

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 or Jaime Cooke at jaimedcooke@duke.edu or 919-681-6532. Credit: 5. Enrollment: Max-2 Min-1. *Quintin Quinones MD, PhD; Raquel Bartz, MD; Madhav Swaminathan, MBBS; Mihai Podgoreanu, MD; Mauricio DelRio, MD; Ian Welsby, MBBS, BSc; Kamrouz Ghadimi, MD; Jerrold Levy, MD; Mandisa-Maia Jones-Haywood, MD; Ehimemen Iboaya, MD; Annemarie Thompson, MD; Mani Daneshmand, MD; Jack Haney, MD; Nazish Hashimi, MD; Sharon McCartney, MD; and Jacob Schroeder, MD*

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 or Jaime Cooke (jaimedcooke@duke.edu, 919-681-6532). Credit: 4. Enrollment: Max-4 Min-1. *Quintin Quinones MD, PhD; Raquel Bartz, MD; Madhav Swaminathan, MBBS; Mihai Podgoreanu, MD; Mauricio DelRio, MD; Ian Welsby, MBBS, BSc; Kamrouz Ghadimi, MD; Nazish Hashimi, MD; Jerrold Levy, MD; Mandisa-Maia Jones-Haywood, MD; Ehimemen*

Iboaya, MD; Sharon McCartney, MD; Annemarie Thompson, MD; Mani Daneshmand, MD; Jack Haney, MD; and Jacob Schroeder, MD

ANESTH-403C. Culinary Medicine Program. The Culinary Medicine Program is a medical nutrition therapy course that targets the crucial role that nutrition plays in prevention and treatment of chronic diseases. The Program includes lectures and discussions on nutrition for specific disease states and a hands-on cooking course so that the students can learn how to prepare meals tailored for the different disease states. This course will be taught by Duke faculty and staff whose careers are driven by clinical and research interests in topics related to nutrition. Their teaching will be supplemented by a curriculum from the Goldring Center for Culinary Medicine at Tulane University, which has been used in over 50 sites across the country (medical schools, nursing schools, etc.). This course will be held on Tuesday evenings from 5:30p-8:30p. Students will meet at the Duke Diet and Fitness Center. Enrollment Maximum: 16; Minimum: 15. Credit: 1. Grading basis is Credit/No Credit. For questions, please contact Dr. Ellen Flanagan at ellen.flanagan@duke.edu. *Ellen Flanagan, MD; Mark Feinglos, MD; Laura Pt Svelkey, MD; Seema Desai, MS, RDN; Paul Wischmeyer, MD; Pao-Hwa Lin, PhD; William Yancy, MD; Alani Casey, RD, LDN; Kara Mitchell, LDN, MS, RD; Kathryn Bridgens, RD, LDN; Monica Gulisano, RD, LDN; Leslie Murray, RD, LDN, CNSC; and Elizabeth Villalta, RD*

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. Usually, (s)he will spend two weeks in the general Operating rooms, one in the Cardio-thoracic Operating Rooms, and a fourth week in subspecialty areas including the Hyperbaric facility, The Acute Pain Management Service, and others. 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, including central venous and arterial line placement, and patient monitoring. These areas will be reinforced by lectures, Grand Rounds, and other conferences. In the 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. Pre-requisite: NOTE: This course may require rotations at the VA Medical Center. Students must complete the required VA Medical Center paperwork no less than 60 days prior to the first day of classes in order to participate. For questions and to obtain permission numbers, please contact

Elizabeth Futrell (elizabeth.futrell@duke.edu) or 919-668-3400. Permission is required for enrollment. Enrollment Max: 4. Credit: 4. *Elizabeth Malinzak, 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). Students are assigned their own patients and actively participate in daily rounds as part of the SICU team. There is a daily lecture on 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. Time may be spent in the SICU at Duke University Medical Center (trauma, vascular surgery, liver-kidney-pancreas transplantation, general surgery) and/or the SICU at the Durham VA Medical Center (cardiothoracic and vascular surgery, general surgery). 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 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; Kelli Brooks, MD; Nancy Knudsen, MD; John Lemm, MD; Eugene Moretti, MD/MHSc; Ehimemen Iboaya, MD; Arturo Suarez, MD; Xueyuan (Shelly) Wang, MD; Lisa Pickett, MD; Vanessa Schroder, MD; Courtney Sommer, MD; Cory Vatsaas, MD; and Steven Vaslef, MD, PhD. VA Attendings: Atilio Barbeito, MD; Raquel Bartz, MD; Charles Brudney, M.B., CH.B.; and Karthik Raghunathan, MD*

