is guided by a single faculty member of their choosing. The minimum requirement for either of these kinds of elective is 15 contact hours with the faculty member.

MD 548 Becoming a Doctor I, 3 credits

MD 578 Becoming a Doctor II, 3 credits

MD 638 Becoming a Doctor III, 3 credits

Foundations Phase, Required, S/U

Module Director: Lisa Bernstein, MD

Emphasis on the importance of the doctor-patient relationship; performance of a patient-centered, open-ended style medical interviews that include chief complaint, history of present illness, past medical history, social history, allergies and medications on standardized patients and real clinic patients; ask open-ended questions and demonstrate listening skills; respond to clues with reflection, empathy, understanding and/or listening; make transitional statements to social, family, occupational and past history; normalize sensitive topics (e.g. sexuality, drug abuse history, homelessness); perform a basic physical examination and distinguish normal from abnormal findings; identify and examine attitudes and feelings regarding patient care in an open and non-threatening manner through readings, reflections and discussion; apply knowledge of pathophysiology to the clinical manifestations of common and basic diseases; gather, process and interpret data obtained from the history, physical examination, labs, and demonstrate professionalism in the student roles as future MDs

Outpatient Experience (OPEX)

Foundation Phase, Required

Module Director: Jada Bussey-Jones, MD

A regular, consistent exposure to clinical medicine and mentorship in a primary care setting emphasizing continuity of care and evidence-based medicine; learn and practice communication styles which are culturally sensitive and effective with patients, and professional, with colleagues; multiple experiences to learn and improve history taking and physical exam skills; multiple experiences to learn and deliver effective techniques in health promotion; opportunities for reflection on professionalism and process improvement; exposure to the various roles and responsibilities of members of the healthcare team and the office support staff necessary to manage an efficient, effective medical practice, and observation of the impact of culture, socioeconomic status, spirituality, health beliefs and practices, and lifestyle and behavior(s) on the provider/patient relationship and healthcare outcomes.

MD 705 Adult Primary Care, 9 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Eva Rimler, MD; Emily Herndon, MD

Students are assigned to one adult primary care practice for six weeks. The other six weeks are split between a pediatric primary care office (Ambulatory Care Block/Pediatric Primary Care, credit, 3 hours), and outpatient subspecialties in dermatology, ophthalmology, orthopedics, otolaryngology, palliative care, and urology. Students work up one to four patients in each half-day session focusing on health promotion, disease prevention, and acute and chronic disease management in the

ambulatory setting. Additionally, students participate in a Quality Improvement (QI) curriculum which includes developing a QI project for one of their primary care practices, and weekly seminars and workshops related to primary care and subspecialty topics. Students are assessed by direct observation by preceptors, reflection papers, QI project proposals, and written and oral examinations. Examinations include pediatric and subspecialty written exams, an adult primary care oral exam, and the National Board of Medical Examiners (NBME) Adult Primary Care computerized shelf exam.

MD 706 Pediatric Primary Care, 3 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Eric Felner, MD

Offered during the Applications Phase of the undergraduate medical student educational (UME) curriculum, this required clerkship matches students with primary care outpatient opportunities with adjunct pediatric faculty from the Emory University School of Medicine within the metropolitan Atlanta community.

MD 710 Internal Medicine, 8 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Richard Pittman, MD; Karen Law, MD

Students spend eight weeks rotating on the general medicine wards of Grady Memorial Hospital, the Atlanta Veterans Affairs Medical Center, Emory University Hospital Midtown and Emory University Hospital. Each student collects the database, formulates the problem list, draws up the initial plans, and follows each patient in a problem-oriented fashion. To a large extent, the students have primary responsibility for their patients, working under the close supervision of house staff and faculty. Students work as an integral member of the ward team, which consist of an attending faculty member, junior assistant resident, two interns, and two students. Students make ward rounds with the house staff and present patients to the attending faculty. Each student completely works up two to three new patients per week for a total of eighteen patients during the rotation. Student goals are to learn how to collect data, identify and define individual problems, separate multifarious problems into their individual components and clarify their relationships to each other, and organize problems and follow them systematically through to their resolution. Students attend frequent conferences where patients are presented and discussed by members of the teaching staff. Conferences extend throughout the field of internal medicine and its subspecialties. Weekly, throughout the eight weeks, students convene together with the clerkship directors to cover case-based questions and problems to complement their clinical experience. Final examinations include oral, standardized patient exams and the National Board of Medical Examiners (NBME) subject exam.

MD 715 Neurology, 4 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Jaffar Khan, MD

This rotation is required of all medical students and is taken during the Application phase of the curriculum. The student receives two two-week assignments to rotate at two of the following: to Grady Hospital, Emory University Hospital - Main Campus, Emory University Hospital - Midtown, Veterans Affairs Medical Center, The Emory Clinic, Wesley Woods, and Children's Healthcare of Atlanta at Egleston.

MD 720 Obstetrics/Gynecology, 6 weeks

Applications Phase, Required, Letter Grade

Clerkship Director: Jennifer Goedken, MD

This six-week clerkship is divided into rotations in labor and delivery, gynecology, and outpatient experience. Students are involved in all aspects of patient care. They are responsible for making rounds and writing notes under the supervision of the house staff, attending assigned clinics, and participating in the activities of the operating and delivery rooms.

MD 725 Pediatrics, 4 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Eric Felner, MD

This six-week clerkship is divided into rotations in labor and delivery, gynecology, and outpatient experience. Students are involved in all aspects of patient care. They are responsible for making rounds and writing notes under the supervision of the house staff, attending assigned clinics, and participating in the activities of the operating and delivery rooms. In addition to this clinical experience, there is a structured didactic curriculum that includes departmental weekly conferences, skills practicum, lectures, debates, and web based instruction. The final grade in the clerkship is based on clinical performance evaluations, a debate presentation, an oral evaluation, a standardized written examination, and the National Board subject exam.

MD 730 Psychiatry, 6 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Jeffrey Rakofsky, MD

The emphasis on this clerkship is the clinical application of principles of psychiatry learned in the first two years. Students are assigned clinical clerkships on the inpatient psychiatric wards at Grady Memorial Hospital, the Atlanta Veterans Affairs Medical Center, Wesley Woods Health Center, the DeKalb Crisis Center, and Emory University Hospital. Rotations are offered on the consultation-liaison services at Grady Memorial Hospital, Emory University Hospital, Emory University Hospital Midtown, and the Atlanta Veterans Affairs Medical Center. Assignment to child psychiatry at Children's Healthcare of Atlanta is also possible. Outpatient experience is available at Skyland Trail and is also possible at many of the clinical teaching sites. Clinical responsibilities

include obtaining admission history and physical examinations, formulating psychodynamic aspects of the case, psychiatric differential diagnosis, and actively participating in the psychotherapeutic and the psychopharmacologic management of patient treatment. Students attend and participate in rounds and ward teaching conferences as well. An additional component of the clinical duties of this rotation is participation in emergency room call at the Crisis Intervention Service at Grady Memorial Hospital. A weekly clinical case teaching conference is held with an attending physician to demonstrate interview techniques, discuss differential diagnosis and allow for in-depth discussion of psychodynamics of selected patients. A lecture series covers major clinical aspects of the diagnosis and treatment of major psychiatric disorders including the anxiety disorders, depression, dementia, delirium, personality disorders, psychopharmacology, psychiatric emergencies and schizophrenia. A comprehensive syllabus with selected readings is provided. There is a midterm oral examination and an end of clerkship departmental oral examination in addition to the national miniboard in psychiatry. Clinical evaluations are a part of the final letter grade.

MD 735 Surgery, 7 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Barbara Pettitt, MD

Students are assigned to 4 weeks of a general adult or pediatric surgery service and 3 weeks of a surgical subspecialty. Assignments to these rotations are determined by preference sheets sent into the Clerkship Coordinator before the clerkship begins. Students serve as junior members of our surgical teams with graded responsibility for patient care and the opportunity to assist and practice skills in the operating room. Students are responsible for doing the history and physical examination of patients assigned to them and work closely with the faculty and resident staff in determining necessary preoperative, intraoperative, and postoperative care. Students are assigned to small groups that meet weekly with a faculty mentor. During the clerkship, each student takes several nights of call on the Grady Trauma Service. A didactic lecture series is presented two mornings per week, which includes lectures on a variety of surgical topics, as well as lectures by Emory ethicists and radiologists on topics from those disciplines pertinent to surgery. Students also attend several skills labs that cover suturing, knot-tying, and advanced vascular access techniques. Students' grades are based on the clinical evaluations from their attendings and residents, scores on two oral examinations and the National Board of Medical Examiners Surgery Shelf exam given at the end of the rotation, and written patient summaries and patient logs.

MD 740 Anesthesiology, 1 credit

Applications Phase, Required, Letter Grade

Clerkship Director: Guarav Patel, MD

This clerkship is a basic introduction to the principles and techniques involved in the care of the perioperative patient. An anesthesiologist assists the student in discovering the techniques and principles of basic life support including airway management,

maintenance of cardiopulmonary stability, and intensive monitoring. The student shall acquire an appreciation of the needs of the acutely ill patient and the role of the anesthesiologist in their care. Students also participate in morning/afternoon conferences and a case-based problem set discussion. Reading assignments are from a provided text. The final grade is based on problem set submission and participation/performance.

MD 745 Radiology, 2 credits

Applications Phase, Required, Letter Grade

Clerkship Director: Stefan Tigges, MD

This is a 2 credit "virtual" radiology course integrated into the seven free standing clerkships during the Applications phase of the UME curriculum. The radiology presentations have been tailored to emphasize imaging features of diseases and conditions that students will encounter in the hospital wards and in clinic during the rotation the student is on. The virtual clerkship is structured as an introduction to the fundamentals of Radiology, including basics of Chest X-ray interpretation, recognition of 22 life or limb threatening imaging findings and principles of diagnostic testing. Typically included are lectures and small group sessions on genitourinary, gastrointestinal, cardiothoracic, pediatric, musculoskeletal and intervents are also taught using clinical radiology experiences, attendance at Radiology noon conference, assigned readings, and various electronic methods including podcasts. Graded portions of the rotation include small group and individual presentations, a practical exam and multiple written radiology exams given at the same time that students take their end rotation shelf exams.

MD 748 Becoming a Doctor IV, 2 credits

Applications Phase, Required, S/U

Clerkship Director: Lisa Bernstein, MD

ELECTIVES

MD 920 AN01 Cardiothoracic Anesthesia & Critical Care, 4 credits

Translation Phase, Elective, S/U

Course Director: Sophia Fischer, MD

For the OR period, the student will be exposed to the pre-operative evaluation and intra-operative care of patients undergoing cardiothoracic surgical procedures. This will take place at both Emory University Hospital and Emory Crawford Long Hospital, with students spending one week at each site. Students will be paired with a senior resident or fellow each day. Duties will include OR room preparation, patient evaluation, and assistance with intraoperative monitoring. It is expected that the student will become familiar with the interpretation of invasive monitors, the anesthetic concerns of cardiopulmonary bypass, and gain exposure to intraoperative echocardiography (observation only). Hours are generally from 6am to 3pm.

MD 920 AN02 Anesthesia for Surgical Subspecialties, 4 credits

Translation Phase, Elective, S/U

Course Director: Billynda McAadoo, MD

To introduce the student to the principles and techniques involved in the care of the peri-operative patient. An anesthesiologist and resident will assist the student in discovering the techniques and principles of basic life support including airway management, maintenance or cardiopulmonary stability, and intensive monitoring. The student shall acquire an appreciation of the needs of the acutely ill patient and the role of the anesthesiologist in their care. The student will also observe and participate in the management of acute and chronic pain patients while rotating on the Pain Service under the direction of both anesthesiology attendings and residents. The student will also have the opportunity to be involved in the anesthetic management of pediatric patients while rotating on the Pediatric Anesthesiology Service and obstetric patients while rotating on the Obstetric Anesthesiology Service.

