

# Duke University School of Medicine

## *Courses of Instruction*

### **Anesthesiology**

#### **Clinical Science Electives**

**ANESTH-401C. Cardiothoracic Intensive Care Sub-Internship.** The cardiothoracic intensive care sub-internship will allow fourth year medical students to be exposed to and participate in the care of the post-operative and critically ill cardiac and thoracic surgery patient. This patient population has the highest rate of invasive monitoring, echocardiographic and hemodynamic assessment, and advanced circulatory support including utilization of inotropes, vasopressors, and mechanical circulatory support devices (LVAD, RVAD, IABP). A working knowledge of these concepts will be critical to a future career in Anesthesiology, Critical Care Medicine, or Surgery. This sub-internship level course will allow students to participate in patient care 6 days a week. This will be an in-depth experience in cardiac critical care medicine. Students will be evaluated on their knowledge, skills, and ability to facilitate patient care in this environment. Students will be expected to take a high degree of ownership of their patients, communication between the critical care, surgery, and anesthesia teams will be emphasized. This sub-internship course will not fulfill acute care curriculum requirement. For more information contact Dr. Quintin Quinones at [quintin.quinones@dm.duke.edu](mailto:quintin.quinones@dm.duke.edu) or Lori Hester, [lori.hester@duke.edu](mailto:lori.hester@duke.edu). Permission of the instructor is required for enrollment. Credit: 5. Enrollment: Max-2 Min-1. *Quintin Quinones MD, PhD; Raquel Bartz, MD; Kamrouz Ghadimi, MD; Jack Haney, MD; Nazish Hashimi, MD; Ehimemen Iboaya, MD; Jerrold Levy, MD; Sharon McCartney, MD; Mihai Podgoreanu, MD; Jacob Schroeder, MD; Madhav Swaminathan, MBBS; Annemarie Thompson, MD; and Ian Welsby, MBBS, BSc*

**ANESTH-402C. Cardiothoracic Intensive Care Elective.** The cardiothoracic intensive care elective will allow fourth year medical students to be exposed to and participate in the care of the post-operative and critically ill cardiac and thoracic surgery patient. This patient population has the highest rate of invasive monitoring, echocardiographic and hemodynamic assessment, and advanced circulatory support including utilization of inotropes, vasopressors, and mechanical circulatory support devices (LVAD, RVAD, IABP). A working knowledge of these concepts will be critical to a future career in Anesthesiology, Critical Care Medicine, or Surgery. This elective level course will allow students to participate in patient care 5 days a week. This will be an in-depth experience in cardiac critical care medicine. Students will be evaluated on their knowledge, skills, and ability to facilitate patient care in this environment. This elective will fulfill acute care curriculum requirement. For more information contact Dr. Quintin Quinones at [quintin.quinones@dm.duke.edu](mailto:quintin.quinones@dm.duke.edu) or Lori Hester, [lori.hester@duke.edu](mailto:lori.hester@duke.edu). Permission of the instructor

is required for enrollment. Credit: 4. Enrollment: Max-4 Min-1. *Quintin Quinones MD, PhD; Raquel Bartz, MD; Kamrouz Ghadimi, MD; Jack Haney, MD; Nazish Hashimi, MD; Ehimemen Iboaya, MD; Jerrold Levy, MD; Sharon McCartney, MD; Mihai Podgoreanu, MD; Jacob Schroeder, MD Madhav Swaminathan, MBBS; Annemarie Thompson, MD; and Ian Welsby, MBBS, BSc*

**ANESTH-430C. Diving and Hyperbaric Medicine.** Students participate actively in assigned patient care and clinical projects. Well-focused segments of ongoing clinical work provide intensive exposure to clinical physiology and pharmacology. Students will be assigned an attending physician (mentor), desk and computer space in the Hyperbaric Center. Consultative services are provided for inpatients and outpatients from orthopedics, medicine, radiation oncology, intensive care units, and preoperative and postoperative care units. Specific indications for hyperbaric oxygen therapy are used in clinical care and in developing translational projects. Students are guided in producing concrete clinical presentations and reports related to the field. For more information please contact Dr. Piantadosi at 684-6143. Secondary contact: Dr. Jake Freiburger, 668-0032. Students should meet for rounds on the first day of classes promptly at 7:30 a.m. The location is Hyperbaric Center Library, 0588 White Zone, CR II Building. Credit: 4. Enrollment Max 1. *Claude Piantadosi, MD, and staff*

**ANESTH-440C. Clinical Anesthesiology.** The student will participate in the pre-, intra-, and post-operative anesthetic management of patients while assigned to an individual resident or attending anesthesiologist. The student will spend time in the general operating rooms, the cardiothoracic operating rooms, and in various subspecialty areas, such labor and delivery, pediatric operating rooms, neurosurgical operating rooms, regional anesthesiology service, and/or acute pain management. Learning opportunities will include pre-operative patient evaluation, anesthetic technique selection, airway management, pharmacology, physiology, and anatomy, as well as procedures such as vascular access, ultrasound, and patient monitoring. These areas will be reinforced by problem-based learning discussions, Grand Rounds, and other conferences. In the summer and fall, priority in registration is given to students considering careers in Anesthesiology. Students **MUST** attend the first day of the section, and are strongly advised not to miss any of the first week. More than 4 absences are not permitted. Schedules for the class will be emailed out prior to the start of the course. For questions and to obtain permission numbers, please contact Elizabeth Futrell ([elizabeth.futrell@duke.edu](mailto:elizabeth.futrell@duke.edu)) or 919-668-3400. Permission is required for enrollment during summer section 44 and for fall section 41. (Not offered during summer section 43). Enrollment for other sections will be on a first come/first served basis effective summer 2021. Enrollment Max: 4. Credit: 4. *Elizabeth Malinzak, MD, Grace McCarthy, MD, and Staff*

**ANESTH-441C. Subinternship in SICU.** This course is designed to broaden the student's knowledge and experience in managing critically ill surgical patients. Under supervision, students function as sub-interns in the Surgical Intensive Care Unit (SICU) in 6 West DMP. Students are assigned their own patients and actively participate in daily rounds as part of the SICU team. The ICU Fellows provide lectures on multiple aspects of critical care. Students take call one night in four and work on a one-on-one basis with SICU house staff in the supervised management of critically ill patients. There is emphasis on teaching of procedures and techniques necessary for the management of critically ill patients including vascular access, airway management, hemodynamic assessment and monitoring, cardiovascular resuscitation and use of vasoactive

drugs, ventilator management, prevention and management of nosocomial infections, and ethical decision making in ICU. Students are formally evaluated by the SICU house staff and the attending physician. C-L: SURGERY 441C. Credit: 5. Enrollment: max 2. *Christopher Young, MD; Amy Alger, MD; Suresh Agarwal, MD; Raquel Bartz, MD; Kelli Brooks, MD; Joe Fernandez-Moure, MD; Krista Haines, MD; Taylor Herbert, MD; Melanie Hollidge, MD; George Kasotakis, MD; Nancy Knudsen, MD; Vijay Krishnamoorthy, MD; Nitin Mehdhiratta, MD; Sean Montgomery, MD; Jamie Privratsky, MD; Lisa Pickett, MD; Quintin Quinones, MD; Susan Rowell, MD; Vanessa Schroder, MD; Arturo Suarez, MD; Steven Vaslef, MD, PhD; Cory Vatsaas, MD; and Paul Wischmeyer, MD*

**ANESTH-446C. Acute and Chronic Pain Management.** Students will participate in both inpatient and outpatient pain management. Each student is assigned daily to an individual fellow or attending physician who supervises the student's active involvement. This involvement emphasizes a multidisciplinary approach appropriate for the individual patient. Topics reviewed include pharmacotherapy including opioid management, interventional procedures such as epidural and peripheral nerve catheter placement, nerve blocks, neurolytic procedures, as well as implantable devices. The benefits of physical and psychological therapy are stressed. Students will observe and/or participate in various interventional procedures. In addition to this clinical work, students attend daily anesthesia conference and weekly grand rounds. The course is offered each elective period throughout the year. More than two absences must be made up, and if more than five absences are anticipated, the elective should be re-scheduled. Student with questions may contact Dr. Lance Roy ([lance.roy@duke.edu](mailto:lance.roy@duke.edu)) or Elizabeth Futrell ([elizabeth.futrell@duke.edu](mailto:elizabeth.futrell@duke.edu)). This rotation assignment includes clinic assignments at the Durham VA Medical Center. If you do not have a PIV badge, you will need to complete the required VA paperwork at least 30 days prior to the start of the rotation. For questions about the VA paperwork, please contact Clyde Meador ([clyde.meador@va.gov](mailto:clyde.meador@va.gov)) Credit: 4. Enrollment: max 2, min 1. *Lance Roy, MD and Arun Ganesh, MD*

## **Dermatology**

**DERMATOL-450C. Clinical Dermatology.** The elective in clinical dermatology is designed to prepare students to perform an accurate skin examination, formulate appropriate differential diagnoses, and choose relevant diagnostic or therapeutic interventions. This course is valuable to any student interested in improving their ability and confidence in the cutaneous exam. Students in the rotation spend two weeks working in the outpatient dermatology clinics, one week on the inpatient consult service at Duke, and one week at the Durham VA Medical Center. The outpatient clinical experience includes general dermatology clinics as well as a variety of specialty clinics such as pediatric dermatology, HIV dermatology, cutaneous oncology. Patient care is supplemented with lectures designed to provide the student with a foundation in dermatologic principles, and students are encouraged to attend weekly departmental teaching conferences. Student evaluations are based on the development of clinical skills as assessed by faculty and residents, and by a brief case review. Students are to report to the Dermatology Clinic, VA Medical Center clinic 8A on 8:30 a.m. on the first day of the rotation for orientation. NOTE: Students are responsible for ensuring access to the VA electronic medical record. Please contact (contact Clyde Meador at [clyde.meador@va.gov](mailto:clyde.meador@va.gov)) no less than 60 days from the first day of the section in which he/she is enrolled. Dr. Caroline Rao is the course director and may be reached at

caroline.rao@duke.edu. Secondary contact: Jessica Braddock, (jessica.braddock@duke.edu). Credit: 4. Enrollment: max. 3, except where otherwise indicated. Sole Enrollment. Students may not enroll in any other daytime courses while enrolled in this course. *Caroline Rao, MD, Sabrina Shearer, MD; Tara Jaleel MD; Amber Fresco, MD and other staff*

## Medicine

**MEDICINE-402C. Medical Sub-Internship in Hematology-Oncology.** (1) Course Goals: This is an intensive experience in the care of inpatients with serious hematologic and oncologic disorders. The student learns to interpret peripheral blood films, how to use and interpret other specialized laboratory tests (e.g., bone marrow aspirate/biopsy, serum electrophoresis, coagulation studies, tumor markers, leukemia cell markers), and how to approach the evaluation and treatment of hematologic and solid tissue malignancies and their complications. (2) How Goals Are Achieved: Under supervision of a Hematology/Oncology fellow and a division staff member, the student is given considerable responsibility in the care of inpatients on one of the Hematology/Oncology or Experimental Therapeutics wards in Duke Hospital. They receive instruction and guidance in performing diagnostic and therapeutic procedures and gain experience in the use of chemotherapeutic drug regimens. Specific issues such as quality of life, care of the aging patient with malignancy, and decisions regarding DNR status are addressed by the patient-care team. In addition, students receive a series of core lectures, receive training in chemotherapy, and attend the ongoing clinical, research and didactic divisional conferences. (3) Methods of Evaluation: Students are evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, and propose assessments and plans of action. For more information, please contact Nyasia Lloyd at 684-2287 or via email at nyasia.lloyd@duke.edu. Credit: 5. Enrollment: max 1. *Richard Reidell, MD and Medical Oncology staff*

**MEDICINE-404C. Cardiac Care Unit Sub-Internship.** (1) Course Goals: Primary - To provide an in-depth experience in the evaluation and care of inpatients with various cardiovascular problems. Secondary -To refine student understanding of the cardiovascular history, physical examination and non-invasive and invasive laboratory testing in evaluating and managing patients with known or suspected cardiovascular disease. (2) How Goals Are Achieved: Students are assigned to the Duke CCU or to a cardiology inpatient service at Duke, and, in concert with the house staff, cardiology fellows, and senior staff attendings, work up and manage patients admitted to these various services. They also participate in a core curriculum experience, including individually assigned times to work with HARVEY, the cardiology patient simulator, and various computer assisted instruction programs. (3) Methods of Evaluation: Students are evaluated by all resident, fellow, and senior staff with whom they work. The evaluation form is available at the beginning of the elective. Depending on circumstances, students may also be evaluated by written and practical examinations at the beginning and/or end of the elective. For more information, please contact Dawne Smith at 668-1524 or via email at dawne.t.smith@duke.edu. Prerequisite: Successful completion of an accredited internal medicine clerkship. Credit: 5. Enrollment: max 2. *Anna Lisa Crowley, MD/FACC and cardiology staff*