ANESTH-445C. Physiology & Medicine of Extreme Environments. Advanced topics in the physiology and medicine of: altered ambient pressure, immersion, gravity, temperature, breathing gas composition and hibernation. Environments considered include: diving and hyperbaric medicine; hot/cold terrestrial and water operations; microgravity and high-g acceleration; high altitude; space. Basic mechanisms and medical management of associated diseases are examined including: decompression sickness, altitude sickness, hypothermia and hyperthermia, hypoxia, carbon dioxide and carbon monoxide poisoning, oxygen toxicity. Practical applications: pressure vessel design and operation, life support equipment, cardiorespiratory physiology measurements at low and high pressure, simulated dive and flight (optional). Reading: *The Biology of Human Survival Life and Death in Extreme Environments*, Claude A Piantadosi (author) Pre-requisites: Human anatomy and physiology. Attendance, either on-line via webex or in person is MANDATORY unless otherwise approved by the course director, in order to receive credit. Examinations are open notes / open book short essay. The course will meet weekly on Thursday evenings from 5:00pm until 7:30pm beginning in January, in the Hyperbaric Center Library (room 0584). Basement, White Zone, Bldg. CR II. For more information contact Dr. Jake Freiberger: email john.freiberger@duke.edu or by phone at 684-6726. Email permission of instructor is required. John Freiberger, MD/MPH and Richard Moon, MD. After on-line enrollment has been completed for other spring courses, students must forward the email approval to medreg@dm.duke.edu for manual enrollment in ANESTH 445C. Credit: 1. Enrollment: max 15, min. 10. *John Freiberger, MD/MPH*

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 weekly pain conference and 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. Students with questions may contact Dr. Lance Roy (lance.roy@duke.edu) or Lindsay Waters (lindsay.waters@dm.duke.edu). Please contact Dr. Roy the week before the rotation for information about where to arrive on the first day. Credit: 4. Enrollment: max 2, min 1. *Lance Roy, MD and Jace Carter, MD*

Community and Family Medicine

Clinical Science Electives

COMMFAM-401C. Sub-Internship in Family Medicine. Sub internship in Family Medicine. This course provides senior medical students with an intense patient and population-oriented clinical rotation with responsibilities and autonomy similar to that of an intern. This clerkship will provide a unique opportunity to participate in the department's effort to test new models of care in the delivery of team-based chronic disease management in the ambulatory and community setting. Students will see patients in the same format as entering interns with a patient panel supervised by senior faculty at Duke Family Medicine Center. Each clerk will participate in a PDSA project in conjunction with the Population Health Improvement Leadership curriculum team. 40-50% of the rotation will be direct clinical care in the Duke Family Medicine Center. The remaining 50-60% will occur with the Population Health Management Resident. Clinical instruction and supervision on each patient encounter is provided by senior level house staff and faculty members of the Department of Community and Family Medicine. Students are advised to contact the department as early as possible for course approval (at least eight weeks in advance). No drops are permitted within 60 days of the first day of the rotation. Priority will be given to students with an interest in a career in primary care. For more information please contact the Coordinator of Medical Student Programs at 681-3066. Permission is required. Credit: 5. Enrollment: max 2 per session. *Lorraine Sease, MD, and Nancy Weigle, MD*

COMMFAM-403C. Community Clinic Leadership Elective - Holton Clinic. Over the course of the both semesters students will provide leadership to the DSOM Holton Clinic, operating at Holton Wellness Center from 5:30-9:30pm on Fridays. Under the supervision of a clinician, students will lead the clinical team through overseeing the care of patients, developing care management plans, and supervising MS1s. Students will be responsible for weekly operations of the clinic, such as scheduling students, follow-up with patients, and coordinating with clinic staff. Additionally, students will define goals

for learner development and patient care, and engage in quality improvement that impact learners (i.e. developing teaching modules). Offered to approved 3rd and 4th year medical students. Third year students must obtain approval to enroll from their third year mentor. Third year students will receive one clinical credit toward their fourth year upon successful completion. NOTE: Students may only sign up for the Holton Clinic or the Fremont Clinic. Students may not enroll in both courses. This is a longitudinal course. A grade of "Z" will be entered in the fall term and credit will be awarded in the spring term. Credit: 1; Enrollment Max. 6. Pre-requisite: Permission of instructor is required. Course is graded "Credit or No Credit". *Alison Clay, MD and Michelle Lyn, MBA, MHA*

COMMFAM-404C. Community Clinic Leadership Elective - Fremont Clinic.