MD 920 CR01 Radiation Oncology, 4 credits

Translation Phase, Elective, S/U

Course Director: Roberto Diaz, MD

This rotation is designed as an introduction to clinical radiation oncology. Students will participate in the daily clinical practice of radiation oncology with resident and staff physicians. The student will learn by tutorial and hands-on experience. The student will be expected to spend time at The Emory Clinic, Emory University Hospital Midtown, Grady Hospital, and Atlanta VA Medical Center.

MD 920 D01 Dermatology, 4 credits

Translation Phase, Elective, S/U

Course Director: Suephy Chen, MD

The dermatology sub-internship elective is available for both students interested in going into dermatology as well as those who wish to learn about cutaneous disorders but who are not planning on making dermatology their career. For those students who want to become dermatologists, they may either take (1) month sub-internship consisting only of clinics, or to combine their clinical month with one or two other months of research. Students are encouraged to contact faculty directly to arrange research projects (see "Dermatology Clinical Research" elective offering.) Students going into dermatology will be given preference during the months of June to November. All students should first contact Barbara Bingham to ensure that proper forms are completed. They will need to complete the VSAS registration which will require fitting for a tuberculosis mask. They should next contact Connie Kearse, the elective coordinator, with at least two options for elective months. Please note that there will be a May 31st deadline whereupon decisions for placement will be made. All other requests after the May 31st deadline will be considered but may not be honored if the rotation is filled.

MD 920 D02 Dermatology, 4 credits

Translation Phase, Elective, S/U

Course Director: Suephy Chen, MD

The dermatology clinical research elective is geared to students who are interested in going into dermatology as a career. Students who sign up for both the clinical and research dermatology electives will have a few clinics per week during their research elective and a heavier clinic schedule during their clinical elective. In this way, students can utilize more than one month to complete their research project and still have exposure to clinics throughout their rotations. All students should first contact Barbara Bingham to ensure that proper forms are completed. They will need to complete the VSAS registration which will require fitting for a tuberculosis mask. They should next contact Connie Kears, the elective coordinator, with at least two options for elective months. Please note that there will be a May 31st deadline whereupon decisions for placement will be made. All other requests after the May 31st deadline will be considered but may not be honored if the rotation is filled. Once the dates are formalized, the student needs to contact Bridget Bradley, RN to ensure that the IRB approval of their involvement is pending.

MD 920 EM02 Medical Toxicology, 4 credits

Translation Phase, Elective, S/U

Course Director: Stella Wong, MD

The student will review records of patients admitted to Grady Hospital, Emory Midtown, Emory University Hospital, Egleston Hospital and Hughes Spalding for toxicologic problems and will discuss and make rounds on selected patients on a daily basis under direct supervision. The student will determine the outcome of poisoning incidents reported to the Georgia Poison Center by doing follow-up calls and later may assist the staff in the management of telephone calls to the extent of demonstrated ability. Each day the student will follow three cases which are seen at bedside. An oral report will be prepared and discussed with a preceptor. The student will evaluate at least 1 clinic patient and help prepare a report under the supervision of the toxicology fellow assigned to the patient. The student will participate in a weekly case conference. The student will attend and participate in a weekly journal club, a weekly emergency medicine conference, a weekly toxicology conference, and all toxicology lectures (at least twice a week) during the rotation. At the end of the rotation, the student will present a 20 to 30 minute long PowerPoint presentation on a toxicology topic (approved by fellows or faculty). If the student is interested, he/she may also answer Poison Control calls under the supervision of an experienced specialist in poison information. The student may take part in a public education program by assisting the speaker in the field and may, optionally conduct such sessions according to demonstrated ability and interest. The student may elect to complete, during the elective, a project on some phase of poison control work, such as development of a

management protocol, an epidemiological study, or development of patient education material.

MD 920 EM06 Research in Emergency Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Debry Houry, MD

Students will participate in various stages of the process of conducting and evaluating Emergency Medicine research. The stages of the processes in which the students participate depend on the status of ongoing projects and may include data collection and entry, patient enrollment, database construction, and exposure to grant writing. Students will work as part of multi-disciplinary research teams within the Department of Emergency Medicine. Students will have the option to participate in the Emergency Medicine elective medical student lectures and skills labs and to attend the weekly lectures of the Residency Program. These learning objectives are knowledge based..

MD 920 EM07 Emergency Ultrasound, 4 credits

Translation Phase, Elective, S/U

Course Director: Sierra Beck, MD

The use of emergency ultrasound is now commonplace in community and academic emergency departments. Focused bedside emergency ultrasound is utilized to diagnose acute life-threatening conditions, to guide procedures, and to help emergency medicine physicians make real-time decisions regarding patient treatment and care. Emergency ultrasound is a goal-directed focused ultrasound examination that answers specific and important clinical questions. The goal of the Emergency Ultrasound Elective is to expose fourth year medical students to the core ultrasound applications used in daily practice by emergency medicine physicians. This elective will allow students to develop hands on skills in image acquisition and bedside interpretation of images. Students will be expected to perform 100 independent ultrasound exams, which will be reviewed for quality and completeness by ultrasound credentialed faculty. Residents and interns are often called upon to perform ultrasound guided procedures and quickly develop competence with the use of ultrasound. This elective will provide medical students with early hands-on exposure to this valuable tool. Students will develop competency in performing FAST, AAA, Cardiac, Biliary, Renal, Thoracic, and Soft tissue/Abscess imaging. Students will also be exposed to more advanced emergency ultrasound applications including ocular, advanced cardiac, DVT, testicular, and procedural applications. During this rotation, students will spend their mornings performing self-directed learning activities and completing online didactic modules. In the afternoons students will perform supervised scanning shifts with residents and ultrasound faculty.

MD 920 FP02 Family Medicine Preceptorship, 4 credits

Translation Phase, Elective, S/U

Course Director: Samantha Brown-Parks, MD

Students spend two weeks on the inpatient service and two weeks in the outpatient residency clinic. During the inpatient phase, there will be one night of call per week, with one of them being a weekend call. The medical students are responsible for attending and participating in morning report, including making presentations themselves, when appropriate. Students are expected to attend weekly didactic sessions and to give one presentation at didactics during the rotation. During the outpatient phase, students will provide care to patients being seen in the ambulatory clinic. They will attend conferences before and after each clinic session. Students must be able to provide their own transportation. Students work with faculty attendings and residents as members of the medical care teams during the four week rotations. Students are expected to improve their proficiency in caring for patients with the most common outpatient and inpatient diagnoses. They will provide care throughout the full spectrum of family medicine.

MD 920 G001 Gynecologic Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Namita Khanna, MD

Students will be assigned to the Gynecology and Gynecologic Oncology Service at Emory University Hospital and will serve as an extern on the service. This will involve full participation in the clinical care of patients on the wards and in the operating room. The level of participation will coincide with the level of skill of the student. There will be supervision during this time for the student and the student will be expected to attend all clinical conferences relating to Gynecologic Oncology.

MD 920 G002 High Risk OB, 4 credits

Translation Phase, Elective, S/U

Course Director: Michael Lindsay, MD

Students will be assigned to the antepartum High-Risk Obstetric inpatient ward, the Obstetric Outpatient Clinics and the Regional Perinatal Center. In the inpatient area the student will perform the hospital admission work-up. Review the medical record as it relates to past medical problems and the course of the present pregnancy, especially as the laboratory data relates to the status of the patient. Plan a further diagnostic and therapeutic approach. Read the basic textbook and some of the current literature which pertains to the patient's problem. Present the patient to the faculty attending during morning teaching rounds. Record the faculty attending consultation note in the medical record. In the outpatient area the student will perform return prenatal visit examinations under the supervision of the residents and MFM fellows. Observe the faculty clinic consultant during initial evaluation of high-risk patients. In the Emory Regional Perinatal Center the student will observe antepartum electronic fetal heart rate testing.

MD 920 G003 Labor & Delivery, 4 credits

Translation Phase, Elective, S/U

Course Director: Michael Lindsay, MD

Students will be assigned to Labor and Delivery at Grady Memorial Hospital. The student will be asked to see patients presenting in the labor and delivery area, review the medical record, examine the patient, evaluate the patient's problems, and present a plan of treatment to the resident. The student will follow both normal and complicated patients in labor under supervision of the resident. The student will perform uncomplicated vaginal deliveries under the supervision of the resident, as well as assist the resident in complicated cases. The student will present cases to the faculty attending during morning teaching rounds and record the consultation note in the medical record. The student will attend regularly scheduled weekly departmental teaching conferences which pertain to obstetrics. The student will meet regularly with the course director or assistant course director.

MD 920 G005 Reproductive Endo & Infertility, 4 credits

Translation Phase, Elective, S/U

Course Director: Jessica Spencer, MD

During this elective, students will participate in all clinical aspects of the reproductive endocrinology and infertility (REI) division. This includes attending clinic at the Emory Reproductive Center (ERC) at Emory University Hospital Midtown on a daily basis. While the clinic primarily focuses on infertility treatments, patients are also seen with Mullerian anomalies, sex chromosome aberrations, and endocrine abnormalities (PCOS, pituitary adenomas, thyroid disease, adrenal disease, menopausal symptoms). Opportunities to attend reproductive surgeries in the EUHM operating room and in vitro fertilization (IVF) procedures are also available. The student will be supervised by the attending in clinic and may observe procedures with the REI fellow or resident on rotation.

MD 920 G006 Female Pelvic Med and Reconstructive Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Deborah R. Karp, MD

This elective is designed for 4th year medical students to learn more about Urogynecologic conditions of the female pelvic floor and those who are interested in pursuing further training in surgical subspecialties such as Gynecology & Obstetrics, Urology, General Surgery and other related fields within Female Pelvic Health. The student trains as an integral member of the Female Pelvic Medicine & Reconstructive Surgery (FPM&RS) team at Emory University Hospital and Emory Clinic. The medical student participates heavily in FPM&RS clinics including in pre-operative evaluations, completion of History and Physical examinations particular to patients with pelvic floor defects, urinary and fecal incontinence, and other Urogynecologic disorders. The student will learn non-surgical and surgical management treatments for these patients. The student participates in surgery with division faculty, participates in Urogynecologic inpatient consults, and rounds on post-operative patients on the service.

MD 920 G007 General OB/GYN, 4 credits

Translation Phase, Elective, S/U

Course Director: Jessica Arluck, MD

The student will spend time with Emory General OB/GYN faculty and residents. The student will get to know what a Generalist OB/GYN position is like. They will mainly spend time in the outpatient setting in a office setting, seeing patients alongside a faculty member. Opportunities are available to follow a faculty member to the operating room and to round on patients in the hospital. Opportunities can be made available to spend time with the residents on labor and delivery at both EUHM and at Grady Memorial Hospital.

MD 920 C001 Cardiology (Harvey), 4 credits

Translation Phase, Elective, S/U

Course Director: Joel M. Felner, MD

The student will spend time with Emory General OB/GYN faculty and residents. The student will get to know what a Generalist OB/GYN position is like. They will mainly spend time in the outpatient setting in a office setting, seeing patients alongside a faculty member. Opportunities are available to follow a faculty member to the operating room and to round on patients in the hospital. Opportunities can be made available to spend time with the residents on labor and delivery at both EUHM and at Grady Memorial Hospital.