**MEDICINE-405C. Intensive Care Medicine Sub-Internship (Duke).** Course Goals: (1) Primary - To introduce the student to a pathophysiologic approach to critically ill adults. Secondary

- To provide an opportunity for students to perform selected procedures. (2) How Goals Are Achieved: Students function as sub-interns in a very active intensive care unit. Students perform patient evaluations, procedures, and develop diagnostic treatment plans under the direct supervision of the junior assistant resident, critical care fellow, and attending physician. Night call occurs every third night. Physiology and biochemistry based approach to critical care medicine is stressed. Emphasis is placed on bedside teaching with easy access to attending physicians and critical care fellows for the discussion of specific patient oriented questions. Preferences for the month of rotation are honored, if possible. Questions should be directed to Dr. Gilstrap, [daniel.gilstrap@duke.edu](mailto:daniel.gilstrap@duke.edu). (3) Methods of Evaluation: Each student's performance is assessed by the course director through direct observation of the student in the clinical and didactic environments. Input from the residents, fellows, and other attending physicians is obtained, and provides the primary basis for grade assignment. Requisite: Students that take Medicine 405C are not eligible to take Medicine 432C - Intro to the Duke MICU. For more information, please contact Donna Permar at 681-5919 or via email at [donna.permar@duke.edu](mailto:donna.permar@duke.edu). Credit: 5. Enrollment: max 3. *Daniel Gilstrap, MD and critical care staff*

**MEDICINE-407C. Sub-Internship in Internal Medicine/Psychiatry.** This course is an intensive clinical experience in the diagnosis and treatment of acute co-morbid medical and psychiatric disorders requiring inpatient hospitalization. Students participating in this four-week elective based in Duke University Hospital are expected to function at intern-level, assuming care of a small census of complex patients. The Medicine/Psychiatry faculty on the GenMed 12 service provides direct supervision. The goal of the elective is to refine and then clinically apply basic knowledge from the fields of Internal Medicine and Psychiatry. Participation at selected case conferences and didactic sessions is expected. Students are invited to attend the intern lecture series during Psychiatry Academic Half-day and educational offerings in Internal Medicine, including Intern Report. For more information, please contact Dr. Kristen Shirey via email, [kristen.shirey@duke.edu](mailto:kristen.shirey@duke.edu). Secondary Contact: Kamara Carpenter, [kamara.carpenter@duke.edu](mailto:kamara.carpenter@duke.edu). Preference is given to students considering a career in combined Medicine-Psychiatry. Prerequisite: permission of instructor and successful completion of PSYCHTRY-205C and MEDICINE-205C. C-L PSYCHTRY 407C. Credit: 5. Enrollment: max 1. *Kristen Shirey, MD*

**MEDICINE-415C. Clinical Management of Obesity.** The unique blend of clinical and research programs related to obesity at Duke provides an opportunity for students to learn how to evaluate and manage obesity in many ways. This elective involves attendance in outpatient clinics or residential programs related to obesity or obesity-related co-morbidities including Residential Programs (Diet and Fitness Center), Bariatric Surgery, Pediatric Diabetes, Pediatric Endocrinology, and Lifestyle Medicine. Students will have the opportunity to observe ongoing studies and attend lectures at various clinical and research conferences. In consultation with the course director, an independent project related to obesity will be completed. For more information and permission, please contact Dr. Westman at 620-4061 or via email at [ewestman@duke.edu](mailto:ewestman@duke.edu). Permission of instructor is required. Credit: 4. Enrollment: 1. *Eric Westman, MD/MHS; Dana Portenier, MD; William Yancy, MD/MHS*

**MEDICINE-423C. Rheumatology.** (1) Course Goals: For students to learn the basics of the evaluation and management of patients with inflammatory and non-inflammatory arthritis, autoimmune and immunological disorders. Diseases seen include the various forms of arthritis and other inflammatory diseases such as lupus and other connective tissue diseases, vasculitis, scleroderma, and myositis. Students will also learn to interpret specialized laboratory studies relating to the evaluation of patients with rheumatic and immunological disorders. Students are exposed to joint aspiration and injection, synovial fluid analysis, musculoskeletal radiology, and histopathological analysis. (2) How Goals Are Achieved: Two weeks of the rotation are spent in the Duke Rheumatology faculty clinics located in Duke South Clinics and in our South Durham or Brier Creek (Raleigh) location. Two weeks are spent as part of the rounding team on the Duke Hospital inpatient rheumatology consultation service. Because of COVID-19 and the inability to physically distance in clinics, there will be more consult time allotted to students. The inpatient consultation team includes a faculty member, a fellow, and a student. Students are expected to perform three new inpatient consultation each week. Rounds focus on oral presentation of patients including detailed review of history, physical examination findings, pertinent laboratory, x-ray and pathological findings. Students attend divisional conferences including weekly Rheumatology and Immunology Grand Rounds, Rheumatology Fellows Core Curriculum Conference, Journal Club, and Rheumatology/Radiology Conference. Students are expected to watch two introductory videos, one on the approach to the rheumatology patient and one on the rheumatologic musculoskeletal examination. Justification for a grade of honors includes the following: Evidence through direct observation of house officer-level clinical skills in rheumatology; demonstrated by completion of the log of learning points and questions; attendance at conferences listed above; evidence of additional reading through case presentations to faculty members; faculty evaluations; demonstration of exemplary interest and effort during the rotation. Students are assigned primary house officer level responsibilities on the Consultation Service and the Outpatient Clinics at Duke South/South/Durham/Brier Creek. (3) Methods of Evaluation: Students are evaluated by the primary faculty and fellows with whom they work. Evaluations are based on students' performance on rounds and in the clinics, including history and physical examination skills and conference attendance. For more information, please contact Dr. Doss (jayanth.doss@duke.edu). Students may also contact Nyasia Lloyd (nyasia.lloyd@duke.edu). If the course is full when you attempt to enroll, please contact Dr. Doss (jayanath.doss@duke.edu). Credit: 4. Enrollment: max 1. *Jayanth Doss, MD/MPH; David Caldwell, MD; Megan Clowse, Ryan Jessee, MD; Atul Kapila, MD; David Leverenz, MD; Jennifer Rogers, MD; Ankoor Shah, MD; William St. Clair, MD; Terri Tarrant, MD; Rebecca Sadun, MD; Kai Sun, MD; Sophia Weinmann, MD.* Sole Enrollment

**MEDICINE-425C. Clinical Coagulation.** (1) Course Goals: Primary - To teach the clinical and laboratory approach to patients with a hemorrhagic or thrombotic disorders. The student learns to evaluate clinical coagulation disorders and become familiar with coagulation laboratory testing and interpretation. Secondary - To expose the student to recent advances in the area of coagulation research. (2) How Goals Are Achieved: The student spends four weeks on the Hematology Consult Service under the direction of hematology division faculty. The student is expected to work up inpatients with coagulation problems referred to the Coagulation Service as well as participate in a half day a week Coagulation Outpatient Clinic. Patients generally present with complex diagnostic as well as therapeutic problems. The rotation includes Coagulation lab rounds during which the student learns to interpret lab tests and review abnormal results. The student is expected to read standard texts regarding their patients' problems, as well as relevant reviews provided by

the attending physician. The student may also interact with the Anticoagulation Management Service to gain a better understanding of various approaches to outpatient management of anticoagulant therapy. Students electing to do an eight week rotation have a more extensive laboratory and clinic research experience. (3) Methods of Evaluation: The student's performance is evaluated by the hematology attending with input from the fellow and/or medicine resident on the service. The evaluation is based on observation of the student's ability to do careful histories and physical examinations, to appropriately assess the problem and develop a logical diagnostic and therapeutic plan, and to demonstrate an increase in knowledge regarding laboratory tests and their application to clinic problems. For more information, please call Nyasia Lloyd at 681-4510, or by email at nyasia.lloyd@duke.edu. Credit: 4. Enrollment: max 1. *Richard Reidell, MD; and hematology staff*

**MEDICINE-428C. Metabolism and Endocrinology.** Course Goals: Primary - The student has an in-depth experience in the evaluation and management of patients with endocrine disorders. Secondary - The student learns basic principles of hormone physiology and applies these concepts in clinical settings. (2) How Goals Are Achieved: Each student is introduced to patient problems by working with the Endocrine faculty. The student is exposed to clinical endocrine disorders by seeing patients in endocrine outpatient clinics (Diabetes/ General Endocrine) as well as experiencing the inpatient Diabetes Management/General Endocrine Consult Service. The student has the opportunity to review general literature on common endocrinologic conditions and endocrinologic emergencies, as well as learning basic assessment skills of the patient with diabetes, thyroid disease, and other common endocrinologic presentations. Division conferences include Grand Rounds, Case Conference, and Inpatient Consult Rounds with opportunities to integrate basic concepts with clinical applications. (3) Methods of Evaluation: A written critique is provided by the student's preceptors with comments from other members of the division as appropriate. For more information, including where to report on the first day of classes, please contact via email Dr. Beatrice Hong at [beatrice.hong@duke.edu](mailto:beatrice.hong@duke.edu) Secondary contact: Dr. Spratt ([susan.spratt@duke.edu](mailto:susan.spratt@duke.edu)). Credit: 4. Enrollment: max 2. *Beatrice Hong, MD, Susan Spratt, MD and endocrinology staff*

**MEDICINE-430C. Pulmonary Medicine.** MEDICINE-430C. Pulmonary Medicine. . (1) Course Goals: Primary - To provide training in clinical aspects of pulmonary medicine. The primary diseases emphasized include asthma, chronic obstructive lung disease, pulmonary vascular diseases including pulmonary embolus, acute respiratory failure, hypersensitivity, interstitial and immunologic lung diseases and pulmonary manifestations of systemic illnesses, i.e., sarcoid, scleroderma, cystic fibrosis, etc. Secondary - To provide experience with pulmonary laboratory techniques including pulmonary function testing, cardio-pulmonary exercise testing, chest radiology, and bronchoscopy. (2) How Goals Are Achieved: Students are assigned to the Pulmonary Inpatient and Consult Services at Duke Hospital. They have primary responsibility for workup and presentation of selected patients on these services. All patients are presented and followed at daily rounds with fellows and faculty. Students are expected to attend the following conferences at Duke Hospital during their rotation unless clinical duties supersede: Tuesday Fellows Lecture series, Wednesday Chest Conference; and Thursday ILD conference. Students are otherwise encouraged to attend General Medicine Noon Conferences. (3) Methods of Evaluation: Formative feedback: It is expected that students seek out personalized feedback at least weekly to bi-monthly with both the fellow and faculty on the rotation. Also, students will take a pre and post-

test (20 questions) on Pulmonary Medicine. This will be strictly for self-assessment and will not be factored into their final grade. Summative feedback: Student summative evaluations are done by fellows and faculty assigned to the Consult Services during the period of the course and is based on observed performance in regards to patient presentations, participation during rounds, and oral presentations on self-selected pulmonary topics Questions should be directed to Shrima Jones, via email at [shrima.jones@duke.edu](mailto:shrima.jones@duke.edu) or by phone at 919-684-0435. Dr. Marshall can be reached via email at [Harvey.marshall@duke.edu](mailto:Harvey.marshall@duke.edu). Credit: 4. Enrollment: min 1, max 1. *Harvey Marshall, MD and pulmonary staff*

**MEDICINE-431C. Adult Allergy and Clinical Immunology.** Enrollment Requisite: Students must contact Dr. Lugar prior to enrolling in the course. The adult allergy and clinical immunology elective consists of direct patient care, didactic sessions, independent readings and hands-on training of various clinical and laboratory test modalities that are used in clinical practice. This elective will provide exposure to patients with various allergic and immunologic disorders including allergic rhinitis, sinusitis, asthma, hypersensitivity pneumonitis, allergic conjunctivitis, diseases associated with autoimmunity, immunodeficiencies and allergic skin diseases. Additionally, the student will obtain hands-on practice with allergy skin testing as well as conducting other immunology labs. The schedule and content can be individualized on the basis of the student's needs and goals. Students must contact the course instructor, Dr. Patricia Lugar, [patricia.lugar@duke.edu](mailto:patricia.lugar@duke.edu), to arrange meeting location. Secondary contact: Jason Bullock at 919-613-5707. Credit: 4. Enrollment max: 1. *Patricia Lugar, MD*