Over the course of the both semesters students will provide leadership to the Fremont Clinic, operating at Fremont Clinic from 7:30am-1:30pm on Saturdays. Under the supervision of a clinician, students will lead the clinical team through overseeing the care of patients, developing care management plans, and supervising MS1s. Students will be responsible for monthly operations of the clinic, such as scheduling students and preceptors and handling any clinic supplies needed. Additionally, students will define goals for learner development and patient care, and engage in quality improvement that impact learners (i.e. developing teaching modules). Offered to approved 3rd and 4th year medical students. Third year students must obtain approval to enroll from their third year mentor. Third year students will receive one clinical credit toward their fourth year upon successful completion. NOTE: Students may only sign up for the Holton Clinic or the Fremont Clinic. Students may not enroll in both courses. This course is considered longitudinal. A "Z" grade and zero credit will be entered for the fall term. Credit (CR) will be awarded with one credit upon successful completion during the spring term. Credit: 1; Enrollment Max. 6. Pre-requisite: Permission of instructor is required. Course is graded "Credit or No Credit". *Barbara Sheline, MD*

COMMFAM-410C. Travel Medicine at Duke Student Health. Health education, immunizations, and medications pertinent to the traveler compose a distinct area of medical knowledge that has not otherwise been addressed in the curriculum. The medical student taking this course will review the major infectious illnesses of concern for each travel area. They will be responsible for the medical knowledge base and patient education needs about the mode of transmission and typical presentation of these illnesses, available behavioral intervention prevention methods, available vaccine prevention, options of chemical prophylaxis, and treatment if prevention is not successful. Students that took this course as a 2 week selective cannot take this course as a four-week elective. Permission is required. Enrollment max: 1. Credit: 2. Contact: the Coordinator of Medical Student Programs at 919-681-3066 for permission. Please Note: 8:00am will be the start time unless otherwise instructed by Dr. Trost and you will need to meet at the Student Health Center, 305 Towerview Drive. *Melanie Trost, MD*

COMMFAM-423C. Occupational and Environmental Medicine. This elective is designed to enhance the student's skills in several important areas related to

occupational medicine: occupational injury and illness prevention, epidemiology, health management for employee populations, industrial toxicology, worksite wellness, and prevention programs. During this four week rotation, students will complete readings related to these areas, observe surveillance exams and prospective health planning visits, participate in lectures and seminars, learn to conduct computerized database searches concerning industrial toxicology, and (as available) visit industrial sites. Students will also complete at least one project involving one of the topics above. Upon completion of the rotation, students can expect to have practical and useful skills applicable to occupational medicine and work site health programs. Credit: 4. Two months advance notice and permission from instructor is required. Enrollment: max 1 per month. All interested students should contact the Coordinator of Medical Student Programs at 681-3066. *Carol Epling, MD; Dennis Darcey, MD; and Sam Moon, MD*

COMMFAM-433C. Community Health. This elective introduces students to the concepts and practice of community-engaged and population health improvement. Population-based health care is becoming increasingly important in addressing the health needs of the United States. This elective helps students understand how Duke University Health System serves communities through collaborative, innovative, interdisciplinary clinical services, educational programs, and applied research. By allowing students to participate in actual programs, role modeling and experiential learning are used to supplement and apply what is learned in the required text-based materials of the course. Because the specific course activities depend upon the student's particular interests and the community health activities ongoing at the time of the elective, each student's experience will be individually designed. Participation in this course requires instructor permission. Students must contact Dr. Anh Tran, Program Director, at least six weeks prior to the start of the course via email at anh.tran@duke.edu. At that time, Dr. Tran and the student, along with community programming faculty and staff, will plan the specific activities that will be undertaken by that student, and establish the requirements for the student's successful completion of the course. For more specific information about the course, students may contact Jan Willis (jan.willis@duke.edu), Training Coordinator in the Division of Community Health, at 919-681-7007. Details on course meeting location, days and time will be communicated prior to the first day of class. Credit: 4; Enrollment max: 1. *Anh Tran, PhD, MPH, Course Director*