MD 920 C002 Cardiology (VA), 4 credits

Translation Phase, Elective, S/U

Course Director: Andro Kacharava, MD

The student will participate in patient care activities in the areas of the outpatient clinic, CCU, consultations, echocardiography, nuclear cardiac studies including stress testing and cardiac catheterization laboratory. In all instances, the students' activities will be directed in accomplishing the goals of this elective. The student will attend and participate in weekly conferences (patient presentations and/or literature reviews). The specific format will be outlined at the beginning of the elective for each student based on her/his preference and needs.

MD 920 C004 Cardiology (Piedmont), 4 credits

Translation Phase, Elective, S/U

Course Director: Joseph Miller, MD

A one on one experience with faculty supervision in clinical cardiology in the setting of a large Atlanta community/tertiary hospital. Auscultation, cardiac anatomy and physiology, analysis of clinical data, electrocardiography, cardiac catheterization and intervention, echocardiography, and management are emphasized. A mix of in and outpatients are seen together. Brief exposure to cardiac surgery will be available. Depending on specific interests other opportunities are available including exposure to heart failure, preventive cardiology, cardiac rehab, and exercise testing. Student will

choose topic of interest and report researched findings to site director the last day of rotation.

MD 920 C05 Preventative Cardiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Laurence Sperling, MD

In this elective, the student will be working in an outpatient office practice setting. Our practice is billed as Preventative and General Cardiology. The patient we see fall in the spectrum of those who have no cardiac problems and are interested in lowering their risk of future problems to those with established cardiac problems of a variety of types. We have four attending cardiologists in our group and there is an opportunity to work with all of us. We offer in-office ECG, echocardiography, ECG treadmill stress testing, and stress echocardiography. Our physician staff also serves as the Director of the cardiac rehabilitation program at Emory. There is a large gym on the top floor of our building where we hold our cardiac rehab sessions. We are fortunate to have a great staff of exercise physiologists with whom you will have the opportunity to work in hands-on cardiac rehab experience.

MD 920 C006 Cardiology (Northside), 4 credits

Translation Phase, Elective, S/U

Course Director: Michael Balk, MD

The student will see patients with heart disease in the hospital and in the office. Improve clinical skills, diagnosis, cardiac exam, therapy and clinical management. Learn to read the electrocardiograph, and experience acute cardiac catheterization and exposure to echocardiogram, CTA.

MD 920 C008 Coronary Care Unit (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: Anurag Sahu, MD

The Cardiovascular Care Units (CCU) consists of the ICU units on 3G and 4G. The 14 bed intensive care unit is designed for the care of patients with acute cardiac disorders requiring intensive monitoring and nursing support. The CCU team is a multidisciplinary team which includes a cardiovascular disease attending physician, a cardiovascular disease fellow, internal medicine house officers, and allied health professionals. The attending and fellow will lead multidisciplinary patient management rounds at least once daily beginning at 8:30 am with the housestaff and mid-level providers. Formal teaching at the bedside occurs daily during these rounds. The typical day for medical residents and students is: Morning Pre-Rounds 7:00 am-8:30 am. Attending Rounds 8:30am -12:00 pm. Mandatory CCU Lecture series (M,W,F) 12:30pm-1:30pm. ECG Lecture (Tuesday afternoons only) 4:30pm-5:30pm. Afternoon Work/Admissions/Transfers 1:30 pm - 6:30pm. Sign-out rounds 6:30pm-7:00pm. Medical students will be expected to work a 5 day work week (Monday-Friday).

MD 920 CO09 Women's Heart Clinic, 4 credits

Translation Phase, Elective, S/U

Course Director: Susmita Parashar, MD

Emory Women's Heart Program provides cardiac risk assessment, diagnosis and heart disease care through a women-focused approach to cardiovascular care. Our goal is to help women prevent heart disease and improve cardiovascular outcomes through the highest quality patient and family-centered care, research and education. Emory Women's Heart Clinic consists of outpatient cardiology clinics. Our multi-disciplinary team includes female and male cardiologists, female nurse practitioners, nurses, nutritionist, exercise physiologists and a full-range of specialists. We provide counseling on weight loss, exercise programs, diet, and other lifestyle changes to help treat and reduce risk of heart disease in women. We help women understand how stress, obesity, depression, and menopause may impact their heart. The attending and/or fellow and resident lead multidisciplinary patient care in an outpatient cardiology setting. Clinics are held on Thursdays and Fridays and begin at 8.30 or 9 AM. Typically, the clinic ends at 5 or 530 PM.

MD 920 CO10 Hurst Cardiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Byron Robinson Williams III, MD

This is a general cardiology elective centered on the Hurst inpatient cardiology service at Emory University Hospital. The medical student will be part of the team which is comprised of an attending cardiologist, a cardiology fellow and three internal medicine interns. On the Hurst service, the medical student will be exposed to a wide variety of cardiac disease, including acute coronary syndromes including ST elevation MI's, congestive heart failure, arrhythmias, valvular disease, hypertrophic cardiomyopathy and many others. In addition to helping care for inpatients, the medical student will also have direct exposure to multiple aspects of cardiology including cardiac catheterization and coronary interventions, echocardiography, stress testing, cardiac MRI, EKG's, and cardiac electrophysiology procedures (cardioversions, ICD and pacemaker implants). The medical student will also attend a half day of general cardiology clinic with either Dr. Williams or Dr. Gerald McGorisk. There are also multiple teaching conferences for the medical student including cardiology morning report with Dr. Doug Morris, cardiovascular grand rounds on Monday and Friday mornings, internal medicine noon conference, including internal medicine grand rounds on Tuesdays. There will be a weekly student-centered teaching session with Dr. Williams and/or McGorisk. The teaching will center on EKG's and the cardiac physical exam.

MD 920 CO11 Outpatient Clinical Cardiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Gina Lundberg, MD

This elective will allow the senior student to participate in an outpatient setting in a busy cardiology practice. The student will be involved in the evaluation of new patients and consultations, including history and physical examinations and discussion of acceptable methods of diagnosis and treatment. Cardiovascular assessment, diagnosis and treatment are emphasized. Hyperlipidemia management and genomics are a special focus. The student will be involved with exercise stress treadmill testing, Echoes, EKGs, Holter monitoring and event recordings, which are reviewed daily; as well as weekly Nuclear Stress Thallium testing. The student will also have exposure to MDCT for the early diagnosis of CAD and CTA.

MD 920 DD01 Digestive Diseases (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: Frank A. Anania, MD

The student will participate in the clinical services provided by the digestive disease team at Emory University Hospital. The team consists of an attending physician, one to two GI fellows, and one to two medical residents. The team will cover both GI inpatient service and consultation service to the hospital. The student will be responsible for responding to a consultation request or inpatient admission by performing a history and physical on the patient, and evaluating the initial laboratory and radiological test results. The student will then present the patient to the team on round and help formulate a list of differential diagnosis and plan diagnostic and therapeutic approaches. Following the initial consultation or admission, the student is responsible for tracking the progress including writing a progress on the patient on a daily basis until the patient is discharged. The student will be able to observe endoscopic procedures performed on the patient for clinical correlation. The student will attend several weekly conferences including GI Grand Rounds, didactic lecture series, and radiology and pathology rounds. The student will read basic GI text book and some current GI literature pertinent to the patient he or she is following. On occasions, the student may be asked to provide informal presentations on literature findings related to the case.

MD 920 DD02 Digestive Diseases (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Robert Cohen, MD

The student will participate in the clinical services provided by the digestive team at Grady Memorial Hospital. The team consists of attending physicians, one to two GI fellows, and one to two medical residents. The team will cover both GI inpatient service and consultation service to the hospital. The student will be responsible for responding to a consultation request or inpatient admission by performing a history and physical on the patient, and evaluating the initial laboratory and radiological test results. The student will then present the patient to the team on round and help formulate a list of differential diagnosis and plan diagnostic and therapeutic approaches. Following the initial consultation or admission, the student is responsible

for tracking the progress including writing a progress note on the patient on a daily basis until the patient is discharged. The student will be able to observe endoscopic procedures performed on the patient for clinical correlation. The student will attend several weekly conferences including GI Grand Rounds, didactic lecture series, radiology, and pathology rounds. The student will read basic GI textbook and some current GI literature pertinent to the patient he/she is following. On occasions, the student may be asked to provide informal presentations on literature findings related to the case.

MD 920 E01 Endocrinology & Diabetes, 4 credits

Translation Phase, Elective, S/U

Course Director: Guillermo Umpierrez, MD

Students will participate in outpatient and inpatient consultations of endocrine and diabetic patients in one of the three main hospitals. Students will initially see the patient, review the history, physical examination, and laboratory data, formulate and assess problems, and plan a diagnostic and therapeutic approach. He/she will then present that patient to the attending and write a consultant note. In addition, the student will be expected to read both basic text and some of the current literature pertinent to the patient. He/she may be asked to present at the Endocrine and Metabolic conferences. The students will attend 3 to 5 weekly diabetes, endocrine and journal club didactic lectures at different hospitals. In addition, students will have the opportunity to learn and be involved in different clinical research programs. The student will meet daily with endocrinology fellows and faculty members.

MD 920 GM02 Primary Care (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Danielle Jones, MD

4 weeks of outpatient primary care and Internal Medicine specialties. Student will be responsible for the initial evaluation and management of the patient in supervised clinical setting. Settings include cardiology, rheumatology, asthma, endocrinology, primary care center, women's clinic, etc. Primarily based at Grady Memorial Hospital with opportunity to rotate at Emory primary care clinic if requested.

MD 920 GM04 Consult/Peri-Op Med Svc, 4 credits

Translation Phase, Elective, S/U

Course Director: Maged Doss, MD

The medicine consult rotation provides the opportunity to work with other disciplines in the hospital to manage medical issues such as diabetes, hypertension, preoperative evaluation, and peri-operative care. In addition to learning to manage the above issues, the student will also learn how to appropriately provide a consult and work with the primary team in a consultant role.

MD 920 GM05 Service & Advocacy in Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Maura George, MD

A physician's role in his or her community extends beyond individual patient care and identifying and treating illnesses. The social determinants of health are the conditions in which people are born, grow, live, work and age and research supports the fact that many social determinants are at the root of individuals and communities health and well-being. Our elective helps students look beyond their current training in disease pathophysiology, diagnosis, and treatment and exposes them to the multiple complex factors that are at the root of our patients' health and well-being. Our curriculum will use a combination of didactic lectures, experiential learning, direct service activities and personal reflection to equip future physicians to practice medicine in a socially complex world. We will help students better understand and cooperatively address the problems facing our patients and communities. Participants will also complete a scholarly activity that directly benefits our community.

MD 920 GM06 Patient-Centered Medical Home, 4 credits

Translation Phase, Elective, S/U

Course Director: Jason Higdon, MD

A one month elective for residents and medical students interested in learning more about transforming the medical experience for patients and staff by using the Patient Centered Medical Home model. Select trainees will spend the month at Emory Patient Centered Primary Care, a level 3 NCQA recognized medical home. During this time, trainees will focus on: learning the literature around PCMH and care transformation, understanding team based care by spending time with different team members, exploring patient centered care by working with the patient family advisory committee, understanding the business of medicine through attendance of regular operations meetings and exploring alternative reimbursement structures, and learning the concepts of population management, quality improvement and care coordination. Trainees will deliver direct patient care, but this will not be the emphasis of the rotation.