**MEDICINE-434C. Outpatient Hematology-Oncology (Duke or Durham VA).** (1) Course Goals: To give the student experience in the diagnosis, long-term treatment, and supportive care of patients with hematologic and oncologic disorders in the outpatient setting. The use and interpretation of peripheral blood films and other specialized laboratory tests (e.g., bone marrow aspirate/biopsy, serum electrophoresis, coagulation studies, tumor markers, leukemia cell markers), as well as an approach to the evaluation and treatment of common hematologic problems (anemias, bleeding and clotting disorders, hematologic and solid tissue malignancies) are included. Issues such as quality of life and care of the geriatric oncology patient are addressed. (2) How Goals Are Achieved: The student is assigned a staff member as preceptor with whom to work in the Hematology/Oncology clinic one to three half- days per week in clinic, depending on the student's schedule and the availability of physicians in clinic. Alternatively, the student may work with several preceptors in the Hematology/Oncology clinic for five full days per week during a four week block. If desired, preceptors who concentrate mainly on hematology or oncology may be arranged. (3) Methods of Evaluation: Students are evaluated by their preceptors on the basis of their ability to obtain a history, perform a physical examination, evaluate hematologic and other laboratory data, and propose assessments and plans of action. NOTE: Students cannot drop the course 2 weeks prior to the course start date. For more information, please call Nyasia Lloyd at 684-2287 or via email, [nyasia.lloyd@duke.edu](mailto:nyasia.lloyd@duke.edu). Credit: 4. Enrollment: max 2. *Richard Reidel, MD, and Hematology, Medical Oncology and Cell Therapy staff*

**MEDICINE-435C. Gastroenterology.** (1) Course Goals: Primary - To provide an experience from which the student can develop a fundamental approach to the diagnosis and management of digestive diseases. (2). Goals Are Achieved: Through participation in the care of patients under the guidance of the fellows and faculty on the GI Consult Services (Duke Hospital),

Liver Service (Duke), Biliary Service (Duke), VA Hospital GI consults and Outpatient GI Clinics. (3) Methods of Evaluation: Evaluations are completed by the course director, attendings, and fellows working with the student and include assessment of clinical skills, fund of medical knowledge, and the ability to apply this knowledge to the care of patients. Course meets at 8:00 am, Monday through Friday. No holiday or weekend coverage for students. Prior to the start of rotations, students will receive an email detailing their specific schedule, assigned supervising fellow and meeting location. For more information, please contact Jill Rimmer at 684-2819 or via email at [jill.rimmer@duke.edu](mailto:jill.rimmer@duke.edu). Credit: 4. Enrollment: max 2. *Cecelia Zhang, MD and GI department staff.*

**MEDICINE-438C. Clinical Hematology and Oncology Consults (Duke or Durham VA).** (1) Course Goals: Students learn how to interpret peripheral blood films, how to use and interpret other specialized laboratory tests (e.g., bone marrow aspirate/biopsy, serum electrophoresis, coagulation studies, tumor markers, leukemia cell markers), and how to approach the evaluation and treatment of common hematologic problems (anemias, bleeding and clotting disorders, hematologic and solid tissue malignancies). (2) How Goals Are Achieved: Students receive a series of core lectures, gain familiarity with chemotherapy regimens and administration, and attend the ongoing clinical, research, and didactic divisional conferences. Clinical duties include the performance of inpatient consults under the supervision of a fellow and staff member. This course may be taken for four or eight weeks. (3) Methods of Evaluation: The students are expected to perform and present initial evaluations of consult cases including peripheral blood film on daily rounds, and to perform limited literature searches and evaluations of chosen clinical topics. For more information, please contact Nyasia Lloyd at 684-2287 or via email at [nyasia.lloyd@duke.edu](mailto:nyasia.lloyd@duke.edu). Credit: 4. Enrollment: max 2. *Richard Reidell, MD and hematology/oncology staff*

**MEDICINE-440C. Clinical Infectious Diseases.** The objectives of this course are learning principles in Infectious Diseases and Antibiotic Stewardship and will be specifically achieved through the consult service cases and teaching by the Infectious Disease Fellows and Attendings. The students will be able to work-up and present cases to Fellows and Faculty and attend multiple conferences that occur each week (Journal Clubs, Grand Rounds and Case Conferences). The basic principles of Infection Management and Antibiotic Stewardship will be taught by Fellow and/or Attending Physician and this education should provide a platform to utilize during house officer training and care in most medical and surgical specialties. The teaching methods will be: case presentations, rounding daily on the Infectious Diseases Service to hear all cases, attending Clinical Microbiology Rounds, and attending Infectious Diseases Conferences. This course strives to allow the student to appreciate the clinical “thought processes and principles around diagnosis and management of Infectious Diseases”. Grading criteria are subjective and the direct responsibility of the individual attending physician on the service. There are no objective tests to support the grade. The student is encouraged to be involved and attempt to learn as much as possible. This enthusiasm for learning is the expectation of Fellows and Faculty for the student. The reward will be knowledge. The feedback for the student may be gathered by direct interaction with the attending physician. NOTE: This elective requires students to complete some rotations at the VA Medical Center. Please note that you must complete the required VA paperwork no later than 30 days from the 1st day of your scheduled class in order to participate. Paperwork should be obtained from the course director or their designated staff. For more information, please call Dawn

Sikes at 668-6053 or email dawn.sikes@duke.edu. Credit: 4. Enrollment max. 6. *Micah McClain, MD/PhD*

**MEDICINE-442C. Clinical Arrhythmia Service.** (1) Course Goals: Primary - To provide students with an in-depth exposure to the diagnosis and management of cardiac arrhythmias, electrophysiologic studies, ablation of arrhythmias, cardiac pacemakers, and implantable defibrillators; to help students to understand the electrophysiologic events that result in arrhythmias and ECG changes. Special emphasis will be placed on ECG interpretation. This course is not designed to be a substitute for the general cardiology elective (MEDICINE 404C and 445C). Secondary - To familiarize the student with certain basic techniques of arrhythmia diagnosis; (2) How Goals Are Achieved: The student spends four weeks working on the Clinical Arrhythmia Service. The student makes rounds on the inpatient Clinical Electrophysiology Service on patients with arrhythmias. The student is encouraged to attend electrophysiologic studies and assist in the analysis of data from these studies. Attendance at electrophysiologic surgical procedures is also encouraged. The student is responsible for the work-up of patients admitted to the Arrhythmia Service as well as inpatient consults and plays an important role in the follow-up of these patients while they are in the hospital. The student may elect to see outpatients during Arrhythmia Clinics that meet on Monday, Tuesday, Wednesday, and Thursday in the PDC (Duke Clinic). The student assists in the evaluation of patients for permanent pacemaker and defibrillator implantation. Students are responsible for reviewing the literature on subjects related to the patients that they have seen on the clinical service. Didactic conferences are given on Monday and Wednesday mornings; (3) Methods of Evaluation: Students are evaluated on their clinical skills in taking histories, performing physical examinations interpretation of the ECG as well as in their presentation and assessment of the patient's problem. They are also assessed on their ability to read and understand the relevant literature and their ability to assume a responsible role in the care of patients on the Clinical Arrhythmia Service. Students should meet at Conference Room 7451A Duke North Hospital at 7:30 a.m. and page Dr. Grant (970-6656) if he is not there shortly after 7:30 a.m. **STUDENTS MUST CHECK IN WITH DR. GRANT OR HE WILL NOT BE ABLE TO COMPLETE THE GRADE EVALUATION FOR THE COURSE.** For more information, please email Dr. Grant at grant007@mc.duke.edu. Secondary Contact: Diane Mangum, 919-681-3815. Credit: 4. Enrollment: max 1. *Augustus Grant, M.B., CH.B., PhD ; Ruth Greenfield, MD; Tristram Bahnon, MD; and Sana Al-Khatib, MD/MHS*

**MEDICINE-444C. Clinical Heart Failure and Cardiac Transplantation.** This course is designed to allow the student to gain a broad experience in the fields of heart failure and cardiac transplantation. The student will participate in both inpatient rounds and outpatient clinics. There will also be an opportunity to participate in the surgical management of heart failure including the use of mechanical circulatory support devices, high-risk palliative cardiac surgical procedures and cardiac transplantation. The learning objectives of the course are supplemented by multidisciplinary rounds, cardiac transplant listing conference and cardiac pathology rounds. For more information, please contact Dr. Agarwal at richa.agarwal@duke.edu, or by phone, 919-684-3854. Secondary Contact: Patti Gentry (patti.gentry@duke.edu) or 919-684-3854. Credit: 4. Enrollment: max 2. *Richa Agarwal, MD and other Heart Failure Faculty*

**MEDICINE-445C. Consultative Cardiology.** (1) Course Goals: Primary - To refine and further develop the skills necessary for eliciting an accurate, complete CV history and for

performing an accurate, complete CV physical examination: To refine student understanding of normal and pathologic cardiovascular physiology while functioning in the role of a consultant for inpatients and outpatients with various cardiovascular problems; Secondary - to develop the skills necessary to quickly and accurately interpret ECGs (both 12-lead ECGs and rhythm strips). (2) How Goals Are Achieved: Students are assigned to the consult service at either the Durham VA Center or Duke, where, in concert with the resident, fellow and senior staff attending, they evaluate the operative risk for cardiac and non-cardiac surgery as well as make decisions concerning the evaluation and treatment of patients with a wide variety of heart diseases. Students participate in reading ECGs and a core curriculum experience including individually assigned times to work with HARVEY, the cardiology patient simulator, and various computer assisted instruction programs. (3) Methods of Evaluation: Students are evaluated by the resident, fellow, and senior staff with whom they work. The evaluation form is made available at the beginning of the elective. Depending on circumstances, students may also be evaluated by written and practical examinations at the beginning and/or end of the elective. NOTE: Students enrolled in this course may be required to complete their rotation at the DVAMC. The required paperwork for the DVAMC must be completed at least 30 days prior to the first day of classes for the section/term the student is enrolled. Contact the department to obtain required paperwork. For more information, please contact Dawne Smith, 668-1524 or via email at dawne.t.smith@duke.edu. Prerequisite: none. Credit: 4. Enrollment: max 5 (unless otherwise noted). *Anna Lisa Crowley, MD/FACC; and cardiology staff*

**MEDICINE-446C. Nephrology.** (1) Course Goals: Primary: To provide clinical experience in the diagnosis and treatment of patients with kidney diseases, fluid and electrolyte disorders, and hypertension. Secondary: To integrate physiology, immunology, pathology, and biochemistry into the evaluation and management of patients with renal disease. (2) How Goals Are Achieved: The students are integrated into the patient care team consisting of attending physician, nephrology fellows, and medical residents. They will participate in both inpatient and outpatient care of patients with a wide range of kidney diseases, fluid and electrolyte problems, and difficult to manage hypertension. Students will round on three major nephrology services: the Acute ICU Service which cares balanced exposure to all facets of nephrology including patients in the intensive care units at Duke, the Transplant Service which focuses on patients with kidney or combined kidney-pancreas transplants, and the Acute Floor Service which provides care to patient with acute kidney injury, acid base and electrolyte disturbances. The student participates in work rounds with the residents and fellows each day, daily rounds with the attending physician, and weekly nephrology conferences. These conferences include Journal Club where the latest clinical and basic science literature is reviewed, the weekly Nephrology Didactic Lecture Series focusing on pathophysiological principles of clinical nephrology, and Grand Rounds encompassing Pathology Conference, Clinical Case Conference, and seminars by fellows, faculty and/or visiting professors. This combination of broad-based clinical experience, coupled with formal didactics, provides the student with a comprehensive educational opportunity. (3) Methods of Evaluation: Written evaluation from faculty preceptor. For more information please contact Dr. Jessica Morris via email at jessica.morris.1@duke.edu or by phone at 681-2298. Students should meet on the first day at Duke Hospital, Dialysis Unit, 7th floor near 7900. Unit phone: 681-7800. Please meet promptly at 9:00 a.m. Acute Fellow page: 970-7746. Credit: 4. Enrollment: max 4. *Jessica Morris, MD, and nephrology staff*