COMMFAM-435C. Health Promotion and Disease Prevention. This elective is an intensive clinical experience in health promotion and disease prevention. Students see patients in the Duke Family Medicine Center, Duke Affiliated Programs, and Duke Community Health Programs. They will participate in a variety of activities designed to help them provide excellent health maintenance care. Specific content areas addressed include risk assessment, counseling skills in nutrition, safe sex practices, and smoking and alcohol cessation, as well as screening tests and immunizations. Students will be introduced to the practical implementation of preventative care in the clinical and community setting. Pre-requisite: Successful completion of Family Medicine Clerkship (Commfam 205C). Two months advance notice. All interested students should contact

the Coordinator of Medical Student Programs, at 681-3066. Permission is required. Credit: 4. Enrollment: max 2. *Lorraine Sease, MD and Nancy Weigle, MD*

COMMFAM-448C. Introduction to Informatics. This elective provides students with an opportunity to explore the integration of medicine and information technologies in an experiential manner by working on an ongoing or self-initiated medical IT project. In doing so, students will gain an understanding of the field of clinical informatics and the role it plays in the national effort to improve quality of care and eliminate medical errors. Additionally, topics students will explore include: Electronic medical systems (e.g. EHR, PHR, CPOE, CDS); Role of health IT in patient safety; Health information standardization (e.g. HL7); and Medical Information Terminologies/Taxonomies (e.g. SNOMED). For more information about the course, students should contact the Duke Center for Health Informatics, Vivian West, PhD via email at vivian.west@duke.edu, or by phone, 919-668-0189. Offered during spring section 42 only. Permission is required. Credit: 4. Enrollment: max: 4. Ed *Hammond, PhD*

COMMFAM-449C. Community and Family Medicine Preceptorship. An individually tailored preceptorship which allows students to observe and participate in aspects of the broad scope of Community and Family Medicine, including delivery of care to individuals, families, and populations within the context of the community in which they live. The rotation supplements and complements the second-year core clerkship, and allows the student further exploration of specific areas of interest. A wide variety of practice types and geographic locations are available; students may choose from an extensive list or nominate a new site. Opportunities are also available within the Duke system, including: Lifestyle Management. All interested students should contact the Coordinator of Medical Student Programs at 681-3066 to arrange a rotation in their area of interest. Because of the necessity for site approval and prior arrangements with preceptors, it is essential that this contact be made as soon as possible and AT LEAST SIX MONTHS prior to the desired rotation. Drops are not accepted. Pre-requisites: Permission of instructor is required. Enrollment max. 1. Credit: 4. *Nancy Weigle, MD and staff*

Dermatology

Clinical Science Electives

DERMATOL-401C. Dermatology Inpatient Consults. Dermatology Inpatient Consults offers an option for fourth year students who are interested in a brief introduction to dermatology. Students will participate in the evaluation and management of hospitalized patients and will have the opportunity to work directly with the dermatology chief resident and consult attending. Credit: 2. Enrollment: max 1. *Caroline Rao, MD; Adela Cardones, MD; Navjeet Sidhu-Malik, MD; Sarah Wolfe, MD*

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; clinic attendance can be tailored to the student's future career goals. 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 clinically oriented examination. Students are to report to the Dermatology Clinic, VA medical center Room C8013 on 8:30 a.m. on the first day of the rotation for orientation. NOTE: Students must contact the course director at least 4 weeks before the first day of their scheduled rotation in order to have the allotted time necessary for the VA to get them back into the system. Each student rotating through DERMATOL 450C must complete the required VA "paperwork" (contact Clyde Meador at 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 681-3590 or 970-9601. 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, Russell Hall, MD, Sarah Myers, MD, Navjeet Sidhu-Malik, MD, John Murray, MD, and other staff*

Free Time

Clinical Science Electives

FREETIME-450C. Free Time. Students with no classes scheduled for a particular section should sign up for free time.