MD 920 HO01 Hematology & Sickle Cell, 4 credits

Translation Phase, Elective, S/U

Course Director: Morgan McLemore, MD

The medical student will be part of a Hematology Consultation Service consisting of an attending physician, fellows and one or two residents (PGY 2 & 3). Additional team members include nurse clinicians, social workers and physician assistants. The medical student will participate in daily hematology rounds, a multidisciplinary conference per week, new patient and follow-up hematology and a sickle cell clinic. The student will initially be asked to observe and become familiar with the clinical setting and flow. Students will be asked to initially see a patient; review the history, physical examination and laboratory data; formulate and assess problems and plan a diagnostic

and therapeutic approach. He/she will then present the patient to the fellow or resident and participate in the fellow or resident's writing of their consultant note. The new patients and follow-ups will be presented to the attending daily. The student will attend Hematology Clinic on Tuesday mornings and Sickle Cell Health Maintenance clinic on Wednesday or Thursday.

MD 920 H002 Hematology (VA), 4 credits

Translation Phase, Elective, S/U

Course Director: Maria Ribeiro, MD

This rotation was designed as part of the hematology/oncology rotation at the Atlanta VAMC. It combines well balanced inpatient and outpatient patient assessment under direct supervision of the attending physicians assigned to teach in both settings. The teaching is incorporated to the requirements for anatomy, histology, cytology, physiology, physiopathology, pharmacology, clinical presentation and physical findings and treatment of most common hematological and oncologic conditions. The student is required to report to multidisciplinary conferences at 8A Mondays, hematology reviews Tuesday at 8A, Hematology/Oncology Grand Rounds (Winship) Wed 7:30A, Hematology/Oncology Fellowship review Lectures (Winship) Thursdays, Journal Club Fridays at 8A, Tumor Board on Mondays at 12PM, Head and Neck multidisciplinary case discussions on Thursday at 4PM. In addition, the student is expected to attend the Medicine Core lectures and noon conferences at the VA. There are also individual and group sessions for hematopathology reviews, about 2 hours per week. The student is expected to evaluate patients in clinic under direct supervision of residents, fellows and attending physicians as scheduled and they are expected to follow 2 inpatient consult patients and write a student note on the medical records.

MD 920 H003 Hematology (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: Jean Khoury, MD

Students rotating on the Hematology Service will be exposed to hospital-based consultative Hematology (2 weeks on the Hematology Consult Service) and acute non-transplant management of patients with hematologic malignancies (2 weeks on the inpatient Leukemia unit). Students will also have the opportunity to perform bone marrow biopsies and lumbar punctures.

MD 920 H004 Pediatric and Adult Hemoglobin Disorders, 4 credits

Translation Phase, Elective, S/U

Course Director: Yih-Ming Yang, MD

This is a 4-week course to provide medical students with rich clinical experiences in Pediatric and Adult Hemoglobin Disorders through participating patient care activities under direct supervision, and exposure to clinical and laboratory research, to achieve the following educational goals: To know the fundamental aspects of red blood cells, hemoglobin structure and function. To comprehend the clinical spectrums of sickle cell

disease, thalassemias, and other hemoglobin disorders. To understand the principles of diagnostic approach to anemia, and suspected hemoglobin disorders and apply diagnostic studies appropriately. To appropriately apply therapeutic options for patients with sickle cell disease, thalassemias and other hemoglobin disorders, in general, and common complications associated with sickle cell disease and thalassemias. To understand the value of multi-disciplinary team approaches to the management of patients with sickle cell disease and thalassemias. To update the current research trend and methods in sickle cell disease and thalassemias.

MD 920 HO05 Medical Oncology (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Ruth O'Regan, MD

Extensive experience will be provided in both the inpatient and outpatient setting working with patients with hematologic and/or oncologic disorders. Emphasis will be placed on the diagnostic workup, staging and consideration of treatment options that may include chemotherapy, radiation, or palliative care. There will also be follow-up of patients with solid tumors as well as chronic hematologic disorders. Students will be assigned 2-3 patients per week for work-up and discussion with the preceptor. The student will learn how to present a patient, if not already known, and will be expected to give differential diagnoses. Students will also be exposed to palliative care and learn about its role in the treatment of patients with malignancies.

MD 920 ID02 Infectious Diseases (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will be asked to perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference.

MD 920 ID03 Infectious Diseases (VA), 4 credits

Translation Phase, Elective, S/U

Course Director: David Rimland, MD

Students will be asked to initially see the patient; review the history, physical examination and laboratory data; formulate and assess problems and plan a diagnostic and therapeutic approach. He/she will then present the patient to the attending and write a consultant note. In addition, the student will be expected to read both the basic text and some of the current literature pertinent to the patient. Finally, he/she may be

asked to present at the infectious diseases conferences. There is a weekly seminar on basic processes in infectious diseases and a case of the week conference that the student will be required to attend. Furthermore, he/she will meet weekly with individual faculty members for informal discussions as well as having informal laboratory sessions in the diagnostic microbiology laboratory.

MD 920 ID04 Infectious Diseases (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will be asked to perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference.

MD 920 ID05 Infectious Diseases (Emory Midtown), 4 credits

Translation Phase, Elective, S/U

Course Director: Molly Eaton, MD

Students work with members of the Infectious Diseases division in their outpatient clinics. They will encounter all stages of HIV infection, post-hospital Infectious Diseases follow-up patients, and outpatient consults.

MD 920 ID06 HIV Infections, Outpatient, 4 credits

Translation Phase, Elective, S/U

Course Director: Minh Ly T Nguyen, MD

The elective is based at the Grady ID Program located at the Ponce de Leon Center. The clinic provides comprehensive primary care to approximately 5000 HIV-infected patients. The principal goal of this elective is to provide students with an appreciation of the complexity of the care of HIV-infected patients as well as provide basic knowledge in the management of HIV-infected patients. In the first 2 weeks, the student will spend time with the preceptor to discuss the pathophysiology of HIV infection, mechanisms of action of antiretrovirals, the rationale for their choice in HIV treatment, as well as diagnosis and management of opportunistic infections and comorbid illnesses. The student will be assigned reading on those topics to enhance the discussion. During that time, he/she will be shadowing the preceptor in the evaluation of clinic patients, as well as rotating through different subspecialty clinics such as Oral Health Center, Psychiatry, Hepatitis, Lipids and Dermatology, with an opportunity to interact with different providers during the rotation. Once students are

familiarized with the complex aspect of HIV care, they will have an opportunity to assess and present patients to the preceptor.

MD 920 ID08 Infectious Disease Consults, 4 credits

Translation Phase, Elective, S/U

Course Director: Wendy Armstrong, MD

Students will be asked to perform an initial evaluation of the patient including review of the history, physical examination, and laboratory data. The student should create a problem list, assess the problems, formulate a differential diagnosis and plan a diagnostic and therapeutic approach. The student will then present the patient to the attending physician and should write a consult note for critique by the attending physician. In addition, the student will be expected to read both basic text information and some current literature pertinent to the patient's signs, symptoms, or diagnosis. Finally, the student may be asked to present a case at the Infectious Disease Housestaff Conference. The student should attend the weekly Case of the Week (COW) Clinical Infectious Disease conference and may attend the weekly core curriculum lecture. The student should attend the Infectious Disease Research Seminar.

MD 920 NE02 Neurology Elective, 4 credits

Translation Phase, Elective, S/U

Course Director: Jaffar Khan, MD

Assignments within the Department for specific mentoring and for the amount of clinical and laboratory time is based on an interview with each student with the Course director. We wish to learn about the student interests in order to optimally utilize this time and produce a good, productive student activity match.

MD 920 NI03 Nephrology, 4 credits

Translation Phase, Elective, S/U

Course Director: James Lynch Bailey, MD

The student will meet each morning to make patient rounds in the hospital with the Nephrology attending, the resident and renal fellow. Patients from the consultation service will be assigned for the student to work-up, present, and follow on a daily basis. Following the performance of a history and physical examination on these patients, reviewing laboratory, x-rays, and other ancillary data, the student presents these patients to the renal attending and examines the urine with the renal attending and other members of the consult service. Following a discussion, the student fills out a consultation form, recording this information with differential diagnoses and the recommendations of the renal service. Following the initial consultation and review with the attending, the student is expected to follow these patients hospital course to document their diagnostic and therapeutic responses and in conjunction with the attending to make further recommendations for diagnosis and care. It is expected that the medical student will work-up two to three new patients a week. Sites that are available include Emory University Hospital, Emory Midtown Hospital (Crawford-Long),

and Veterans Affairs Hospital. Depending on the medical students and attending faculty members' schedules the medical student could also attend and participate in the outpatient work-up of patients with renal disease.

MD 920 NIM05 Transplant Medicine (Kidney and Liver), 4 credits

Translation Phase, Elective, S/U

Course Director: Sudha Tata, MD

The purpose of this elective is to introduce the medical student to transplant medicine, specifically as it relates to liver and kidney disease. Students will be exposed to the comprehensive management of patients high on the transplant list and in the intensive care setting with complications of end stage liver disease and kidney disease. Students will gain experience from inpatient rounds and outpatient clinics which include the care of pre and post-transplant patients. Students will also be exposed to procedures related to transplant medicine including but not limited to liver and kidney biopsies, EGD (diagnosis, variceal bleeding and control), colonoscopies (colon cancer screening) and transplant surgeries. Finally, the ethical considerations relating to transplant and the psychosocial evaluation of transplant patients will also be highlighted. Students will also have the opportunity to learn about immunosuppression and the long term medical management of transplant recipients.

MD 920 PD01 Medical Intensive Care Unit (MICU), 4 credits

Translation Phase, Elective, S/U

Course Director: Greg Martin, MD

This rotation integrates the fourth year medical student into an active medical intensive care environment as they join one of four teams providing care to patients in the medical and coronary intensive care units at Grady Memorial Hospital. The student serves as an integral part of the MICU team, sharing responsibility with the PGY-1 intern for primary patient care, as supervised by senior resident, a post-graduate fellow in critical care, and critical care attending physician. The rotation offers both exceptional autonomy and supervision of direct patient care, where the medical student will be responsible for evaluation of patients admitted to the MICU service from the general wards and the Emergency Department, for generating differential diagnoses and therapeutic plans, and for performing necessary intensive care procedures (supervised) as part of patient care.

MD 920 PD03 Pulmonary Diseases, 4 credits

Translation Phase, Elective, S/U

Course Director: David Alexander Schulman, MD

The student will evaluate patients with pulmonary problems along with a Pulmonary Attending physician. These evaluations will include opportunities for the student to take the primary history and physical exam from patients, review pertinent lab and radiographic studies, and form an initial diagnostic and therapeutic plan. The attending will then review this data with the student and formally complete the consultation

process. Students will also have opportunities to directly observe a variety of pulmonary procedures including bronchoscopy, thoracentesis, chest tube placement, and pulmonary function studies.

MD 920 PD04 Pulmonary Diseases (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Greg Martin, MD

This elective includes supervised clinical experience and didactic teaching from post-graduate trainees (i.e. fellows) and attending physicians in the field of pulmonary diseases. The elective is a combination of supervised and independent clinical experience, with medical students generally serving as the first line evaluation of non-emergent inpatient pulmonary consults. After their initial evaluation of the patient, a standard presentation of the case is followed by review of relevant radiographic and physiologic (e.g. pulmonary function) studies, culminating in the differential diagnosis and discussion of the diagnostic and therapeutic approaches.