**MEDICINE-449C. Geriatric Medicine.** 1) Course Goals: Primary - To enable the student to become familiar with the principles of caring for the geriatric patient. Secondary - To familiarize the student with the physiology and diseases of aging. (2) How Goals Are Achieved: This elective is offered by the interdepartmental faculty of the Division of Geriatric Medicine. The student works with faculty, fellows, and housestaff in a number of settings involved in the care of the geriatric patient. These include the Geriatric Evaluation and Treatment Clinic (Duke), Geriatrics Consultation Service (Duke Hospital), The Forest at Duke Clinic, Community Living Center (Durham VA Medical Center) and other subspecialty clinics. Principles to be stressed are biology and pathophysiology of aging, multiple clinical problems in the elderly, interdisciplinary team approach to evaluation, planning and treatment, goals of maximal functional achievement and independence for the elderly. Specific clinical problems that students encounter include dementia, delirium, polypharmacy, gait instability and falls, urinary incontinence, pressure sores, and chronic pain. The student participates actively in the work-up and management of patient's inpatient extended care and outpatient settings. Familiarity with the growing literature in geriatric medicine is encouraged. The student participates in seminars, lectures and team meetings at the appropriate sites. (3) Methods of Evaluation: Evaluation is by consensus of instructors and fellows at the various training sites and the papers submitted during the rotation and at the conclusion of the rotation. It is based on discussions and presentations throughout the course period. If students are registering for the course within 15 days of starting the rotation, they must contact Dr. Liza Genao at 919-970-8965 to notify her of their late registration and request permission to enroll. Permission will be based upon availability of clinical experiences for the team identified. No students will be accepted for registration after 4PM on the Wednesday before a Monday rotation start. As noted above, students registering within 15 days of the rotation start are expected to call the Dr. Genao immediately to notify her and request permission. Prerequisite: Successful completion of first and second year of medical school. NOTE: Students taking this course may be required to complete rotations at the Durham VA Medical Center. Please contact the department to obtain the required paperwork. Paperwork must be completed 30 days prior to the first day of the section in which the student is enrolled. Students that have not completed the paperwork will not be allowed to work at the Durham VA Medical Center. Course contact: Dr. Liza Genao, (liza.genao@duke.edu). Secondary contact: Dr. Gwendolen Buhr (gwendolen.buhr@duke.edu). Credit: 4. Enrollment: max 1. *Liza Genao, MD; Gwendolen Buhr, MD; Mitchell Heflin, MD/MHS; Kenneth Lyles, MD; and other staff*

## **Neurology**

**NEURO-401C. Neurology Sub-Internship.** (1) Course Goals: To provide a neurological patient care experience at the intern level. Students have the opportunity to apply neurological examination skills learned in the second year to direct patient care situations. Students are exposed to a variety of neurological problems, procedures, and therapies. This course is recommended for the student interested in neurology, psychiatry, internal medicine, neurosurgery, neuropathology or ophthalmology. (2) How Goals Are Achieved: Students are assigned to a Duke Hospital inpatient neurology service for two or four weeks with an option to be assigned to the Neuroscience intensive Care Unit for two weeks. Students attend Neuroscience Grand Rounds, Neurology Subspecialty Conferences and participate in all ward or NICU activities. Full time participation is expected. (3) Methods of Evaluation: Resident and staff physicians provide a written evaluation and grade. For more information, please contact Chris Berry via email at christine.berry@duke.edu

or by phone. Prerequisite: Neuro 205C or 402C. Permission is required. Credit: 5. Enrollment: max 2. *Jordan Mayberry, MD and neurology faculty.*

**NEURO-402C. Neurology Clerkship.** This course is restricted to those students who did not take a Neurology clerkship (Neuro 205C or 206C) in their second year. It provides the student with a firm understanding of the neurological examination, formulation of clinical neurological problems, and practice with written and oral communications in a hospital setting. The student has the opportunity to apply the neuroanatomy, neurophysiology, neurochemistry, and neuropathology learned in the first year to the evaluation and care of his or her patients. The patients are drawn from the neurology services at Duke Hospital or the Durham VA Medical Center. The students elicit a history and perform a physical examination. The student records the findings in the hospital charts and presents the findings at regular staff rounds. The student then participates with a clinical team of faculty and house officers in the hospital evaluation of the patients. The student is encouraged to participate in all diagnostic procedures such as lumbar puncture. The student has the opportunity to follow patients through neuro-radiological and neuro-surgical procedures forming part of evaluation and treatment. The specific expectations for the student are: (a) to perform and record a competent neurological and history examination on each admitted patient; (b) to be competent in the hospital management of neurological patients including diagnostic evaluations such as hematological and urine evaluations, lumbar puncture and appropriate electrical studies; (c) to assume responsibility as the primary care person for his or her patients; (d) to participate in daily work rounds with an assigned team of house officers and faculty; (e) to be sufficiently knowledgeable to participate in patient care decisions; (f) to attend faculty attending rounds and to present patients to faculty within 24 hours after admission; and (g) to participate in neurology service rounds and conferences during the course. A written evaluation is provided to the students by faculty and house staff. For more information, please contact Christine Berry via email at [christine.berry@duke.edu](mailto:christine.berry@duke.edu). VA student credentialing is required prior to registration. Permission is required. Credit: 4. Enrollment: max 1. *Karissa Gable, MD and neurology faculty*

**NEURO-404C. Consultative Neurology.** (1) Course Goals: To introduce senior medical students to the diagnostic and treatment issues encountered on the consultative neurology service. (2) How Goals Are Achieved: The student becomes part of the inpatient neurology consultation team either at Duke Hospital or the Durham VA Medical Center. This team consists of rotating neurology faculty as well as a neurology and/or medicine house officer. Consultations are performed by the student under the guidance of the house staff and then are presented to the attending on rounds. The student is responsible for performing a neurologic history and physical as well as assisting in the interpretation of all important laboratory data. The student continues to follow the patient's course as required. The student also attends rounds when other patients are presented by the house officers. Appropriate reading material is utilized to compliment the clinical experience. Attendance at Neurology Grand Rounds and various Neurologic Subspecialty Conferences is required. (3) Method of Evaluation: Standard written evaluation by faculty supervisor with house staff input. VA student credentialing is required prior to registration. Permission is required. Credit: 4. Enrollment: max 1. For more information, please contact Christine Berry via email, [christine.berry@duke.edu](mailto:christine.berry@duke.edu). *Karissa Gable, MD and neurology faculty*

## Neurosurgery

**NEUROSUR-401C. Sub-Internship in Neurological Surgery.** This course is designed for those students with a career interest in neurological surgery. Duties include the work-up and care of inpatients, evaluation of clinic patients, assistance in the operating room, daily rounds, and approximately every 3rd-night call. Students will be expected to assume intern-level responsibilities. Students round with the neurosurgical team in the mornings then participate in the OR or attend one of the neurosurgery clinics after rounds. Students attend the Wednesday academic day neurosurgical conferences covering topics within neurosurgery, neurology, neuropathology and neuroradiology, as well as twice monthly Brain School conferences. For more information, please contact Sherolyn Patterson at 684-3053 or contact her via email, sherolyn.patterson@duke.edu. First Day of Classes: Students are to meet the residents in the neurosurgery work room at 5:45 am, 2B18, Central Duke Tower; 8 West Room 66, Duke Medical Pavilion. Credit: 5. Enrollment max: 5. Course Director: *Steven Cook, MD; Alan Friedman, MD (Chairman); Allan Friedman, MD; John Barr, MD; Patrick Codd, MD; Peter Fecci, MD, PhD; Herbert Fuchs, MD, PhD; Fernando Gonzalez, MD; Rory Goodwin, MD, PhD; Oren Gottfried, MD; Michael Haglund, MD, PhD; Erik Hauck, MD; Isaac Karikari, MD; Jordan Komisarow, MD; Nandan Lad, MD, PhD; Christopher Shaffrey, MD; Derek Southwell, MD, PhD; Khoi Than, MD; Eric Thompson, MD; Dennis Turner, MD; Matthew Vestal, MD; Chester Yarbrough, MD; and Ali Zomorodi, MD*

**NEUROSUR-404C. Neuro-Oncology.** This 4-week advanced rotation will provide medical students an opportunity to experience to Medical Neuro-Oncology. Students will rotate in the Brain Tumor Center (BTC) Clinic, located in Cancer Center Clinic 3-1, with medical neuro-oncology faculty. Students will develop a clinical foundation in the care of brain tumor patients and will have the chance to care of patients during all times of the illness trajectory (at diagnosis, during treatment, stable disease, at tumor progression, and transitioning to palliative care). Attendance at weekly neuro-oncology tumor board, weekly neuropathology consensus conference, monthly journal club, monthly research educational meeting, and monthly interesting case conference are encouraged for all students in this rotation. For more information, please contact Dr. Peters via email at katherine.peters@duke.edu or you may contact her assistant, Kelly Seagroves at kelly.seagroves@duke.edu or by phone, 919-684-6173. Permission is required. Credit: 4 credits. Enrollment max.: 1 student. *Katy Peters, MD PhD FAAN Other faculty: David Ashley MD, Patrick Codd MD, Steven Cook MD, Annick Desjardins MD, Peters Fecci MD, Allan Friedman MD, Henry Friedman MD, Margaret Johnson MD, Mustafa Khasraw, MD, Daniel Landi MD, and Dina Randazzo DO. Students will also interact with staff in the Preston Robert Tisch Brain Tumor Center, Neuropathology faculty, and Neuro-Oncology Fellows.*

## Obstetrics and Gynecology

**OBGYN-405C. Gynecologic Cancer Sub-Internship.** This course presents a clinical experience in the management of patients with a gynecologic malignancy. This will include operating room, inpatient unit and clinic experiences. The student assumes the role of a sub-intern. Outpatient, inpatient, and operative exposure to these patients is extensive. The student should report to the 6300 work room at 6:00am. Credit: 5 Enrollment: max 1. *Brittany Davidson, MD;*

*Andrew Berchuck, MD; Brittany Davidson, MD; Laura Jean Havrilesky, MD; Paula Sowon Lee, MD; Rebecca Previs, MD; Angeles Alvarez Secord, MD; Kim Nolte, PA-C; and gynecologic oncology fellows*

**OBGYN-407C. Female Pelvic Medicine and Reconstructive Surgery Sub-Internship.** For students preparing for obstetrics and gynecology, general practice, surgery, and urology. Emphasis is placed on the outpatient assessment and inpatient or ambulatory management of patients with acute and chronic Urogynecologic disorders including pelvic floor dysfunction, pelvic organ prolapse, urinary and fecal incontinence, and others. Students have the opportunity to work closely with faculty members in the Division of Urogynecology. Participation in the operative care of Urogynecologic patients is desired. Time for independent study is planned. The student is expected to utilize this time to review and present a specific clinical problem with frequent guidance and input from a member of the Urogynecology Division with similar interests. Credit: 5. Enrollment: max 1. Contact: Alison.weidner@duke.edu. Enrollment Max. 1; Credit: 5. Prior to the first day, the student should contact Cynthia Paylor, Duke Urogynecology, 5324 McFarland Drive, Suite 310, Duke Medicine Patterson Place, Durham, NC 27707; Phone: 919-401-1001. Students meet at the Patterson Place location at 8:30am on the first day of the rotation. *Alison Weidner, MD; Cindy Amundsen, MD; Matthew Barber, MD/MHS; John Jelovsek, MD; Amie Kawasaki, MD; Nazema Siddiqui, MD; Anthony Visco, MD; and urogynecology fellows*

**OBGYN-408C. Minimally Invasive Gynecologic Surgery.** For students preparing for obstetrics and gynecology, general practice, and surgery. Emphasis is placed on the outpatient assessment and inpatient or ambulatory management of patients with acute and chronic gynecologic disorders including menorrhagia, dysmenorrhea, myomas, endometriosis, and others. Students have the opportunity to work closely with faculty members in the Division of Minimally Invasive Gynecology (MIGS). Participation in the preoperative, surgical, and post-operative management of MIGS patients is another critical aspect of the rotation. Time for independent study is planned. The student is expected to utilize this time to review and present a specific clinical problem with frequent guidance and input from a member of the MIGS Division with similar interests. Credit: 4. Enrollment: max 1. *Arleen Song, MD; Amy Broach, MD; Andrew Rivara, MD; and Craig Sobolewski, MD.* Contact: Arleen.song@duke.edu