Interdisciplinary

Clinical Science Electives

INTERDIS-400C. Independent Study. Independent Study is a four-week term-based, non-credit bearing enrollment status used when the student is engaged in medical education-related activity that is relevant to the degree (e.g. structured USMLE preparation, medical volunteerism, internship at organization related to training) but is not research. An application consisting of a brief description of the activity and advisory dean approval is required of fourth year students. A brief report to the advisory dean on the progress of the activity is required at

the end of each four-week section. The Independent Study option for third year students is included on the 3rd year registration form for those students taking the board preparation course. The four-week study period must be approved in advance by the student's third year mentor, study program director, and mentor. The four week period for study time is not guaranteed. Students enrolled in Independent Study are eligible for benefits of insurance, but are not eligible for financial aid for living expenses. Completion of the Independent Study form and permission of advisory dean is required in order to be enrolled. Approved enrollments will be processed by the Registrar's Office upon receipt of the completed Independent Study form.

INTERDIS-401C. Acute Care Curriculum. Critical Care is not limited by location and focuses on the care of patients with acute life-threatening illnesses. Every practitioner needs the ability and fundamental knowledge to quickly recognize and initiate appropriate, timely management which can prevent further patient deterioration and end-organ damage. Multidisciplinary care depends on respect and communication for the best outcomes. The cost of health care continues to grow and much of it is spent in the intensive care setting, often in the last months of life. The use of technology must be tempered with sound judgment and quality versus quantity must be addressed. The course should be taken simultaneously with the course that will satisfy the acute care course requirement as the courses build on the clinical environment and vice versa. Primary Contact Dr. Nancy Knudsen (nancy.knudsen@duke.edu). No Credit. Enrollment max: 18; min: 4. *Nancy Knudsen, MD*

INTERDIS-402C. Introduction to Healthcare Markets and Policy for Practitioners. The purpose of this elective is to provide students with a working understanding of the business and policies that drive the U.S. healthcare system. The course structure is designed to be engaging with interactive case studies, small group discussion, and visiting faculty lecturers from the Duke-Margolis Center and Duke University's Fuqua School of Business. The 90-minute sessions will take place on weekday evenings in the Trent-Semans Center, once per month from September to April. Students are expected to attend or view a recording (with written summary) of 9/9 sessions. Student may utilize the "online view and review" option no more than three times. For more information, please contact Don Bradley (don.bradley@duke.edu). Credit: 1. Enrollment max: 115; min. 10. Note: credit will be awarded in the spring term. *Don Bradley, MD*

INTERDIS-403C. Narrative Medicine for Medical Learners. This elective course is a fourth year clinical elective where students will discuss selected works of literature that address the human condition in a way that is meaningful to physicians-in-training. The course is open to third and fourth year medical students. The aim is to incorporate literature into the medical training experience, give students the opportunity to practice reflective writing, and the space to explore the humanistic roots of medicine. In this course we will examine the intersection between the domains of narrative and medicine through the study of diverse representations of medical issues. Among the questions we will ask are: how does narrative give us greater insight into illness, medical treatment, doctor-patient relationships, and other aspects of health and medicine? How do illness and other experiences within the realm of medicine influence ways of telling stories? How do doctors' perspectives and patients' perspectives differ, and what, if anything, should be done to close those differences? Attendance to all sessions is mandatory. However, with advanced approval from the course director, a student may miss one session, but the student must submit a written reflection of the readings for the missed session, as outlined by the course director, in order to receive credit for the course. This course will be offered during the first eight

weeks of the spring term. Information regarding the day of the week that the course meets will be provided prior to spring term registration. Credit: 1. Enrollment Max.:10; Min. 6. *John A. Vaughn, MD*

INTERDIS-422C. Exploring Medicine: Cross-Cultural Challenges to Medicine in the 21st Century. The purpose of this course is to promote understanding the cultural background of the people of Latin America (particularly Honduras) and how that impacts the delivery of medical care. The course content is designed to facilitate understanding how art, history, literature, music, geography, ethics and religion influence the practice of medicine in the Latin American Culture. The Classes will be given by multidisciplinary faculty from Duke, the University of Colorado, and local experts. Medical Spanish instruction is included in each class to facilitate understanding the culture and facilitate encounters with Spanish speaking patients in our own environments as well as in Honduras. The course will be held as a 2 hour seminar for 12 weeks (begins in early January) with the trip to Honduras as an optional laboratory experience. There will be 20 hours of instruction. For more information, please contact Dr. Clements via email (dennis.clements@duke.edu) or 684-7790. Secondary contact: Rosa Solorzano, (Rosa.Solorzano@dm.duke.edu). Students meet for the first day of classes in the School of Nursing Amphitheater the first Tuesday of the Spring Semester at 6:00 p.m. This fourth year elective was approved, effective spring 2013, for third and fourth year medical students. Third year students must obtain mentor approval. Credit: 1 Enrollment - up to 10 students. *Dennis Clements, MD/PhD*