MD 920 PD07 Medical Intensive Care Unit (MICU) (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: David Alexander Schulman, MD

The student will play an integral role in the medical intensive care unit team at Emory University Hospital. Other team members include four senior residents, nurse practitioners, physicians' assistants and one of the pulmonary/critical care faculty. The student will be responsible for the evaluation and the management of one to two critically ill patients each day. The student will attend teaching rounds beginning at 8:30 each morning and will thereafter attend work rounds, during which he/she will be expected to present the patients for which he/she is responsible. Commonly seen pathology on this rotation includes shock (septic and cardiogenic) respiratory failure (frequently requiring ventilator management), hepatic failure, derangements in fluid status and electrolytes.

MD 920 R01 Rheumatology-Immunology, 4 credits

Translation Phase, Elective, S/U

Course Director: Sung Sam Lim, MD

Students will attend the outpatient rheumatology clinics held on Monday from 9:00am - 12:00pm & 1:00pm - 4:00pm & Thursday from 9:00am - 12:00pm. Lupus clinic is Tuesday from 9:00am - 12:00pm & 1:00pm - 3:00pm. They will interact with several attending, fellows, and residents. Students will observe a fellow or resident during patient evaluation and presentation to a faculty member who will subsequently interview and examine the patient. Students will have the opportunity to be part of the inpatient consultations working with the rheumatology fellow. The case will be presented to the faculty and discussed in detail with opportunities for questions. There will be suggestions for follow up articles from a variety of medical journals or other

data that will provide greater knowledge and understanding of auto immune and other diseases.

MD 920 NE07 Advanced Neuro: Sleep Disorders, 4 credits

Translation Phase, Elective, S/U

Course Director: Lynn Marie Trotti, MD

Students will spend 4 weeks learning about the principles and practice of sleep medicine. The majority of time will be spent in the multidisciplinary sleep clinics (neurology, pulmonary, pediatrics, dentistry). During clinic time, students will gain skills at performing a sleep history and physical exam and learn management options for common sleep disorders. Students will also get hands-on experience in the interpretation of in-laboratory sleep studies (diagnostic, CPAP titration, and multiple sleep latency tests), with a focus on identifying sleep stages and key pathological events (e.g., apneas, periodic limb movements).

MD 920 O01 Ophthalmology, 4 credits

Translation Phase, Elective, S/U

Course Director: Emily Graubart, MD

The student will have assigned weeks of rotation at the primary clinical setting of the department. If the rotation is two weeks in duration (for Emory students only), the student will spend one week at Grady Memorial Hospital and one week at the VA Medical Center. If the rotation is four weeks in duration, the student will spend two weeks at Grady Memorial Hospital and two weeks at the VA Medical Center. In addition, time may be spent observing in certain subspecialty clinics or working with tutorials in ocular pathology at the Emory Eye Center. There will be opportunities to observe ophthalmic surgery at Grady Hospital and the VA Medical Center. It is expected of the student that he/she read independently from assorted texts available during the course of the elective. In addition, the student is expected to attend all didactic sessions possible. The student will be supervised by Drs. Geoffrey Broocker and Paul Pruett at Grady Hospital and Drs. Steve Urken, Purnima Patel, and David Paine at the VA Medical Center.

MD 920 AWAY Elective-Away, 4 credits

Translation Phase, Elective, S/U

Students may choose to do an elective outside of Emory. The majority of the away elective experiences can be applied through the American Association of Medical Colleges Visiting Student Application Service (VSAS). Students may begin to apply for away electives in March following their Applications Phase.

MD 920 SPEC Elective-Special, 4 credits

Translation Phase, Elective, S/U

If students have an interest in an area where there is no elective offering, they can create a unique experience with a faculty preceptor. The interested student will

complete a special elective proposal, signed by the preceptor, with the description and objectives of the intended experience. This must be submitted to the Office of Clinical Education 90 days in advance of the start date. Approval by the Associate Dean of Clinical Education is required before the elective commences. International experiences are eligible for consideration as a special elective.

MD 920 RSCH Elective-Research, 4 credits

Translation Phase, Elective, S/U

Students, who have a particular interest in research, may fulfill no more than one elective during the Translation Phase by participating in a research project. The interested student will complete a research proposal, signed by the research mentor, with the description and objectives of the intended experience. This must be submitted to the Office of Clinical Education 90 days in advance of the start date. Approval by the Associate Dean of Clinical Education is required before the research commences.

MD 920 OS02 Orthopaedic Externship, 4 credits

Translation Phase, Elective, S/U

Course Director: Thomas Moore, MD

Two weeks at Grady - Ortho trauma. Two weeks at either Emory Ortho Hospital or Emory University Hospital-Midtown. At both hospitals, both operative and clinic responsibilities. Assigned reading. Written test at end of rotation

MD 920 OS04 Sports Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: John W. Xerogeanes, MD

This is a clinical based elective for students not going in to orthopaedics. They will work in the clinic as a primary clinician evaluating new, return and post-operative patients. They will go over each patient with the attending and have true hands on "on the job" learning experience. During the elective they will have the opportunity to scrub in the operating room (operating room participation is optional).

MD 920 P01 Psychiatry - VAMC, 4 credits

Translation Phase, Elective, S/U

Course Director: Janet Will, MD

Student will be exposed to a variety of psychological illnesses including Mood Disorder, Thought Disorders, and Anxiety Disorders including Post-Traumatic Stress Disorder in veterans, Substance Abuse Disorders, Personality Disorders, and Medical Conditions contributing to psychological disorders. The student will shadow an attending or third year psychiatry resident and increase in their skill of interviewing, determining differential diagnosis, and treatment of psychiatric illnesses. They will learn medication management in addition to psychotherapy techniques.

MD 920 P02 Psychiatry Subinternship (Grady) Milieu Unit, 4 credits

Translation Phase, Elective, S/U

Course Director: Robert O. Cotes, MD

Students will work on the 13A inpatient unit largely functioning as an intern under the supervision of the attending psychiatrist and chief resident. The focus is on the in-depth, evidence-based treatment of patients with serious mental illness. Equal emphasis will be placed on psychopharmacological and psychosocial interventions. The M4 will give clinical presentations and develop diagnoses, will be expected to participate actively in all didactic activities, and to do basic readings in the area of their elective.

MD 920 P06 Medical Psychiatry Unit, 4 credits

Translation Phase, Elective, S/U

Course Director: Steven Garlow, MD

The Emory Medical Psychiatry unit is a voluntary psychiatry unit that admits patients with a variety of behavioral problems. The unit is unique in Atlanta because of its ability to manage complex medical and neurologic problems while meeting patients' behavioral health needs. Students in this elective will act as Junior Psychiatry residents, independently managing a panel of patients and directly responsible to the Chief Resident and attending physician.

MD 920 P09 Psych Med Practice/Psychiatry Consults, 4 credits

Translation Phase, Elective, S/U

Course Director: Raymond Young, MD

This elective serves to those medical students who may have a strong interest in pursuing a career in psychiatry and more specifically in the subspecialty field of consultation liaison psychiatry or psychosomatic medicine. Over the 4 week period, the medical student will have opportunities to serve as consultation to inpatient medical and surgical patients at Emory University Hospital and the Center for Rehabilitation Medicine Hospital. They will learn to interview and evaluate a wide variety of patient populations including patients with delirium, dementia, affective disorders, anxiety disorders, somatoform disorders, substance abuse, and psychotic disorders. They will learn to properly assess medical decision making capacity. They will also have the opportunity to evaluate patients as candidates for heart, liver, and lung transplants.

MD 920 P11 HIV Psychiatric Services, 4 credits

Translation Phase, Elective, S/U

Course Director: Sanjay Sharma, MD

Elective is formally titled: Psychiatry: HIV/Aids Mental Health/Substance Abuse Treatment Services and takes place at the Grady Infectious Disease Clinic at 341 Ponce de Leon Ave. Elective allows students to primarily experience the evaluation, treatment, and management of individuals with HIV/AIDS + comorbid mental health

and substance use issues/illnesses and engage with various members of the treatment team, with diverse backgrounds and clinical skills, in providing these services. Through this elective, the student will have the opportunity to develop clinical skills, including problem solving, diagnosis, treatment planning, etc., important in working with patients. Primary student responsibility will include observed/supervised patient interactions and engaging in the diagnosis and treatment recommendation process + the student will have individual supervision and teaching sessions with clinic attending's throughout the rotation.

MD 920 P12 Intro to Criminal & Civil Forensic Psychiatry, 4 credits

Translation Phase, Elective, S/U

Course Director: Julie Rand, MD

This forensic elective gives students exposure to the criminal and civil aspects of forensic psychiatry. The criminal aspects of forensics studied will include assessment of competency to stand trial, criminal responsibility (insanity defense evaluations), assessments for civil commitment and dangerousness, and treatment of defendants in a jail setting. The student will have exposure to these defendants at the local jails and state hospital forensic units. The civil aspects of forensics studied will include review of medical malpractice cases (i.e. cases that cover issues such as informed consent, right to refuse treatment, suicide, polypharmacy, false imprisonment), review of issues related to mental health discrimination and workers' compensation. There is also exposure to evaluations for capacity (dementia) and child custody. This elective gives the student exposure and experience in the courtroom and contact with courtroom personnel, including lawyers and judges.

MD 920 P23 Combined Internal Medicine and Psychiatry Elective, 4 credits

Translation Phase, Elective, S/U

Course Director: Kellie Clearo, MD

The elective weeks will be divided up between our two outpatient medicine-psychiatry clinics at Grady and the inpatient consult-liaison services at both Grady and Emory University Hospital.

MD 920 PA01 Pathology, 4 credits

Translation Phase, Elective, S/U

Course Director: Jeannette Guarner, MD

This elective is designed for medical students considering a career in pathology and for students who wish to learn more about the role of pathology in the care of their patients. The four-week rotation is divided into blocks that cover each of the major aspects of pathology. Anatomic pathology: With the direct assistance of pathology residents and faculty, the rotator will get hands-on experience in gross examination and dissection of surgical specimens, microscopic study of tissue and formulation of pathologic diagnoses. The rotator will have the opportunity to follow specimens from the time they are received in pathology until the time they are officially signed-out.

They will also spend time in the frozen section room. Intraoperative frozen section is an essential part of many surgical procedures. During this consult, the pathologist makes rapid diagnoses of frozen surgical specimens and relays the diagnoses intraoperatively to the surgeon, thus helping to decide the course of therapy. Depending on the type of specimen examined, the pathologist might determine the benign or malignant nature of a given lesion, if the margins of a tumor resection are free of malignancy, etc. During this week, the rotator will learn how the pathologist interacts with clinicians during frozen section consultation, and will be introduced to tissue sectioning, histologic staining, and gross/microscopic diagnosis. Clinical Pathology - This week will be focused primarily on hematopathology labs (2 days) and will touch on highlights from other clinical laboratories including Blood Bank, Microbiology, Molecular Pathology and Coagulation (3 days). In hematopathology, the student will learn how histopathology, flow cytometry molecular diagnostics, and consultation with the oncology service come together in the management of some of Emory's challenging and interesting patients. For the next 3 days the student will be attending different rounds that take place in clinical pathology. In the Blood Bank they will learn about typing and cross matching of specimens, dispensing blood products and how these should be utilized properly. In Microbiology they will learn about specimen collection, handling of the different specimens, and best interpretation of results. In Molecular Pathology the students will learn about the different techniques, their use and interpretation of results. In Coagulation rounds they will learn the use of different panels, their interpretation, and how medications affect results. The student will choose a specific area(s) of interest and spend more time on their choice. They may elect to repeat the first 2 weeks or just focus on anatomic pathology or clinical pathology. For example if a student is interested in Infectious Disease he/she may elect to spend more time in Microbiology and Molecular Pathology, those students interested in surgery may decide to spend these 2 weeks in anatomic pathology and request to be included in autopsy dissections. In short, these 2 weeks will tailor to the student's needs.