**OBGYN-447C. Clinical Obstetrics Sub-Internship.** This course is for students preparing for general practice of medicine, pediatrics, or obstetrics and gynecology. This course studies the relationship of clinical factors during pregnancy, labor, and delivery. Emphasis is placed on abnormal conditions of pregnancy as related to the infant. Current problems in the maternal-fetal relationship are outlined. The student functions on an intern level and takes part in activities of the house staff and faculty in the inpatient and outpatient arenas. Opportunities for experience in prenatal ultrasound, diagnosis and genetic counseling available. Meet on the 5th floor of Duke Hospital, L&D workroom at 6:45AM on the rotation's first day (rounds begin at 7:10AM). For more information, please contact Dr. Sarah Dotters-Katz at sarah.dotters-katz@duke.edu. Secondary Contact: Cescille Gesher (cescille.gesher@duke.edu). Credit: 5. Enrollment: max 2. *Dr. Sarah Dotters-Katz, MD and Brenna Hughes, MD*

## Ophthalmology

**OPHTHAL-422C. General Ophthalmology.** A clinical preceptorship in which the student participates and observes the regular house staff activities including night call, conferences, lectures, patient care, and treatment including surgery. The use of specialized ophthalmic apparatus is emphasized. Students should report to the 2nd floor lobby of the Duke Eye Center, Hudson Building @ 8:30am to see Alethea Barnette(alethea.barnette@duke.edu). Credit: 4. Enrollment: max 4. *Jullia Rosdahl, MD/PhD*

## Orthopaedics

**ORTHO-429C. Sub-Internship in Orthopaedic Surgery.** A full educational experience in orthopaedic surgery with duties and responsibilities similar to a first year resident. Students will have the opportunity to rotate through various orthopaedic subspecialties including trauma, joint arthroplasty, sports medicine, and foot and ankle. Inpatient care, outpatient examination, operating room experience, and emergency room call are expected. Individual or group discussions are conducted each day with attending staff/residents. Conference attendance and emergency room call are required. For more information and to obtain a permission number, please contact Wendy Thompson at wendy.thompson@duke.edu or 684-3170. NOTE: This course requires that students complete one week of rotations at the VA Medical Center. Students must complete the required paperwork no later than 30 days prior to the first day of the section in which they are enrolled. Failure to do so may result in the student not being eligible to participate in the elective or sub-internship experience. Permission is required. Credit: 5. Enrollment: max 4 for 4 weeks. Summer section 41, maximum of 2 students. Interested visiting students must contact the Visiting Student Coordinator, scott.campbell@duke.edu, to inquire about the process for applying. *Elizabeth W. Hubbard, MD and orthopaedic staff and house staff*

## Otolaryngology

**OTOLARYN-401C. Sub-Internship in Otolaryngology Head and Neck Surgery.** This course is a full educational experience in OHNS with duties and responsibilities similar to a first year resident. This course provides the student with a comprehensive survey of clinical activities, inpatient care, assisting in the operating room and emergency room call. The student participates in ward rounds and in various conferences held by the Department. At the end of the rotation, the student will present at Grand Rounds Conference a 20-30 minute presentation on the topic of his/her choice (usually based on a patient the student has taken care). For more information on where to report or questions, please email Dr Kahmke (russel.kahmke@duke.edu). Credits: 5. Enrollment max: 2. *Russel Kahmke, MD*

**OTOLARYN-403C. Clinical Otolaryngology.** This 4-week course provides the senior student with a comprehensive survey of clinical otolaryngology, from oncology to pediatrics to otology to laryngology. Duties include intern-level participation in both outpatient clinic activities and inpatient care, including assisting in the operating room. The student participates in daily ward rounds and in weekly conferences held by the division. Students are expected to schedule call each week and give a 15-20 minute grand rounds style presentation on their selected OHNS topic at the

end of the rotation. Students should report at 6:30 a.m. on 6300 for the first day of classes. For more information on where to report or basic questions, please refer to the OHN consult pager, 970-1320 or contact Lori Allsbrook (lori.allsbrook@duke.edu) or 919-681-6588. Credit: 4. Enrollment: max: 2. *Russel Kahmke, MD*

## Pathology

**PATHOL-423C. Autopsy Pathology.** The course is intended to introduce students to the autopsy as an investigative tool. Anatomic-clinical correlation is emphasized. Students work directly with one or more members of the pathology department. They first view autopsies and then assist in the performance of autopsies under supervision. They work up these cases with particular attention to correlations with clinical and experimental medicine, help prepare the final autopsy reports, and work essentially at the level of a house officer. Students are expected to write up one full autopsy report for an autopsy they participated in as their final project. For more information, please contact: Meridith Hennessey, M.H.S., meridith.hennessey@duke.edu. Credit: 4. Enrollment: max 2. *Carolyn Glass, MD*

**PATHOL-448C. Practical Surgical and Cytopathology.** This course is intended as an introduction to the practice of diagnostic surgical pathology. Clinical and morphologic aspects of disease are emphasized in rotations through the different specialty services (GI, Gyn path Hemepath, Neuropath, etc.) Students will participate (with residents and staff) in the evaluation of gross specimens, interpretations of glass slides (with ancillary studies), and the preparation of the final report. The course can be tailored to individuals planning a career in pathology or those pursuing other specialties. Rotations through the Fine Needle Aspiration and Exfoliative Cytology services can be scheduled depending on the student's interest. Please contact Dr. Hall at least two weeks prior to starting the rotation, at allison.hall@duke.edu. Secondary contact: Jawanna Bell (jawanna.bell@duke.edu). Students meet on the first day in the pathology department at 9:00 a.m. Credits: 4. Enrollment: max 2. *Allison Hall, MD and staff*

## Pediatrics

**PEDS-402C. Pediatric Gastroenterology.** This course offers an excellent clinical and endoscopic exposure in the field of pediatric gastroenterology with significant opportunity for one to one interaction with the pediatric GI faculty. The student spend majority of the time in the outpatient setting and the interested student will be exposed to the inpatient setting. For more information, please call Dr. Venkat 684-5068. Administrative contact is Cheryl Chervinko, 919-684-4831 or 919-668-2577. Credit: 3-4. Enrollment max: 1. Note: Students that have previously taken the two-week selective, PEDS 228C, are not eligible to enroll in PEDS 402C. *Narayan Venkatasubramani, MD/MRCPH/ MBBS; Richard Noel, MD/PhD; Leon Reinstein, MD; Megan Butler, MD, Nancy McGreal, MD; Mary Boruta, MD; Rajitha Venkathesh, MD*

**PEDS-411C. Pediatric Emergency Medicine.** The 4th fourth-year elective in Pediatric Emergency Medicine is designed to enhance the medical student's learning by allowing the student to develop a proficient and rational approach to the sick child pediatric patient. The student will become familiar with the rapid assessment of ill patients and the development of a knowledge base

and technical skills allowing for the management of pediatric emergencies. Also, the student will learn how to prioritize patient care, to recognize patients requiring emergent interventions, and to decide which patients need admission or outpatient care. By the end of the rotation, the student will be capable of (1) obtaining an appropriate problem-oriented history and physical, (2) creating a differential diagnosis based on available information, and (3) developing an appropriate management plan. Students will be contacted by Dr. Ellis via email approximately 1-to-2 one-to-two weeks prior to the start date of their rotation with orientation materials. Prompt reply to this email is expected as time-sensitive information will be included. Students are to report to the Pediatric Emergency Department at Duke University Medical Center no later than the time of his/her first scheduled shift. Students will be expected to work four 8-hour shifts per credit hour requested with each shift being eight hours. Students are expected to attend required didactic sessions/activities during the entire four-week 4-week block, even if scheduled for fewer than 4 four credits. Required activities have historically included simulation and didactic lectures on various mornings (depending on the particular month). If students are unable to attend these sessions, additional assignments must be completed in order to pass the rotation. Students are allowed to ask for 3 three off-days during their month (with an additional 2 two requests during interview season). These are by no means guaranteed, but every effort will be made to accommodate these requests. Schedule requests for time away must be cleared by the elective course director four FOUR weeks before the start date of the rotation. Permission of the instructor is required for enrollment. Requests to drop the course must be approved at least four FOUR weeks prior to the start of the scheduled rotation. Failure to do so may result in a failing grade for the course. Please contact Dr. Donald Ellis (course director) for questions. NOTE: It is sometimes possible that the course director may be able to accommodate an additional student for any single term. If the course is shown as "full" in DukeHub and you are interested, you are encouraged to contact Dr. Ellis (donald.ellis@duke.edu) to inquire. Permission is required. Variable Credit: 3-4 credits. Enrollment max: 2. *Donald Ellis, MD; W. Clay Bordley, MD, MPH; Kyle Cecil, MD; James Fox, MD; Emily Greenwald, MD; Rachel O'Brian, MD; MD; Emily Sterrett, MD, MS-CTR; Neel Subramanian, MD; and Linton Yee, MD*

**PEDS-413C. Pediatric Pulmonary and Sleep Medicine.** This course provides three to four weeks of experience in the evaluation, diagnosis, management of patients with respiratory and sleep related problems. Students will work closely with the pediatric pulmonary team both in the clinic and the inpatient services. Students will have the opportunity to provide the initial assessment and management plans for patients referred for pulmonary or sleep problems. For more information or questions, please contact Dr. Richard Kravitz, (richard.kravitz@duke.edu). Pre-requisite: Permission of the instructor is required for enrollment. Credit: 3-4; Maximum Enrollment: 1. *Richard Kravitz, MD and faculty in the Division of Pulmonary and Sleep Medicine*

**PEDS-421C. Pediatric Infectious Diseases - Comprehensive.** This course provides three to four weeks of experience in the evaluation, diagnosis, management and follow-up of patients with possible infectious diseases. Students will work closely with the infectious disease team on the general infectious diseases service, especially the fellow and attendings, both in the clinic and inpatient service. They will have the opportunity to provide the initial assessment and management plans for patients referred to pediatric infectious diseases. There may be an opportunity to spend some time with the transplant infectious diseases term. Students that take this course are not eligible to enroll in PEDS 420C. For more information, please contact Dr. Drucker at

Robert.drucker@duke.edu. Secondary contact: Dr. Steinbach, 684-6335. Administrative contact is Betsy Faust (betsy.faust@duke.edu), 684-6335. Students should meet on the first day at Dr. Drucker's Office T0919, Children's Health Center) at 8:00 a.m. Peds ID fellow pager: 970-7420. Permission is required. Credit: 3 to 4. Enrollment: max 2. *Robert Drucker, MD, Amelia Thompson, MD; and division faculty*

**PEDS-425C. Endocrine Disorders in Children.** Students participate in the Pediatric Endocrine, Diabetes, Lipid, Transgender and Insulin Resistance/Obesity Clinics and assume active roles in the evaluation and management of in-patient consultations and of in-patients admitted to the Endocrine Service. Emphasis is placed upon the evaluation of several endocrine issues, including diagnosis and management of Type 1 and Type 2 Diabetes Mellitus, growth and sexual development, transgender management, lipid disorders, thyroid disorders, pituitary disorders, and calcium and vitamin D disorders. Students will complete a pediatric endocrine handout during their rotation, which will cover core topics. Students also participate in a monthly diabetes journal club and in weekly intra- and interdepartmental endocrine clinical and research conferences. Students will make a presentation to the endocrine group at the end of the rotation. Students will start the rotation at Lenox Baker Hospital on their first Monday, at 9AM. They should email Dr. Robert Benjamin, course director, to confirm this the week prior to their rotation. His contact email is robert.benjamin@duke.edu. Credit: 3 to 4, with 1 credit for every week of the course. Enrollment: max 1. *Robert Benjamin, MD; Michael Freemark, MD; Deanna Adkins, MD; Nancie J. MacIver, MD/PhD; Laura Page, MD; and Pinar Gumus, MD*

**PEDS-427C. Pediatric Hematology/Oncology.** This course includes all aspects of clinical and laboratory hematology (with a focus on sickle cell disorders) as well as the diagnostic evaluation, care, and treatment of patients with malignant diseases (childhood leukemia, lymphoma, osteosarcoma, neuroblastoma, Wilm's tumor). Emphasis will be placed on fundamental concepts of pediatric hematology/oncology. Students will spend their time in the pediatric hematology-oncology and pediatric neuro-oncology outpatient clinics evaluating new patients and seeing established patients. Students will be expected to attend divisional teaching conferences. Students will be asked to research a specific topic of their choice and deliver a short presentation at the end of their rotation. Location: Hanes House, room 382; Box number 102382. For more information please contact Dr. Kreissman via email at susan.kreissman@duke.edu. Prerequisite: Interested students must contact the course director. For questions, please contact Chenelle Headley (chenelle.headley@duke.edu). Credit: 4. Enrollment: max 1. *Susan Kreissman, MD; Dan Landi MD; Corinne Linardic MD/PhD; Kristi Pahl, MD; Jennifer Rothman MD; Nirmish Shah MD, Kristin Schroeder MD; Jessica Sun MD; David Van Mater, MD/PhD; and Lars Wagner, MD*