INTERDIS-423C. Honduras Trip. A 10 day trip to Honduras is planned to begin the end of April with approximately 15 students invited. Interdis 422C is a Pre-requisite: for this trip. A certain number of students with Spanish fluency are needed for the trip. Those traveling to Honduras will visit a local Honduran hospital and additionally provide medical care to patients in the Gracias area during 6 days of the trip. A trip to Copan and an indigenous Mayan community is also planned. For more information and permission, please contact Dr. Clements at 684-7790 or via email at Dennis.Clements@duke.edu. Secondary contact: Rosa Solorzano, Rosa.Solorzano@dm.duke.edu. This fourth year elective has also been approved to be taken by third year medical students, effective spring 2013. However, third year students MUST obtain permission from their mentor, study program director, and advisory dean, (Prior to the trip) to be away for 10 days. ORIENTATION AND SELECTION FOR THIS TRIP TAKES PLACE IN OCTOBER THROUGH A SEPARATE EMAIL REQUEST. Spring 2020 dates: TBD. Permission of the instructor is required for the trip. Credit 1. Enrollment up to 15. Instructor - *Dennis Clements, MD/PhD*

INTERDIS-450C. Capstone. This mandatory course for all fourth year medical students will provide important information and tools to prepare medical students for their first year of residency. Topics will address such issues as compassionate, appropriate, and effective patient care: medical knowledge about established and evolving biomedical clinical and cognate sciences as well as practical tips for when you are "on-call" as an intern; interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals; professionalism relative to responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population and systems-based practices that demonstrate one's awareness of and responsiveness to the larger context and system of health care. As part of this course, medical students will participate in an ACLS and/or PALS provider course. For more information, students should contact Dr. Timothy Scialla via email at timothy.scialla@duke.edu or Dr. Aimee Chung (aimee.chung@duke.edu). This is a longitudinal

course. Students must enroll in the course for the fall term and select "0" credits. They also enroll for the spring term and select 4 credits. A grade of "Z" (Z = look to next term) will be entered for the first term of enrollment. The grade and credits will be awarded in the spring term. If you have additional questions, please contact SOMCapstone@duke.edu. Credit: 4. Enrollment max. 125. *Timothy Scialla, MD and Aimee Chung, MD*

INTERDIS-470C. MSTP Clinical Research Experience. Clinical research experience for MSTP student's only. 0 credit.

INTERDIS-475C. Clinical Experience. INTERDIS 475C - This course is designed for students that elect to explore clinical experiences while enrolled in dual degree programs or the Community Clinic Leadership electives at the Fremont or Holton clinics at Duke (other than the MST program). This course is for students that wish to refresh their clinical skills in a patient setting. 4 weeks. 0 credit.

Medicine

Clinical Science Electives

MEDICINE-401C. Internal Medicine Sub-Internship (Duke/VA). Course Goals: To provide an internal medicine inpatient care experience at the intern level. (2) How Goals Are Achieved: Students are assigned to an inpatient service at Duke or the Durham VA. These services include the general medicine services at both hospitals, where internal medicine residents and attendings supervise the students; students may also rotate in the medical intensive care unit, on the cardiology service, or on the oncology service at Duke Hospital. The student functions as an intern on that service with the exception that orders must be countersigned by a resident or attending. Overnight duty consisting of night float responsibilities may be included over the course of the four-week schedule. The supervising resident or attending determines the number of patients assigned with anticipated increases over the four weeks. (3) Methods of Evaluation: Students are evaluated by their residents, fellows, and attendings. The evaluation form is made available to each student at the beginning of the rotation. Pre-requisites: permission of instructor is required in order to add the course and permission is required in order to drop the course. In order to drop the course, students must provide at least 14 days advanced notice and permission of instructor are required. Failure to do so will result in a grade of Incomplete ("I") or a Withdrawal ("W") may be assigned. Please contact Sheila Gainey at 681-5258 or via email at sheila.gainey@duke.edu for more information. Course is not available for visiting medical students. Credit: 5. Enrollment: max: varies by term. *Anna Lisa Crowley, MD, Saumil Chudgar, MD and staff*