MD 920 PA02 Forensic Pathology & Death Investigation, 4 credits

Translation Phase, Elective, S/U

Course Director: Randy Hanzlick, MD

Students participate in daily morning case review meetings, didactic sessions, and afternoon wrap-up case review meetings with staff. They also observe and participate in autopsies and postmortem examinations, as well as death scene investigations when feasible. Students also usually have the opportunity to observe court testimony proffered by medical examiner staff pathologists. In short, the elective serves to provide the student with a basic understanding of forensic pathology and death investigation.

MD 920 PE02 Pediatrics Sub-I Elective, 4 credits

Translation Phase, Elective, S/U

Course Director: Eric Felner, MD

Fourth year students rotating on the general pediatrics inpatient elective at Egleston are expected to function as a sub-intern. There are four general pediatric inpatient teams. Each team is composed of a senior (third-year) resident, one intern, and one to three third year medical students and is overseen by a general pediatrics attending. We allow one fourth year student per team, on up to four teams. The fourth year medical student functions as similarly as possible to an intern with close supervision under the senior resident and attending. Ideally, no team has two interns and a fourth year medical student. Additionally, third year medical students are not permitted to follow patients belonging to the fourth year student, so as to allow the fourth year student complete ownership of his/her patients on the student level. Fourth year students spend four weeks on the same inpatient team. Depending on correspondence with resident and attending rotation blocks, students can expect to have one to two resident teams and one to three attendings over the course of their rotation. Fourth year students take call with their team. There is no overnight call. There is an option to do night float for 3 to 4 nights during the rotation. Each of the four teams rotates on a continuous every fourth day on call schedule. The on call team admits patients arriving before 7pm. Fourth year students can expect to be on short call every fourth day with their team. Fourth year students typically care for two to three patients initially with gradual increase to four to six patients depending on the team's census and the student's capability. The student has opportunities to perform complete admission history and physicals, write orders (with supervision in the EMR), pre-round daily on his/her patients, and present patients on rounds. The student may interact directly with consultants and allied health professionals.

MD 920 PE04 Pediatric Emergency/Urgent Care, 4 credits

Translation Phase, Elective, S/U

Course Director: Mike Ziegler, MD

Introduction to Pediatric Emergency Medicine and Urgent Care.

MD 920 PE05 Pediatric Cardiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Peter Fischbach, MD

The 4-week elective will occur at the Cardiac Step-Down Unit at Children's Healthcare of Atlanta at Egleston. Students will be involved in all aspects of the clinical care provided to patients on the cardiology service including: clinical assessment, formulation of a differential diagnosis, choice and interpretation of appropriate testing, and development of an impression and plan. Students will present their patients during our multidisciplinary rounds and communicate with families and consulting services. Patient load will be maintained at a reasonable level to facilitate self-directed learning and attending didactic sessions.

MD 920 PE06 Pediatric Endocrinology, 4 credits

Translation Phase, Elective, S/U

Course Director: Eric Felner, MD

At the beginning of the course, the student will meet with the faculty member to define individual goals and develop an individualized format. There will be weekly assignments for reading and a weekly tutorial to discuss assigned topics in the fundamentals of Pediatric Endocrinology. The student will observe and participate in the following activities in the course of each week on the service: 1) a referral practice of Pediatric Endocrinology at the Emory Children's Center (ECC); 2) a journal club and interdepartmental endocrine group conference on Monday afternoons; and 3) evaluation and management of inpatients at CHOA-Egleston. Students with an interest in medical research will be invited to participate in the conferences and discussions of a laboratory group with interests in molecular/genetic investigation, disorders of growth, and in the pathogenesis of diabetes. The student will participate in both the outpatient clinic and if the student desires; the inpatient service. The student will interact with residents, fellows, and faculty on service in the care of children with endocrine disorders.

MD 920 PE07 Pediatric Hematology/Oncology/Bone Marrow Transplantation, 4 credits

Translation Phase, Elective, S/U

Course Director: Yih-Ming Yang, MD

This is a 4-week course to provide medical students with rich clinical experiences in Pediatric Hematology/Oncology through participating patient care activities under direct supervision, to achieve the following educational goals: To know the fundamental aspects of red blood cells, white blood cells and coagulation those are relevant to common clinical blood disorders and malignancies in children. To comprehend the clinical spectrums of anemia, neutropenia, thrombocytopenia and bleeding disorders, as well as common childhood cancer. To understand the principles of diagnostic approach to anemia, neutropenia, thrombocytopenia and bleeding problems, and patients suspected having malignancies, and to apply them in clinical settings properly. To acquire the skills of evaluating and managing common blood disorders in children.

MD 920 PE08 Pediatric Infectious Diseases, 4 credits

Translation Phase, Elective, S/U

Course Director: Joseph Hilinski, MD

Students will be members of the inpatient consultation team for a major children's hospital and will actively participate in diagnosis and management of a large variety of infectious diseases. Clinic time in the outpatient ID clinic and in the Pediatric HIV Clinic will be scheduled during the rotation. Students are expected to read deeply about patients encountered and will be provided a case series with background readings to

cover major pediatric infectious diseases. Teaching is performed on the wards and in the clinics. Students attend weekly case conference where they will present their cases to a broad audience of pediatric ID experts. Students are expected to attend the Case of the Week conference and other divisional conferences during the rotation. Literature review for all patients encountered is required. Short didactic presentations on pertinent topics may be assigned.

MD 920 PE09 Medical Genetics, 4 credits

Translation Phase, Elective, S/U

Course Director: Michael Gambello, MD

This elective is for students who wish to broaden their knowledge of the field of Medical Genetics. Since our Division is primarily an outpatient and consultative service, the student will spend most of their time in our outpatient clinics. We have a variety of clinics to allow students to explore the many facets of Medical Genetics. Students will spend time primarily in our General Genetics and Metabolic clinics. There are also opportunities to participate in some of our specialty clinics, including our Down Syndrome clinic, Fragile X clinic, 22q11 Deletion syndrome clinic, Craniofacial clinic, Lysosomal Storage Disease clinic and ophthalmic genetics clinic. Depending on a student's interests, there are opportunities to spend time with our cancer genetics counselors or in one of our clinical laboratories (including clinical cytogenetics, clinical molecular genetics, and clinical biochemical genetics laboratories).

MD 920 PE10 Neonatal/Perinatal Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Susie Buchter, MD

Students will be part of the NICU team which includes pediatric residents at both the PGY-1 and PDY-2 level, a Neonatal Nurse Practitioner, a Neonatology fellow, and the attending neonatologist. In addition to the described conferences, the student will have several patients to follow and present on daily rounds. Overtime, the student will be given patients of increasing complexity. Students will be given the opportunity to acquire experience in caring for the newborn patient and family through the role of an extern with supervised responsibilities. The student will function in the Grady Memorial Hospital NICU over a 4 week period. The duty periods will be largely during the day, but the student is expected to take 2-3 night shifts in order to have additional delivery room and NICU management experience.

MD 920 PE10 Neonatal/Perinatal Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Susie Buchter, MD

Students will be part of the NICU team which includes pediatric residents at both the PGY-1 and PDY-2 level, a Neonatal Nurse Practitioner, a Neonatology fellow, and the attending neonatologist. In addition to the described conferences, the student will have several patients to follow and present on daily rounds. Overtime, the student will be

given patients of increasing complexity. Students will be given the opportunity to acquire experience in caring for the newborn patient and family through the role of an extern with supervised responsibilities. The student will function in the Grady Memorial Hospital NICU over a 4 week period. The duty periods will be largely during the day, but the student is expected to take 2-3 night shifts in order to have additional delivery room and NICU management experience.

MD 920 PE11 Child Neurology, 4 credits

Translation Phase, Elective, S/U

Course Director: Barbara Weissman, MD

The student who takes the Child Neurology elective will engage in all dimensions of Child Neurology. The student will develop an understanding regarding the application of Neuroscience to the Pediatric population. The student will experience a range of care the Child Neurologist delivers both inpatient and outpatient. The student will be exposed to the sub specialties of Child Neurology by working with the faculty of the Child Neurology Division.

MD 920 PE12 Pediatric Nephrology, 4 credits

Translation Phase, Elective, S/U

Course Director: Don Batsky, MD

Inpatient: Attend daily teaching rounds at 10am every day. Walk rounds on inpatients with faculty and fellow. Follow one or two inpatients. Perform the initial evaluation of children who require pediatric nephrology consultation. Outpatient: Attend clinic sessions (general nephrology, kidney transplant, chronic renal failure, hypertension). Make understanding of physiologic principles as well as psychosocial issues that result from these conditions.

MD 920 PE14 Pediatric Pulmonary Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Dawn Simon, MD

On the first day, students will join the inpatient team on rounds at 10am in the Technology Dependent Unit. Following this, students will meet with Dr. Simon to create an individualized learning plan (email correspondence prior to the elective will help to ensure achievement of goals). Based on this, an individualized schedule will be made. Generally, this will include two weeks on the inpatient pulmonary services where the student will be assigned two to three patients whom they will provide direct care for with assistance by the residents and direct supervision by the attending. For the remainder of their time (two weeks), the students will be assigned to various ambulatory clinics including general pulmonary, sleep/apnea, cystic fibrosis, sickle cell lung disease, severe asthma, and aerodigestive clinics. Through these experiences, students will also have the opportunity to perform and interpret various pulmonary function tests. Additionally, during this time, students will perform pulmonary consultations with the attending and fellow team as well as attend flexible

bronchoscopies. For students requesting an experience in pulmonary research, an individualized project will be developed ahead of time through discussions with the student such that meaningful research can be performed in the short period of the rotation.

MD 920 PE15 Pediatric Gastroenterology & Nutrition, 4 credits

Translation Phase, Elective, S/U

Course Director: Gayathri Tenjarla, MD

Students will work closely with the supervising resident, GI fellow or GI attending while on inpatient or out patient service. They will learn how to gather patient information including history, laboratory data, examine the patients, come up with their impression and plans, and then discuss with the resident or GI fellow. They are expected to write their daily progress notes which will be reviewed and receive feedback from an Attending or GI fellow. Students will attend GI conferences every Tuesday afternoon, where the GI fellows will present journal articles and do case presentations. Students also will attend once a month GI pathology rounds and GI radiology rounds and nutrition rounds along with entire GI faculty, along with pathologist or Radiologist and fellows and GI residents. During the sessions, different, challenging and interesting cases will be presented by GI fellows. Students also will attend GI didactic/board review sessions every Wednesday morning @ 8 am with other residents and GI fellows and GI Attendings. Students are required to give a presentation on an interesting case or GI topic each week during their GI rotation.

MD 920 PE19 Child Abuse & Forensic Peds, 4 credits

Translation Phase, Elective, S/U

Course Director: Stephen Messener, MD

The purpose of this elective is to enable the student to learn the skills needed to identify child abuse. The rotation will include inpatient consults at both Scottish Rite and Egleston, outpatient clinic time at the Child Protection Centers at Scottish Rite and Hughes Spalding, attendance at Fulton and DeKalb County multidisciplinary team meetings and child fatality reviews, having "hands on" experience with DFCS case worker and also spending time with the state attorney's office. The student is expected to read books and articles on a core reading list.