**PEDS-429C. Pediatric Rheumatology – Comprehensive.** This course provides three to four weeks of experience in the evaluation, diagnosis, management, and follow-up of patients with possible rheumatologic diseases. Students will work closely with the pediatric rheumatology team, especially the fellow and attendings, both in the clinic and inpatient service. They will have the opportunity to provide the initial assessment and management plans for patients referred to pediatric rheumatology. Enrollment Max: 2; Credit: 3-4. Permission of the Instructor is required for enrollment. Students should meet at 8:00am on the first day and they must contact Dr. Dvergsten in advance to confirm meeting location. The class meets M-F. For more information,

students must contact Dr. Dvergsten at [jeffrey.dvergsten@duke.edu](mailto:jeffrey.dvergsten@duke.edu). *Jeffrey Dvergsten, MD; Rebecca Sadun MD; and all faculty in the Division of Pediatric Rheumatology*

**PEDS-430C. Healthy Lifestyles Program: A Clinical, Family-Based Approach to Pediatric Obesity.** Comprehensive outpatient treatment for childhood obesity. Through observed and direct interactions with families, children and adolescents in an outpatient clinical setting, students will learn the causes and complications of pediatric obesity, and the approach to management. Healthy Lifestyles is a multidisciplinary clinic which allows students to interact with and observe pediatricians, nutritionists, physical therapists and mental health providers. Students are expected to attend clinic Monday through Friday, according to a calendar which will be provided by the course director at the start of the rotation. While students will receive training in motivational interviewing (MI), an evidence-based communication technique to achieve effective behavior change during this rotation, a familiarity with MI and good communication skills are strongly preferred as the clinical environment is considered an advanced communication skills rotation. Students will be expected to participate actively in weekly noon team learning seminar (Thursdays) and to present a topic of the student's choice near the end of the rotation. Lastly, the course director will provide students with a reading list on pertinent topics to be completed by the end of the rotation and discussed with course director during final feedback session. Report to Duke Children's Primary Care Clinic, 4020 Roxboro Road, second level. Students will be required to attend and participate in ONE session of a community fitness program for children, called Bull City Fit. Students will play games, sports, and/or participate in cooking classes with families. From this experience, students will gain an understanding of community engagement, health advocacy and program planning. For questions, email the course director, Dr. Sarah Armstrong ([sarah.c.armstrong@duke.edu](mailto:sarah.c.armstrong@duke.edu)) and secondary contact, Team Lead Katherine Caro PA-C ([katherine.caro@duke.edu](mailto:katherine.caro@duke.edu)), support staff Kim Yancey ([Kim.yancey@duke.edu](mailto:Kim.yancey@duke.edu)) Credit: 4. Enrollment: max. 1. *Sarah Armstrong, MD; Gabriela Maradiaga Panayotti, MD; Martha Nelson, PA-C; Katherine Caro, PA-C; Jenny Favret, MS, RD, LDN; Stephanie Bryant, MPH, RD, LDN; Andrea Hartzell, PT, DPT, MHS; Heidi Pongracz, MPH, PT; Victoria Smith, PT, DPT, PCS; Lisa Honeycutt, LPC*

**PEDS-431C. Clinical Pediatric Cardiology.** This Medical Student rotation provides a learning experience in the clinical diagnosis and management of heart disease in children. The student will have the opportunity to see and participate in the management of children referred for cardiology evaluation or follow-up via clinic or consultation. There are also experiences available observing cardiovascular procedures in the Pediatric Cardiac Catheterization and Electrophysiology Laboratory, the Pediatric Echocardiography Laboratory and the operating room. Cardiology clinics are located in Raleigh, Apex, Greensboro, in addition to the Children's Health Center, and assignments can be expected in many of these clinics to create a diverse experience. This is primarily an outpatient rotation, but there is the option of attending inpatient rounds in the Pediatric Cardiac Intensive Care Unit if desired. Experiences in subspecialty clinics such as Pediatric Heart Failure/Transplant and Inherited Arrhythmia clinic are generally available if interested. Please note that procedural experiences are all observational due to complexity (participation is generally a Fellow level experience). Scope: history, physical examination, and special diagnostic techniques (echocardiography, electrocardiography, cardiac catheterization, and cineangiography). Students participate in outpatient clinics or procedural observational experiences five days per week as well as weekly cardiology/cardiovascular surgery conference.

Prerequisite: PEDS 205C. For more information please call the course director, Dr. Zebulon Spector, at 919-681-6772 or by email, zebulon.spector@duke.edu. Secondary Contact: Dr. Michael J. Campbell, michael.campbell2@duke.edu, or 919-684-3574. Credit: 4. Enrollment: max 1. *Zebulon Spector, MD; Other faculty: Piers C.A. Barker, MD; Richard J. Boruta, MD; Michael G.W. Camitta, MD; Michael J. Campbell, MD; Michel P. Carboni, MD; Gregory Fleming, MD; Kevin Hill, MD; Salim F. Idriss, MD/PhD; Sonja Kirmaini, MD; Andrew Landstrom, MD, PhD; Jennifer S. Li, MD; Andrew McCrary, MD; Angelo Milazzo, MD; Stephen Miller, MD; Patsy Park, MD; Gregory Tatum, MD; and Rachel Torok, MD*

**PEDS-433C. Allergy and Clinical Immunology.** Clinical appraisal and practice in use of methods of diagnosis and treatment of allergic and immunologic disorders including the atopic diseases, immunologic deficiency states, and bone marrow transplantation. Scope: in-depth seminars, history, physical examination, skin testing, a variety of clinical immunologic tests, and Clinical Research Unit experience. For more information please contact the Program Director, Dr. Amy Stallings via email at amy.stallings@duke.edu. An alternate contact is Debra Preddy. You may reach her via email at debra.preddy@dm.duke.edu. Please contact Debbie Preddy at least one week prior to your rotation to set up a meeting to receive information packet and information about where to go on first day Credit: 4. Enrollment: max 2. *John Sleasman, MD (Division Chief), Amy Stallings, MD; Rebecca Buckley, MD; Talal Mousallem, MD, M. Louise Markert, MD/PhD, and Julie Kim-Chang, MD*

**PEDS-434C. Clinical Genetics/Metabolism.** The student becomes familiar with evaluation and management of various genetic disorders including malformation syndromes and biochemical disorders. History-taking, pedigree construction and analysis, specialized aspects of the dysmorphological physical examination, diagnostic techniques, routine and specialized laboratory methods (cytogenetic, biochemical, molecular), and reference materials (texts and computer programs) are covered. Students participate in weekly teaching and clinical conferences. For more information please call 684-2036. First Day of Classes: Students should meet at the Genetics Clinic at 8:00 a.m., CHC level 2, Room 2924A. Credit: 4. Enrollment: max 2. *Marie McDonald, MD*

**PEDS-436C. Pediatric Neurology.** Students will partake in the evaluation and management of both hospitalized and ambulatory pediatric patients with neurological disorders. Emphasis is placed on the neurodevelopmental history, neurological examination, the use of laboratory tests and radiological tools and pharmacotherapy in the diagnosis and management of childhood neurological disorders. Administrative contacts: Kristin Johnson (kristin.johnson@dm.duke.edu) at 681-4658. Students should report to the PEDS Neuro office in the CHC room T0913. Please meet promptly at 8:00 a.m. Pre-requisite: students must contact Dr. Kansagra (sujay.kansagra@duke.edu) prior to enrollment. Credit: 4. Enrollment: max 2. *Sujay Kansagra, MD*

**PEDS-440C. Advanced General Pediatrics-Intensive Care.** This advanced course is designed to allow students a four-week experience in the Pediatric Intensive Care Unit (PICU). Clinically, students will first have a several day period of shadowing non-physician ICU staff (RNs, RTs, SWs), followed by several weeks of participating in the physician team caring for PICU patients. Overnight and weekend call is not expected. Academically, students are asked to choose a project (written case presentation or critical appraisal of a published study) to be

completed by the end of the rotation. Emphasis is placed on the development of the pathophysiologic approach to the diagnosis and therapy of a broad spectrum of pediatric illnesses as they present in acute care settings. Pre-requisite: PEDS 205C. Credit: 4. Enrollment: max 1. For more information, please contact Dr. Rehder via email at [kyle.rehder@duke.edu](mailto:kyle.rehder@duke.edu). Dr. Rehder can also be paged at 970-7195, or if unable to reach Dr. Rehder, students may contact Alicia (Lisa) Bynum ([alicia.bynum@duke.edu](mailto:alicia.bynum@duke.edu), at 681-3550. *Kyle Rehder, MD; Sameer Kamath, MD; Karan Kumar, MD; Palen Mallory, MD; Caroline Ozment, MD; David Turner, MD; Kevin Watt, MD; and Kanecia Zimmerman, MD, MPH*

**PEDS-441C. Pediatric Nephrology.** Students actively participate in assigned patient care, and prepare didactic presentations as a part of instruction. Clinical work provides the students with exposure to clinical nephrology and basic renal physiology. The course will provide experience in diagnosis, interpretations of laboratory tests, natural history, and treatment of acute and chronic disorders of the kidney in children. The student will participate in the management of fluid and electrolyte disorders in infants and children. Consultative services are provided for inpatients and outpatients from general and subspecialty disciplines in pediatrics, intensive care units, and the transplant services. For more information, please contact Dr. Wigfall at 684-4246 or via email at [wigfa001@mc.duke.edu](mailto:wigfa001@mc.duke.edu). Credit: 4. Enrollment: max 1. *Delbert Wigfall, MD; Eileen Chambers, MD; Annabelle Chua, MD; R. Gbadegesin, MD; Reeti Kumar, MD; and Shashi Nagaraj, MD/MBBS*

**PEDS-446C. Pediatric Stem Cell Transplant Unit.** This four week elective is designed to give medical students experience in all aspects of clinical hematopoietic stem cell transplantation including the diagnostic evaluation, care, and treatment of transplant patients. Emphasis is placed on fundamental concepts of hematopoietic stem cell transplantation. Students will accompany the inpatient team on the ward rounds for 3 weeks of the rotation with the remaining time spent in the clinic evaluating new patients and seeing established patients. Students also are expected to attend divisional teaching conferences and give informal presentations on topics in hematopoietic stem cell transplantation. Students should join the Division meeting on Monday at 8:00 a.m. in the Division offices on the first floor of the Old Duke Credit Union (1400 Morreene Rd) on the first day of classes. For more information, contact Dr. Martin at [paul.martin@duke.edu](mailto:paul.martin@duke.edu), or pager, 970-3758. Secondary contact: Tim Driscoll, 668-1120. Credit: 4. Enrollment: max 2. *Paul Martin, MD/PhD; Joanne Kurtzberg, MD; Tim Driscoll, MD; Suhag Parikh, MD; Vinod Prasad, MD; and Kristin Page, MD*

## **PSYCHIATRY**

**PSYCHTRY-401C. Sub-Internship in Psychiatry.** This course is an intensive clinical experience in the diagnosis and treatment of severe and incapacitating psychiatric disorders. The student is given more clinical responsibility than the comparable second year inpatient rotation. Patient care responsibilities include management of ward milieu. Treatment approaches emphasizing psychotropic medication, individual, and family psychotherapy are part of the clinical experience. Participation at patient care conferences and didactic lectures is expected. Call is taken on the weekend. For more information, please contact Dr. Shelley Holmer via email at [shelley.holmer@duke.edu](mailto:shelley.holmer@duke.edu). Pre-requisites: instructor approval and satisfactory completion of PSC-205C (or equivalent for visiting students). Secondary contact: Kamara Carpenter, email at

kamara.carpenter@duke.edu or phone at 681-9632. Credit: 5. Enrollment: max 2. *Shelley Holmer, MD*