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. *Carlos DeCastro, 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. Pre-requisite: 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. (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. For more information, please contact Donna Permar at 681-5919 or via email at donna.permar@duke.edu. Credit: 5. Enrollment: max 3. *Daniel Gilstrap, MD and critical care staff*

MEDICINE-406C. Intensive Care Medicine Sub-Internship (Durham VA Hospital). (1) Course Goals: Primary - To provide training in clinical, physiologic, and pharmacologic principles of the care of the critically ill. Secondary - To develop students' skills in performance and interpretation of diagnostic procedures. (2) How Goals Are Achieved: Under the supervision of senior assistant residents, the pulmonary fellow and the critical care attending physician, students function as sub-interns and are responsible for patient work-ups and daily bedside presentations. Students are given responsibilities for procedures and decision-making in direct proportion to the development of their patient management skills. Daily radiology and bedside attending rounds stress an integrated physiologic approach to the management of critically ill patients with emphasis on triage, resuscitation, acute respiratory care, hemodynamic monitoring, acid-base balance, nutritional support, palliative care, patient safety, and end-of-life care. Each student is provided a document linking selected readings that supplement the didactic and bedside discussions on diagnosis, pathophysiology, and recognition and management of critical illness. The student on-call schedule is every fourth night for the duration of this four-week course. The student registered for MEDICINE 406C may drop the course up to one month before the start date. After that time, the student should arrange for a replacement if dropping the course. (3) Methods of Evaluation: Student evaluations are done by the fellows and faculty attending on the MICU and are based on observed performance. For more information, please email martha.carraway@va.gov. Secondary contact: Dr. Karen Welty-Wolf, 684-4938 or via email at welty001@mc.duke.edu. Students are to meet in the VA MICU's MD workroom for orientation by the on-service fellow or attending on the first day of the rotation at 0800 a.m., 5A (5th floor A wing), Durham VAMC, after emailing the course director at least two weeks before as a reminder of the start date. NOTE: Students must contact the course director at least 4 weeks before the first day of their scheduled rotation in order to have the allotted time necessary for the VA to get them back into the system. Each student rotating through Medicine 406C must complete the required VA "paperwork" (contact Clyde Meador at clyde.meador@va.gov) no less than 60 days from the first day of the section in which he/she is enrolled. Credit: 5. Enrollment: max 1. *Martha Carraway, 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 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. Sarah Rivelli via email, sarah.rivelli@duke.edu. Secondary Contact: Mary Kirkley, mary.kirkley@duke.edu. Preference is given to students considering a career in combined Medicine-Psychiatry. Pre-requisite: permission of instructor and successful completion of PSYCHTRY-205C and MEDICINE-205C. C-L PSYCHTRY 407C. Credit: 5. Enrollment: max 1. *Sarah Rivelli, MD*

MEDICINE-412C. Hospital Medicine. The student on the Hospital Medicine elective will help manage acutely ill patients as a member of the Hospital Medicine Service. Four major learning areas will be emphasized. 1) Procedures including thoracentesis, paracentesis, and lumbar puncture through participation and direct observation, simulation, and viewing of

procedure videos. 2) Management of inpatients on the Hospital Medicine service. 3) Overnight patient care with Hospital Medicine attendings with the opportunity to participate in patient admissions, cross cover emergencies, and transitions of care. This course is a two-week course. When contacting the course director with interest, please indicate if you prefer the first or second two weeks of the four week block. Pre-requisite: Permission of course director is required. Contact saumil.chudgar@duke.edu for permission to enroll. Enrollment Max.: 2. Credit: 2. *Saumil Chudgar, MD, MS*