MD 920 PE22 Law and Medicine: The Health Law Partnership, 4 credits

Translation Phase, Elective, S/U

Course Director: Robert Pettignano, MD

Students will observe and participate in advocacy and problem-solving on behalf of low income clients served by the HeLP Legal Services Clinic at GSU College of Law and at the Health Law Partnership at Children's Healthcare of Atlanta. Half the time will be spent working with law students at the HeLP Legal Services Clinic. Students will attend law clinic and legislative advocacy classes relating to poverty law and service to low income clients, participate in case rounds, and be paired with a team of law students

to work on cases handled in the clinic and attend weekly supervisory meetings with law student teams. The other half of the time will be spent at the hospital-based office of the Health Law Partnership, where students may assist in client intake, observe court appearances, observe case acceptance meetings, and participate in other functions related to the business of serving the legal needs of low-income clients whose children are being cared for by Children's Healthcare of Atlanta.

MD 920 RA01 General Diagnostic Radiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Amanda Corey, MD

On the first day of the elective the students go through an orientation session. The students are given the opportunity to arrange their own rotation in the department to gain exposure to the areas of radiology in which they are most interested. Rotation blocks are scheduled by the week with areas of training available in nuclear medicine, neuroradiology, abdominal imaging, pediatric radiology, musculoskeletal radiology, thoracic radiology, emergency radiology, mammography and interventional radiology. The students can be exposed to CT, MRI, PET-CT, fluoroscopy, digital radiography and digital mammography, ultrasound and interventional procedures. Students are asked to document attendance with a sign in sheet. Attendance policy as outlined in the Emory Handbook is followed. Attendance at Grand Rounds and Noon Conference is also required. The student will be asked to prepare two cases for presentation. These cases will be presented in PowerPoint presentation during a small group conference to the other students on the elective and a supervising attending.

MD 920 RA10 Advanced General Diagnostic Radiology, 4 credits

Translation Phase, Elective, S/U

Course Director: Amanda Corey, MD

This elective is geared towards the student interested in radiology as a potential career choice. Opportunities for self-study in radiology and present topics in radiology to a group with feedback from a resident, fellow, or attending will be offered. Students will rotate in the department to gain exposure to the areas of radiology in which they are most interested. Rotation blocks are scheduled by the week in the following areas: nuclear medicine, neuroradiology, abdominal imaging, pediatric radiology, musculoskeletal radiology, thoracic radiology, emergency radiology, mammography, and interventional radiology. Students will prepare four power point case presentations. An imaging pre-test, which will not be graded, will be given at the start of the course. A post-test will be given at the end of the class and the results will be considered in the evaluation.

MD 920 RM01 Rehabilitation Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: David Burke, MD

The senior medical student elective in Physical Medicine and Rehabilitation is four weeks in duration. Students will learn the roles from a variety of health care professionals, including but not limited to physiatrists, physical therapists, occupational therapists, speech language pathologists, rehabilitation nurses and case workers. Students will learn to evaluate and manage patients who have been disabled due to impairments. The schedule for this elective will include both inpatient and outpatient rotation sites; the sites may or may not include: inpatient brain injury and stroke, general rehabilitation, outpatient pain management, outpatient orthopedic and spine rehabilitation, inpatient intensive care patients. Rotation sites may include: CRM, Shepherd Center, WW, CHOA-SR, Grady, TEC, and EUOSH

MD 920 SU01 General Surgery (Grady A), 4 credits

Translation Phase, Elective, S/U

Course Director: Christopher Dente, MD

You will take day general call on weekdays, take all general surgery/ trauma call every other Saturday, and more, if desired; have three elective operating days per week, two clinic days per week, and two formal faculty teaching rounds per week. Senior elective students will participate in all described activities of the service including in-house call as arranged; weekly M&M, textbook review, tumor conference; weekly Surgery Grand Rounds at Emory; and monthly Multidisciplinary Trauma Conference. The senior elective student may be asked to present a patient or topic at one M&M Conference during the rotation. Students will be assigned patients to work-up and follow, and will report directly to the senior house staff and faculty.

MD 920 SU02 General Surgery (Grady B), 4 credits

Translation Phase, Elective, S/U

Course Director: Jeffrey Nicholas, MD

You will take day general surgery call on weekdays, take all general surgery trauma call weekly at night (to be determined), have three elective operating days per week, two clinic days per week, and formal faculty teaching rounds each week. Senior elective students will participate in all described activities of the service including in-house call (to be determined); weekly M&M, textbook review, tumor conference; weekly Surgery Grand Rounds at Emory; and monthly Multidisciplinary Trauma Conference. The senior elective student may be asked to present a patient or topic at one M&M Conference during the rotation. Students will be assigned patients to work-up and follow, and will report directly to the senior house staff and faculty.

MD 920 SU03 Trauma Surgery (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Christopher Dente, MD

The student participates as a part of the Trauma Team at Grady Memorial Hospital, a state of Georgia Level 1 Trauma Center. The student is involved both in the acute resuscitative and operative management of patients who have experienced major blunt

and penetrating trauma, as well as in the convalescent, in-hospital phase of the patient's recovery. The trauma team consists of junior, mid-level and senior residents, as well as a trauma fellow, all of whom are supervised by a rotating attending surgeon who is double boarded in General Surgery and Surgical Critical Care. The trauma services at Grady admitted roughly 3000 patients in the calendar year of 2013, with almost 25% being victims of penetrating trauma. The medical student will be expected to participate in active resuscitation and operative care of patients admitted to the service as well as follow several patients throughout their hospital stay. They will also be expected to learn the techniques of bedside procedures such as diagnostic peritoneal lavage, tube thoracotomy and central line placement. Weekly activities also include Trauma/ Critical Care Conference, Morbidity and Mortality Conference, Wednesday Teaching Conference and Emory General Surgery Grand Rounds.

MD 920 SU04 Surgical ICU (Grady), 4 credits

Translation Phase, Elective, S/U

Course Director: Christopher Dente, MD

The student's daily activities consist of receiving sign-out, attending morning report and participating in rounds (work, x-ray, and teaching) in addition to patient care management. The student is part of a Multidisciplinary team including the Attending Surgeon, Surgical Residents, Nursing Staff, Respiratory Therapist, and Pharmacist. Weekly, the student attends the Trauma/Critical Care Case Conference, Department of Surgery M&M, and Surgery Grand Rounds. Students will present patients on rounds, assist residents with procedures and learn to perform invasive procedures that are commonly done in the SICU.

MD 920 SU05 General Surgery (Emory A), 4 credits

Translation Phase, Elective, S/U

Course Director: Jahnvi Srinivasan, MD

During the month, the senior will have the opportunity to participate in the entire scope of patient care activities, outpatient office visits, consultations, hospital admissions, operative procedures, and peri-operative care. The student is expected to do selected admission work-ups and to follow these patients throughout their hospital stays. During daily ward rounds with the house staff, the student is expected to contribute to all elements of the care of the surgical patient. He/she is expected to do guided reading on each surgical conditions observed and to participate in regular conferences of the Department of Surgery.

MD 920 SU06 General Surgery (Emory B), 4 credits

Translation Phase, Elective, S/U

Course Director: Carla Haack, MD

Advanced GI Surgery, Esophageal Surgery, Minimally Invasive Surgery, Endoscopy

MD 920 SU07 Emory Transplant Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Nicole Turgeon, MD

To familiarize the student with the complex evaluation, diagnostic and management problems encountered in solid organ transplantation. On either of the services, the student will be exposed and actively involved in the initial patient work-up, the process of selection for the transplant waiting list, donor organ harvesting, recipient operation and post-operative management (both in- and outpatient). Postoperative management will include immunosuppression. On either service, but especially on the Liver Transplant Service, there will be exposure to a wide variety of critical care problems, immunology, infectious disease, nutrition, psychiatric aspect of transplantation, and recovery from severe illness. The student will participate in all the surgical procedures.

MD 920 SU08 Surgical Oncology, 4 credits

Translation Phase, Elective, S/U

Course Director: Jyotirmay Sharma, MD

This elective provides an exciting opportunity to learn about multidisciplinary care of cancer. Students will work in the operating room, wards, and office to see and have direct involvement in inpatient and outpatient care. There are numerous teaching conferences and many opportunities for growth.

MD 920 SU09 SICU (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: John Galloway, MD

The critical care team consists of residents and fellows from the departments of surgery, anesthesiology, emergency medicine, and pulmonary medicine who rotate through the ICU by month, led by a critical care attending who will rotate by week. The student will preround with the residents early in the morning to assess their patients and coordinate care with the various surgical teams, then present their patients to the critical care staff during rounds. Procedures are usually performed after rounds. Conferences include critical care lectures and surgical grand rounds weekly, and journal club and morbidity and mortality conferences monthly.

MD 920 SU10 Otolaryngology, 4 credits

Translation Phase, Elective, S/U

Course Director: Adam M. Klein, MD

First, we are glad you have sought interest in Emory Otolaryngology & Head & Neck Surgery. We take great pride in our specialty and look forward to providing you with an excellent learning opportunity and clinical experience. We are fortunate enough to have every Otolaryngology subspecialty strongly represented in our department. This with our excellent complement of residents places our program among the strongest in the nation. We have designed the Otolaryngology – Head & Neck Surgery rotation to provide an introduction and basic clinical experience in our specialty. We realize that

many of our rotators will go on to train in other specialties. We therefore hope to provide a broad exposure to General Otolaryngology while passing along skills beneficial to any generalist physician. Fortunately for others interested in advancing in Otolaryngology, our diverse department can provide excellent exposure to the varied subspecialties and their advanced therapeutic and diagnostic procedures. Our department is founded on a strong commitment to medical education. We have attempted to structure student rotations to be as enriching as possible, combining a somewhat structured curriculum with much opportunity for hands-on and individualized attention. Our faculty, staff, and residents are all very interested in making your stay as fulfilling as possible. Please let us know if there are any other ways we can assist.

MD 920 SU11 Pediatric Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Megan Durham, MD

The student will be an active part of the Surgical Service at Children's Hospital of Atlanta Egleston Campus. He/she will participate in work and teaching rounds, conferences, clinics, and in surgery. In addition, he/she will join the attendings one day a week in their offices. Clinic days are offered 5 days per week. Students will attend a weekly didactic conference, a weekly clinically relevant radiology conference, Pediatric Surgery Grand Rounds, workbook reviews, staff rounds, and weekly Morbidity and Mortality conference. They will also attend a monthly Journal Club event and a monthly combined radiology-surgery-pathology conference.

MD 920 SU12 Plastic Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Albert Losken, MD

The experience is designed as a preceptorship with the student assigned to one or two of the attending plastic surgeons for the month. In this relationship with the attending, the students have the opportunity to participate in a full range of clinical activities: outpatient clinics, ward rounds, operating room experience, and minor surgical procedures. Emphasis is given to informal, one-on-one teaching; guided reading is required; sectional conferences are attended. The student is expected to be present at the beginning of the day whether on rounds, in clinic, or in the operating room. The assigned attending will direct the student to interact with other members of the team. Some familiarity with elective cases is encouraged and assignments may be given investigating medical or surgical issues. Surgical technique will be reviewed and practiced.

MD 920 SU13 Urology, 4 credits

Translation Phase, Elective, S/U

Course Director: Chad Ritenour, MD

We have arranged a schedule that introduces the rotating medical student to every aspect of urology through various conferences, seminars, Outpatient Clinics, Inpatient Rounds, and generous open time for Operating Room exposure with each Attending. The elective coordinator, Jenny Alff, meets with all of the students for an Orientation Session a day or so prior to the start of their rotation to acclimate them with Emory University Hospital, the Department of Urology Clinic, etc. so they can feel prepared and start their rotation with confidence. At this time they pick up their schedules, temporary parking hangtags, pagers, reading materials. Each student is given a schedule so that he/she can see where he/she is expected to go on each day of the rotation for the entire month. Each student is loaned a pager if they are from another school.