**PSYCHTRY-407C. Sub-Internship in Internal Medicine-Psychiatry.** This course is an intensive clinical experience in the diagnosis and treatment of acute co-morbid medical and psychiatric disorders requiring acute hospitalization. Students participating in this four-week elective based in Duke University Hospital are expected to function at intern-level, assuming care of a small census of complex patients. The Medicine/Psychiatry faculty on the GenMed 12 service provides direct supervision. The goal of the elective is to refine and then clinically apply basic knowledge from the fields of Internal Medicine and Psychiatry. Participation at selected case conferences and didactic sessions is expected. Students are invited to attend the intern lecture series during Psychiatry Academic Half-day and educational offerings in Internal Medicine, including Intern Report. Call is taken in both Medicine and Psychiatry in alternating fashion every fifth night. For more information, please contact Dr. Kristen Shirey, kristen.shirey@duke.edu; Secondary Contact: kamara.carpenter@duke.edu) 681-9632. Preference is given to students considering a career in combined Medicine-Psychiatry. Prerequisite: successful completion of PSYCHTRY-205C and MEDICINE-205C. C-L MEDICINE 407C. Permission is required. Credit: 5. Enrollment: max 1. *Kristen Shirey, MD*

**PSYCHTRY-445C. Consultation-Liaison Psychiatry.** The Psychiatry Consultation-Liaison Service at Duke University Hospital offers a clinical clerkship in the evaluation and management of psychiatric disorders in the medical and surgical setting. The student performs psychiatric consultations for medical and surgical services under direct supervision of residents and senior staff. Topics in psychosomatic medicine, psychopharmacology and medico-legal issues are discussed. Unique issues in psychiatric presentations of medical illness and adaptation to illness are reviewed. Students may attend an outpatient psychiatric consultation clinic in addition, upon request and pending availability. Students attend the weekly MedPsych conference and Psychiatry Academic Half-day educational offerings. Hours are generally 8am-6pm M-F. Call the consult pager to arrange meeting place on first day (970-PSYC). Students need to check with Dr. Shirey in advance via email at kristen.shirey@duke.edu or the secondary contact, Kamara Carpenter, kamara.carpenter@duke.edu., to confirm the availability of this rotation. Prerequisites: instructor approval and satisfactory completion of PSC-205C. Credit: 4. Enrollment: max 1. *Kristen Shirey, MD and Shelley Holmer, MD*

## **Radiation Oncology**

**RADONC-415C. Clinical Radiation Oncology.** Radiation oncology plays a crucial role in the management of patients with cancer. The student begins this course with lectures, individual tutorials, and audio-visual education programs to review the crucial elements of radiation biology, medical radiation physics, and dosimetry. This is followed by clinical instruction based in the ambulatory clinics of the Radiation Oncology Department as well as participation in brachytherapy procedures, care of inpatients, and new patient consultations. This course provides an introduction to the role of radiation therapy in the treatment of malignant disease. For more information please contact Dr. Larrier at 668-7342 or via email at larri003@mc.duke.edu. Secondary contact: Bette W. Clack, email, walke098@mc.duke.edu or phone, 668-6693. NOTE: This elective does require student to complete rotations at the VA Medical Center. Students applying for this rotation MUST

complete all VA paperwork no later than one month prior to the first day of classes. Students should report to Room 005113 [Sub-basement, White Zone, Duke Clinic] at 7:45am on the first day of the rotation. Credit: 4. Enrollment: max 2. *Nicole Larrier, MD and staff*

## **Radiology**

**RADIOL-403C. Genitourinary Imaging.** The 4th year elective in Genitourinary Imaging (GUI) is designed to educate medical students pursuing a career in urology about the most common procedures within the field of GUI. The students will be involved in: (1) education about the diverse imaging modalities used in GUI; (2) imaging indications and techniques unique to GUI; and (3) review and interpretation of various studies. Documentation skills will be taught. By the end of the rotation, the student should be capable of preliminary interpretation of GU imaging studies. Permission of the instructor is required for enrollment. Credit: 4. Enrollment max: 1. Direct questions about the course to Dr. Leder, [richard.leder@dm.duke.edu](mailto:richard.leder@dm.duke.edu). Secondary contact: Deborah Griffin ([deborah.griffin@duke.edu](mailto:deborah.griffin@duke.edu)). *Richard Leder, MD; Other Abdominal Imaging Faculty*

**RADIOL-406C. Advanced Vascular and Interventional Radiology.** All students will encounter patients who will undergo interventional procedures. The 4th-year elective in Vascular and Interventional Radiology (VIR) is designed to educate medical students about the most common procedures performed by VIR. The students will be involved in: (1) pre-procedural patient care: focused patient assessment (in a clinic setting, as well as in the inpatient consult setting), review of imaging, and informed consent process; (2) intra-procedural care: devices, terminology, and technique; and (3) post-procedural patient care: focused patient assessment (in the radiology recovery room, as well as in the inpatient setting), procedural documentation/reporting, and patient follow-up plan. Documentation skills will be taught. By the end of the rotation, the student should be capable of determining whether a procedure is needed routinely, urgently or emergently; will be able to select the most indicated procedure based on patient presentation (develop a management plan); and will be knowledgeable about pre- and post-procedure patient care. Pre-requisites: Permission of the instructor is required. Students that take the two-credit Vascular & Interventional Radiology (VIR) course are not eligible to take this four credit elective. Enrollment Max. 2; Credit: 4. Course Director: Jonathan G Martin, MD, [jonathan.g.martin@duke.edu](mailto:jonathan.g.martin@duke.edu). Secondary Contact: *Deborah Griffin, [deborah.griffin@duke.edu](mailto:deborah.griffin@duke.edu). Jonathan G. Martin, MD; Nicholas Befera, MD; Charles Kim, MD; Waleska Pabon-Ramos MD/MPH; James Ronald, MD/PhD; Alan Sag, MD; Tony Smith, MD; and Paul Suhocki, MD*

**RADIOL-420C. Pediatric Radiology.** Pediatric radiology is unique from other radiology subspecialties in that almost all imaging modalities (plain film, ultrasound, fluoroscopy, CT, MR examinations) and organ systems (e.g. brain and spine, chest, gastrointestinal tract, musculoskeletal system) are evaluated on a daily basis. Moreover, there are many disease processes and presentations that are unique to children. The importance of understanding normal vs abnormal development is also unique to pediatric imaging. Students can learn by observing patients, nurses, technologists and radiologists during image acquisition in pediatric fluoroscopy, ultrasound, CT and MRI as well as in the reading room observing and helping the radiology residents, fellows and attendings protocol, interpret, and discuss pediatric imaging cases. The imaging modalities used to evaluate a child's injury or illness are openly discussed, during film

interpretation. Each history is reviewed, clinical question addressed, and the exams are formulated to optimize obtainable information while minimizing patient risks (e.g. radiation exposure or need for sedation). Other learning tools include computer access to teaching file cases, online teaching files, daily case conferences and subspecialty multispecialty case conferences. Medical students are encouraged to ask questions and participate in preliminary film interpretation and to dictate several live cases that will be staffed by an attending radiologist. Two cases are to be selected and briefly presented at an interesting case conference. A rubric for the case presentation expectations will be provided. This case will be added to the division's electronic teaching file. There is an extensive "to do" list to guide study and encourage physician and patient interaction. This "to do" list is to be completed and turned in for assessment. A copy of Pediatric Radiology by Lane Donnelly is available for loan during the rotation, assigned reading also includes some selected articles from the pediatric radiology literature. An introductory text is available on loan from the pediatric radiology division. A written or oral exam may be given at the end of the course. Two days of absence are allowed. For more information please contact Dr. Caroline Carrico at 919-684-7514 or carri026@mc.duke.edu or her assistant Candie Stewart. Course begins at 8:30 a.m. in Pediatric Radiology Division, 1st Floor Children's Health Center - 1905B. Credit: 4. Enrollment: max 1 (more than one is possible with special permission some months). Pediatric Radiology Faculty include: *Caroline Carrico, MD (course director); Charles Maxfield, MD Division Chief, Donald Frush, MD, Logan Bisset, MD, Ana Gaca, MD*

**RADIOL-421C. Clerkship in Neuroradiology.** A specialized program of detailed instruction in neuroradiology. The program includes participation in many interdepartmental conferences and the performance and interpretation of a variety of examinations including cerebral angiography, computerized axial tomography, magnetic resonance images, and myelography. This is mainly an observational rotation. There is an optional honors presentation available for credit. Grade is based on reading room attendance and conference attendance. For more information please contact Dr. James Eastwood at (919)684-7466 or via email at eastw004@mc.duke.edu. Secondary contact: Babbie Williams, (919) 684-7406. Due to Covid-19, the course will be virtual for now. Students will be doing virtual readouts and conferences. For more information and meeting times, please reach out to Babbie Williams (babbie.williams@duke.edu. Credit: 4. Enrollment: max 2. *James Eastwood, MD and staff*

**RADIOL-429C. Basic Radiology Clerkship.** This course is designed to provide an overview of the various imaging modalities of diagnostic and interventional radiology and their clinical utility. The elective consists of: (a) a high-quality lecture series (b) review of preselected teaching cases, (c) participation in multispecialty conferences and grand rounds, and (d) rotation time in subspecialty areas in diagnostic and interventional radiology. On these sub-rotations, students are allowed an opportunity to participate in imaging examination acquisition and interpretation. Through this they can gain empathy for patients undergoing imaging procedures and can learn the indications/contraindications and utility of a large variety of diagnostic and therapeutic imaging procedures. There is extensive required reading, materials are provided by the department. Students will be assessed in large part on their clinical performance and formal PowerPoint case presentation. For more information, please contact the course coordinators, Peg Helminski (peg.helminski@duke.edu) and Debbie Griffin (deborah.griffin@duke.edu) via email. If pertinent, you can contact the course directors *Dr. Robert French (robert.french@duke.edu) and Dr. Jonathan Martin (jonathan.g.martin@duke.edu) via email*. Enrolled students will receive an

email regarding orientation time and meeting details. NOTE: STUDENTS THAT HAVE TAKEN RADIOLOGY 205C ARE NOT ELIGIBLE TO ENROLL IN RADIOLOGY 429C. \*\*\*Special permission from the course director is required to enroll in the course during Fall Section 44, and Spring Sections 41 and 42. Credit: 4. Enrollment: min 1, max 3

**RADIOLOGY-437C. Musculoskeletal Imaging.** During this four week elective, the student will be exposed to conventional x-rays in bone radiology, emergency room bone films, bone tumor films and musculoskeletal MRI. At the conclusion, the student will be able to identify fractures and have a working knowledge of musculoskeletal radiology. A case presentation will be required. There is a test at rotation's end. For more information please contact Dr. Charles Spritzer via email at [chuck.spritzer@duke.edu](mailto:chuck.spritzer@duke.edu). Secondary Contact: Kisha Young ([kisha.young@duke.edu](mailto:kisha.young@duke.edu)). Credit 4. Enrollment: max. 2. *Charles Spritzer, MD; Caroline Carrico, MD; Drs. R. Lee Cothran, Jr., MD; Clyde Helms, MD; Erin McCrum, MD; Nick Said, MD; and Emily Vinson, MD*

## Surgery

**SURGERY-401C. Advanced Surgical Clerkship.** The course aims to provide an intense educational experience with graded responsibility of surgical care. The student selects a specific surgeon mentor and is expected to attend multidisciplinary conferences, e.g. gastrointestinal, vascular, transplant, endocrine, oncology, etc. The student is expected to evaluate surgical patients in an outpatient setting as well as participating in inpatient and operative patient care. Attendance at clinical research conferences, case conferences, grand rounds, and sub-specialty conferences is required. Graded patient care responsibility under supervision is encouraged to prepare the student for future assumption of duties as a house officer able to diagnose and treat surgical diseases. Students must verify with the specific attending that he/she is available during the time the student wishes to enroll in Surgery 401C. Only one student can work with a specific attending during any one time period. Permission of instructor is required. For information about the course, please contact Dr. Trey Blazer at [trey.blazer@duke.edu](mailto:trey.blazer@duke.edu) or by phone at 684-6553. To obtain permission (and permission numbers) to enroll in the course, students should contact Ben Latta via email at [thomas.latta@duke.edu](mailto:thomas.latta@duke.edu). Credit: 5. Enrollment: min. 1, max 8. *Trey Blazer, MD. Available mentors: Suresh Agarwal, MD; Peter Allen, MD; Andrew Barbas, MD; Benjamin Bryner, MD; Mitchell Cox, MD; Thomas D'Amico, MD; Georgia Beasley, MD; Jeffrey Gaca, MD; Donald Glower, MD; Rachel Greenup, MD; John Haney, MD; David Harpole, Jr., MD; Sandhya Lagoo, MD/PhD; Shelly Hwang, MD/MPH; Stuart Knechtle, MD; Michael Lidsky, MD; Andrew Lodge, MD; Christopher Mantyh, MD; John Migaly, MD; Theodore Pappas, MD; Dana Portenier, MD; Kadiyala Ravindra, MD; Henry Rice, MD; Laura Rosenberger, MD; Randall Scheri, MD; Jacob Schroder, MD; Kevin Shah, MD; Cynthia Shortell, MD; Julie Thacker, MD; Elisabeth Tracy, MD; Betty Tong, MD; Steven Vaslef, MD/PhD; Cory Vatsaas, MD; and Sabino Zani, MD*

**SURGERY-402C. Emergency Medicine Sub-Internship.** This sub-internship is designed for students with a career interest in emergency medicine. Students will hone their approach to the emergency medical patient, including essential diagnostic and therapeutic measures. The experience will encourage the development of skills important to the practice of emergency medicine including differential diagnosis, managing multiple patients, communicating with consultants, and making appropriate dispositions. Efforts are made to coordinate the majority of a student's shifts with a core group of faculty to provide mentorship. Students will attend weekly

medical student lectures, Thursday morning resident conferences, and deliver a final case presentation. For more information please contact Dr. David Gordon at 681-2820 or via email, davidc.gordon@duke.edu. Secondary Contact: Shawna Alkon (shawna.alkon@duke.edu) at 919-681-0196. Prerequisites: Students must have already completed a prior emergency medicine rotation and permission of the instructor is required. Please try to contact the course director at least several weeks in advance of enrollment to help guarantee availability. First day meeting: 1:00 p.m. in the conference room located in the emergency services administrative suite above the emergency department. Credit: 5. max: variable. Offered in summer 43 only, summer 44 only, and all fall sections. *David Gordon, MD*

**SURGERY-403C. Sub-Internship Plastic Surgery Integrated Program.** This course is designed for students who have an interest in plastic surgery as a career. Duties are similar to a first year resident. This course provides the student with an in-depth overview of clinical activities, emergency room call, inpatient care and assisting in the operating room, ward rounds and conference participation. This course will also provide primary responsibility for patient care similar to an internship in a supervised fashion. This rotation will involve more time commitment than our regular rotation with additional call and work responsibilities of up to 80 hours a week. Pre-requisite: Permission of instructor is required. For more information and/or to obtain a permission number, students should contact Colleen McDowell (colleen.mcdowell@duke.edu). Clinical Contact for Students: Erika Sudyk (erika.sudyk@duke.edu) Enrollment Max: 3. Credits: 5. *David A. Brown, MD and Erika Sudyk, PA-C*

**SURGERY-406C. Endocrine Surgery.** The Endocrine Surgery Elective will allow fourth year medical students to be exposed to and participate in the preoperative, intraoperative and postoperative care of endocrine surgery patients. This patient population encompasses a wide variety of benign, malignant, hormonally active, and hereditary endocrine diseases of the thyroid, parathyroid, adrenal and neuro-endocrine pancreas/systems which are evaluated in a multidisciplinary clinic along with medical endocrinology, oncology, pathology, genetics, and radiology. A working knowledge of these diseases and their multidisciplinary management is critical to a career in internal medicine or surgery. Permission of the instructor is required. For more information about the course students should contact Dr. Randall Scheri at r.scheri@duke.edu. Students should report to Dr. Scheri's office located at 463 Seeley Mudd Building on the first day of class. Credit: 4. Enrollment max: 2. *Randall P. Scheri, MD; Hadiza Kazaure, MD; Jennifer Perkins, MD; and Michael Stang, MD*

**SURGERY-412C. Emergency Medicine.** The American College of Emergency Physicians defines emergency medicine as "the medical specialty with the principal mission of evaluating, managing, treating and preventing unexpected illness and injury." Course Goals: 1) Students will see patients with the full range of chief complaints that present to the Duke Hospital Emergency Department. 2) Students will gain experience in making initial evaluations as well as diagnostic and treatment plans with an emphasis on detecting and treating immediate life threatening conditions. 3) Students' ability to rapidly obtain critical facets of a history and physical examination will improve. 4) Students will mature as clinical problem-solvers by seeing several patients per day with undifferentiated chief complaints. How Goals Are Achieved: 1) Students will work with attendings and residents during approximately 13 eight-hour shifts per month. A mixture of day, evening, and overnight shifts will be assigned that include both weekdays and

weekends. 2) Medical student lectures will be held each week. 3) Students will attend resident conferences on Thursday mornings, 8am to 1pm. Methods of Evaluation: Attendings and residents will give feedback to students verbally and through shift evaluation cards. For more information please contact Dr. David Gordon at 919-681-2820 or by email, davidc.gordon@duke.edu. Secondary Contact: Shawna Alkon (shawna.alkon@duke.edu) at 919-681-0196 . Prerequisites: none. First day meeting: 1:00 p.m. in the conference room located in the emergency services administrative suite above the emergency department. Duke medical students must make sure that their VA credentials are active prior to the course as they may be assigned a shift at the Durham VA Medical Center. Credit: 4. Enrollment: max varies by term. *David Gordon, MD*

**SURGERY-420C. General Surgical Oncology.** The course is designed for the student interested in surgical oncology. Students will typically spend 1-2 weeks on 2-3 different services. Students will rotate on services with a focus on Hepatobiliary, Pancreas, Breast, Endocrine, Colorectal, Soft Tissue Sarcoma, and Melanoma disease sites. The students are involved in patient care with a specific surgeon but, in addition, are expected to attend multidisciplinary conferences related to the disease site of interest that week. These multidisciplinary conferences involve medical and radiation oncology as well as surgical oncology. The student is also expected to evaluate surgical patients in an outpatient setting as well as participating in inpatient and operative patient care. There is no overnight call responsibility. For more information please contact Dr. Trey Blazer via email, trey.blazer@duke.edu or contact Ben Latta at (thomas.latta@duke.edu) or Peggy Moore (peggy r.moore@duke.edu). Permission is required. Credit: 4. Enrollment: min 1, max 2. *Trey Blazer, MD*

**SURGERY-423C. Advanced Surgery-Emphasis Cardiovascular/Thoracic.** Advanced concepts in surgery are presented in seminars and in ward, clinic, and operating room experiences. Fifty to 75 percent of the time is devoted to cardiovascular/thoracic surgery and related basic topics and the remainder to surgery generally. For more information please contact Dr. D'Amico at 681-0491. Credit: 4. Enrollment: min 1, max 5. *Thomas D'Amico, MD; Jeffrey G. Gaca, MD; Donald Glower, MD; John C. Haney MD, David Harpole, MD; Matthew G. Hartwig, MD; Chad Hughes, MD; Joseph Klapper, MD; Andrew Lodge, MD; Carmelo Milano, MD; Ryan Plichta, MD Jacob Schroder, MD; Peter K. Smith, MD; and Betty C. Tong, MD*

**SURGERY-426C. Advanced Clerkship in Pediatric Surgery.** This course is designed to familiarize the student with the whole range of surgical problems in children, but with emphasis on the pathophysiology of surgical and related problems in the newborn infant and the total care of the child with a malignancy. The student is encouraged to participate fully in the patient care aspects of the service and is considered an integral part of the patient care team. At the end of the clerkship, the student is required to give a formal presentation of a pediatric surgical topic of his or her choice. The student may tailor the clerkship month to include various aspects of pediatric surgery (neonatology, cardiac surgery, etc.) depending on the interests of the student. For more information please contact Maria Fryar at 681-5077 or via email at maria.fryar@duke.edu. Credit: 4. Enrollment: max 1. *Tamara Fitzgerald, MD/PhD; Henry Rice, MD; Obinna Adibe, MD; Elisabeth Tracy, MD*

**SURGERY-441C. Sub-Internship in Surgical Intensive Care.** This course is designed to broaden the student's knowledge and experience in dealing with a wide array of critically ill

patients. Under supervision, students function as sub-interns in the Surgical Intensive Care Unit (SICU). Students are assigned their own patients and actively participate in daily rounds as part of the SICU team which includes intensivists, fellows, APPs, and residents. There are on-line didactic lectures which are expected to be completed during the month on core aspects of critical care, as well as weekly Critical Care Grand Rounds and ICU fellow conferences. Students rotate among the different teams with typically 3 weeks of daytime service coverage and a week of overnight coverage to maximize your education and experience. Shifts are 12 hours not including sign out of the service to the oncoming team. Students will work with SICU fellows and house staff in the supervised management of critically ill patients. Four weeks are spent in the SICU at Duke University Medical Center (trauma, vascular surgery, liver-kidney-pancreas transplantation, general surgery, surgical subspecialties, MICU and NICU overflow). There is emphasis on teaching of procedures and techniques necessary for the management of all critically ill patients including hemodynamic assessment and monitoring, cardiovascular resuscitation and use of vasoactive drugs, ventilator management including ARDS, prevention and management of nosocomial infections, and nutritional support. Students are formally evaluated by the SICU house staff and the attending physician. For more information please contact Dr. Cory Vatsaas at 684-3636 or via email, [cory.vatsaas@duke.edu](mailto:cory.vatsaas@duke.edu). Further information and direction may be provided by the SICU fellow and attending of the week. The schedule is available in the SICU or by calling the SICU at 681-2241 to find out who is rounding that week. House staff sign out begins at 6:00 a.m. in the SICU. C-L: ANESTH-441C. Credit: 5. Enrollment: max 3. *Cory J. Vatsaas, MD; administrative assistant Gela Duke; and staff*

**SURGERY-443C. Trauma Service.** This course is designed to provide students interested in trauma care and emergency general surgery with further experience both in the Emergency Department and on the Inpatient Trauma Service. The course emphasizes both triage and resuscitation for major and minor emergency problems in the Emergency Department and also pre- and postoperative care on the Inpatient Trauma Service. There are opportunities to enhance the student's education by participating with the acute care surgery service, emergency general surgery consultation, and coverage of acute care general surgery operations. The student has a full-time experience by assuming duties and responsibilities similar to a sub-intern. Emphasis is placed on developing skills in the care of patients with multi-system injuries in the Emergency Department, Inpatient Service, and Operating Room. Students work in conjunction with the attending staff, residents on the Trauma Service, and our advanced practice providers. Students will typically spend three weeks covering daytime trauma service obligations and one week of night coverage to maximize your education and experience. For more information please contact Dr. Cory Vatsaas at 684-3636 or via email at [cory.vatsaas@duke.edu](mailto:cory.vatsaas@duke.edu). Additional information can be obtained by the Trauma Chief, who is the senior resident on the service, pager 970-9995. Students should meet in the General Surgery Resident bunker/lounge on the 3rd floor DMP across from the DMP OR entrance at 6:00 a.m. on the first day of the rotation. Credit: 4. Enrollment: max 3. *Cory Vatsaas, MD; administrative assistant Gela Duke; and staff*

**SURGERY-444C. Introduction to Plastic, Reconstructive and Maxillofacial Surgery.** This course is designed for students who may have a future interest in plastic surgery. Duties include the preoperative evaluation of patients, assisting in the operating room, making daily ward rounds, and participation in conferences. Permission of instructor is required for enrollment. For more information and permission numbers, please contact Colleen McDowell via

email colleen.mcdowell@duke.edu. Clinical Contact for Students: Erika Sudyk (erika.sudyk@duke.edu). Credit: 4. Enrollment: max 2. *David A. Brown, MD and Erika Sudyk, PA-C*

**SURGERY-451C. Sub-Internship in Urologic Surgery.** Students will participate in the diagnosis, management, and surgical treatment of a broad range urologic disorders in adults and children. In addition to a busy general urology practice, Duke provides state-of-the-art, specialized care for urinary stones, infertility, reconstruction, oncology and pediatric urology. Surgical experiences include open, endoscopic, robotic, microscopic, and minimally invasive surgical techniques. The goal of our sub-internship is to provide motivated students with a rich and authentic experience in the breadth and rewards of a Urology career. To that end, students will assume intern-level responsibilities to include managing inpatients, seeing clinic, actively participating in surgery, and evaluating, treating and dispositioning consult and on-call patients. Please contact Dr. Baker at Karen.Baker@duke.edu for more information and to obtain your permission number. Secondary contact: Jonna Clark (jonna.clark@duke.edu). Prerequisite: Permission is required. Credit: 5. Enrollment max: 3. *Karen Baker, MD and urology staff*