MD 920 SU14 Neurosurgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Nelson Oyesiku, MD

Students will be assigned to the neurosurgical service of one of the Emory University Affiliated Hospitals, depending upon the student's interest and the slots available. Students are expected to participate in all service activities, teaching conferences, etc. Patient work-ups and patient care responsibilities will be assigned to the student and will be supervised by neurosurgical staff and senior level residents. Reading material will be recommended and may include specific articles related to the pathological entities that the student encounters while on the service.

MD 920 SU15 Cardiothoracic Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Vinod Thourani, MD

During the month, the students will become members of the cardiothoracic surgical team and will carry out complete work-ups on some of the more interesting inpatients. They will review with residents or the faculty member the pertinent aspects of the patient's preoperative assessment including cardiac catheterization, angiocardiology, echocardiography, computed tomographs, pulmonary functions, bronchography, esophagography, and the significance of these studies will be discussed. The students will be expected to attend the main part of the operative procedure, particularly of patients that they work up, and will be encouraged to closely follow the patient's postoperative course with the other members of the team. They will attend weekly rounds and conferences and meet once a week with a mentor. Emory University Hospital or Emory Midtown Hospital Cardiothoracic Surgery Services; CT Surgery Clinic one afternoon per week.

MD 920 SU16 Pediatric Cardiothoracic Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Brian Elliot Kogon, MD

The pediatric cardiac surgical experience at Children's Hospital of Atlanta - Egleston Campus, occurs in a very busy pediatric cardiac surgical practice (approximately 900 operations per year). The surgical team is comprised of two attending surgeons and one pediatric cardiothoracic fellow. There are two operating rooms available each day of the week and ample patient volume. Students will have in-depth direct contact with the attending and residents, and will have opportunities to participate in all aspects of cardiothoracic surgical care. They will be exposed to the operations, as well as pre and post-operative care in the cardiac intensive care unit, ward unit, and outpatient clinic. Students will also have access to an adult congenital cardiac surgical experience at Emory University Hospital which occurs within a very busy adult cardiac surgical practice. The adult congenital program operates on Thursdays and performs 50-75 operations per year. This is one of the largest adult congenital cardiac surgical programs in the country and continues to grow yearly.

MD 920 SU19 Vascular Surgery (Emory), 4 credits

Translation Phase, Elective, S/U

Course Director: Luke Brewster, MD

Primarily open complex vascular surgery at Emory University Hospital; clinic and operating room experience; weekly conference and Grand Rounds.

MD 920 SU20 Surgical Anatomy, Embryology & Operative Techniques, 4 credits

Translation Phase, Elective, S/U

Course Director: Barbara Pettitt, MD

This four week elective is designed for the senior medical student who is planning to do a residency in surgery or obstetrics/gynecology. The course utilizes human cadaveric dissection labs, animal surgery labs, simulation and robotics labs, fresh tissue specimens, and detailed lectures and demonstrations to identify important surgicoanatomical entities and to provide the student with an opportunity for hands on surgical practice and training. This elective gives the student an excellent chance to learn, practice, and refine surgical skills and techniques in a safe, supervised, and closely monitored environment. It also teaches and reinforces anatomical knowledge, topography, and anatomical variations that are essential to practicing surgeons.

MD 920 SU21 Oral/Maxillofacial Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Gary F. Bouloux, MD/DDS

The student will be an active part of the oral/maxillofacial surgical service at Grady Memorial Hospital. The service provides care to both outpatients and inpatients. The student will participate in working/teaching rounds, conferences, clinics and operating room activities. Students will have the opportunity to take maxillofacial trauma call per their level of interest. Students with special interests will be assigned to appropriate faculty and location.

MD 920 SU30 Cardiothoracic Research, 4 credits

Translation Phase, Elective, S/U

Course Director: Sai Murali, MD

Students are expected to participate in daily activities related to the overall laboratory, as well as become aligned with a specific ongoing project. The student will become acquainted with surgical instruments, surgical procedures and research protocols. The student will be expected to become familiar with instrumentation related to measurement of hemodynamic and cardiac function variables, blood gases, data acquisition and analysis of hemodynamic and cardiodynamic data using conventional indices of cardiac function and state-of-the-art indices of cardiac systolic and diastolic function. The student will gain exposure to the techniques used in cardiac surgery and cardiology, including cardiopulmonary bypass, angiography, myocardial protection, and revascularization. The student will be asked to participate in scheduled laboratory meetings, and will be asked to present on the topic assigned as an in-depth topic. Pursuit of an in-depth topic will involve performing literature searches, working with laboratory personnel on development of research questions and methods, and frequent evaluation and interpretation of the data as it unfolds and evolves.

MD 920 SU32 Emory Acute Care Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Carla Haack, MD

You will take day general surgery call at EUH on weekdays. Consults will be from both the emergency department and inpatient medical and subspecialty surgical services. In addition, you will participate in one outpatient clinic per week which will allow you to participate in the ongoing postoperative care of the surgical patient. Students will be assigned patients to work up and follow, and will report directly to the senior house staff and faculty. During this rotation, you will be exposed to the breadth of general surgery practice at a tertiary referral center. Senior elective students will participate in all described activities of the service including weekly M&M, teaching rounds; weekly Surgery Grand Rounds; and weekly resident research conference. The senior elective student may be asked to present a patient or topic at one M&M Conference during the rotation.

MD 920 SU33 Emory Hepatobiliary & Hepatic Transplantation, 4 credits

Translation Phase, Elective, S/U

Course Director: Juan M. Sarmiento, MD

Rounds will be done in the morning with the surgical residents first and with the attendings later. The student is expected to know all the patients, but particularly those patients assigned to him/her. The student will have to read appropriate material pertaining to the rotation (which will be provided). He or she will scrub on a majority of the cases. The student will have to be available 24 hours a day, seven days a week during the rotation, as the availability of donors is unpredictable. The attending and/or residents will teach various invasive procedures, such as placement of lines, tubes,

drains, etc. Depending on the work load, participation in the outpatient clinic will be desirable and encouraged. There will be no vacation during the rotation; days off are arranged with the attending on service and the senior resident.

MD 920 SU34 Emory Thoracic Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Felix Fernandez, MD

During the month, the students will become members of the thoracic surgical team and will carry out complete work-ups on some of the more interesting inpatients, including those in need of lung transplantation. They will review with residents or the faculty member the pertinent aspects of the patient's preoperative assessment including imaging studies, pulmonary function tests, and the significance of these studies will be discussed. The students will be expected to attend the main part of the operative procedure, particularly of patients that they work up, and will be encouraged to closely follow the patient's postoperative course with the other members of the team. They will attend weekly rounds and conferences and are expected to spend time in clinic with the attending. Students may also accompany the team for organ retrievals.

MD 920 SU35 General Surgery (VA), 4 credits

Translation Phase, Elective, S/U

Course Director: Jackson Slappy, MD

You will have four elective operating days per week, one clinic day per week, and one formal faculty teaching rounds session per week. Senior elective students will participate in all described activities of the service including attending and managing your own supervised clinic, participating as an assistant on operative cases, and managing patients on the ward and in the ICU. The senior elective student may be asked to present a patient or topic at one educational Conference during the rotation. Students will be assigned patients to work-up and follow, and will report directly to the senior house staff and faculty.

MD 920 SU36 Colorectal Surgery, 4 credits

Translation Phase, Elective, S/U

Course Director: Patrick Sullivan, MD

This elective provides an exciting opportunity to learn about multidisciplinary care of colorectal benign disease and neoplasms. Students will work in the operating room, wards, and office to see and have direct involvement in inpatient and outpatient care. There are numerous teaching conferences and many opportunities for growth.

MD 920 SU37 Bariatric Medicine, 4 credits

Translation Phase, Elective, S/U

Course Director: Arvinpal Singh, MD

In this elective, students will become familiar with surgical and nonsurgical management of obese patients. The special considerations in the pre-operative evaluation of obese patients will be addressed. Students will assist in the outpatient care of obese patients who have undergone bariatric surgery. They will also be exposed to obese patients undergoing non-surgical weight loss, including those on meal replacement programs. Students will attend support group sessions for obese patients and educational sessions. Students will also be expected complete a bariatric related project during their rotation in order to pass (e.g. PowerPoint talk, journal club, literature review, etc.).

MD/PHD PROGRAM REQUIRED COURSES

IBS 508R MD/PhD M1/M2 Journal Club, 1 credit

Required, S/U

Course Directors: Anita Corbett, PhD, Paul Garcia, MD/PhD

The M1/M2 Journal Club is a one credit hour biweekly course required of all first and second year MD/PhD students in the *Foundations* curriculum. It is open only to MD/PhD students who are in the medical *Foundations* curriculum, and other regular MD students interested in the MSTP by permission. The course serves to integrate new students into the program, to infiltrate their medical studies with research and scientific thinking, and to introduce them to clinically relevant basic medical science research. This course exposes students to a diverse array of current scientific literature, including the ethics of publishing scientific research which is a regular topic and incorporated into the biweekly sessions. One session per year is dedicated solely to research and publication ethics and led by a member of the Emory Ethics Center. This course is offered as pass/fail based on participation and attendance. The journal club is directed by Anita Corbett, Ph.D., an R01-funded scientist and member of the training faculty who contributes substantially to many GDBBS and MSTP training and programmatic activities.

MD 799R/IBS 799R MD/PhD Clinical Research Conference, 1 credit

Required, S/U

Course Directors: Ann Chahroudi, MD/PhD, David Gutman, MD/PhD, Sean Stowell, MD/PhD

The MD/PhD Program's Clinical Research Conference (CRC) is a student led conference designed to provide students with exposure to translational medicine. Teams of graduate level students (3-4 per team) sign up to work with an Emory clinical faculty mentor, who are generally physician-scientists involved in clinical practice. The CRC serves several important goals: (1) To provide a forum throughout the academic year that brings students from all years of the program together as a group, fostering collegiality and program unity. (2) To expose students to a broad array of clinical and research specialties across the University. (3) To provide continued clinical exposure to those students in their graduate training years, and a direct view of how basic

science integrates and translates into clinical practice. The students work with the mentor in his/her clinical specialty over the course of 2-3 weeks to prepare for the conference presentation. Graduate-level students are required to participate in two such experiences annually. Each conference session is approximately 1 hour followed by dinner and a second session of the same length. In each session, there are three 10-15 minute student presentations in which students highlights a representative case or clinical experience with differential diagnosis followed by presenting the background disease pathophysiology, and one or more relevant research articles. The faculty mentor completes each of the sessions by describing his or her own career path, hurdles overcome in his/her career, or an interesting, informative issue regarding training, education and/or career choice. This course is offered for 1 credit hour and is graded on an S/U basis based on participation and attendance.

MDPH 799R .002 MD/PhD Clinical Refresher, 1 credit

Required, S/U

Course Director: Joanna Bonsall, MD/PhD

This course prepares MD/PhD students for the transition from graduate school to clinical clerkships. The course involves patient contact at Grady Memorial Hospital and Emory University Midtown Hospital and is directed toward refreshing students in physical examination, patient presentations, generation of a differential diagnosis, and its use in preparing the History & Physical and treatment plan. This course covers common diseases seen on the wards and the associated clinical presentations, disease processes, and patient management.