MEDICINE-414C. Introduction to Outpatient Primary Care Internal Medicine. The rotation is best suited for students interested in pursuing a career in primary care or internal medicine due to the faster pace of clinic. Course Goals: At the end of the experience, students should be able to 1) Diagnose and manage a number of common internal medicine and primary care problems including a wide variety of diseases that are generally seen only in the ambulatory setting 2) Be familiar with current USPSTF guidelines for preventive services and cancer screening, 3) Competently and efficiently take a problem-focused history, perform a directed physical exam and perform some office-based procedures. How Goals Are Achieved: The student will work with faculty preceptors within Duke Primary Care, Duke Outpatient Clinic, and other community based offices spending one or more days per week seeing patients with a preceptor. The student will see patients at multiple different sites with multiple preceptors. Clinical sites are located both at Duke and in the surrounding communities. A diverse mix of patients and conditions are seen in the outpatient setting. Patients present for preventive services, as well as, management of chronic diseases such as diabetes, hypertension, heart disease, osteoporosis, and common mental health conditions. In addition, patients are seen for acute illnesses such as pneumonia, pharyngitis, sinusitis and urinary tract infections on a same day basis. Patients routinely present with symptoms that have not been previously evaluated or diagnosed, allowing students to truly sharpen their clinical skills. The student evaluates selected patients first then presents and discusses the case with the attending. The student must outline in writing five goals that he or she wishes to accomplish during this rotation. The student's goals should be emailed to Dr. Waite at least three weeks before the rotation begins. Methods of Evaluation: The faculty preceptor who works directly with the student does the student evaluation. Grades are based on the student's interactions with patients, his or her clinical thinking regarding diagnosis and management of their problems, and documented records. Professionalism, fund of knowledge, and commitment to learning are highly weighted. Pre-requisites: Students must be enrolled in their fourth year of medical school at Duke and must have completed first, second, and third year requirements as demonstrated by advancement by the Promotions Committee to fourth year student status. Students must have access to the Duke Maestro Care computer system to effectively function in clinic. Students must contact Dr. Kathleen Waite via email (waite001@mc.duke.edu) to determine time and location for initial meeting. They must also contact Dr. Waite in advance of the course start date to create goals and schedule. Dr. Waite can also be reached by phone at 919-660-6746 Credit: 1 (10 clinic sessions, 4 hours each session over a four week block) or 2 (20 clinic sessions, 4 hours over a four week block). Please note that this is a 1 or 2 credits only. Enrollment: max 1 student for 2 credits. *Kathleen Waite, MD; Susan Blackford, MD; Ranee Chatterjee, MD; Eve Lausier, MD; Kevin Shah, MD; William Yancy, MD; and other outpatient faculty*

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. Permission of instructor is required. Credit: 4. Enrollment: 1. *Eric Westman, MD/MHS; Dana Portenier, MD; William Yancy, MD/MHS*

MEDICINE-416C. Effective Clinical Teaching. The course aims to make students more effective clinical teachers in preparation for their role as teachers during residency. Strategies include classroom discussion of adult learning theory, facilitating small-group learning, teaching at the bedside, teaching using clinical cases, and giving effective feedback. Weekly participation in role plays of teaching scenarios is required. The final project is an 8-10 minute video-recorded "chalk talk" on the topic of one's choice. Students self-reflect on the talk and obtain feedback from their classmates and instructor to develop a teaching improvement plan. Attendance at course sessions is mandatory. Permission of instructor is required. The classes meet once weekly from 5:00p - 7:30p. Students should contact Dr. Saumil Chudgar at saumil.chudgar@duke.edu to obtain a permission number. Credit: 1. Enrollment: max 12, min 6. *Saumil Chudgar, MD, MS*

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: Three weeks of the rotation are spent in the Duke Rheumatology faculty clinics located in Duke South Clinics and in our Brier Creek (Raleigh) location. One week is spent as part of the rounding team on the Duke Hospital inpatient rheumatology consultation service. Students may also see outpatients at the Durham VA Medical Center. The inpatient consultation team includes a faculty member, a fellow, and a student. Students are expected to perform one new inpatient consultation each day. 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. Students are also expected to watch at least 15 ten minute voice-annotated presentations on the most common rheumatologic diagnoses. For each learning module, students record 3 learning points and come up with 3 questions. These 3 questions and learning points are discussed in a weekly meeting with the course director or a designated faculty member or senior fellow. Justification for a grade of "honors" includes the following: Evidence through direct observation of house officer-level clinical skills in rheumatology; evidence of timely completion of learning modules, demonstrated by 1) active participation in and preparation for weekly meetings and 2) completion of the log of learning points and questions; 3) attendance at conferences listed above; 4) evidence of additional reading through case presentations to faculty members; 5) faculty evaluations; 6)

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/Brier Creek and the Durham VA Medical Center Clinic. (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). NOTE: This course may require work at the Durham VAMC. Students must complete the required DVAMC paperwork at least 30 days prior to the first day of the term/section they are enrolled in. Credit: 4. Enrollment: max 2. *Jayanth Doss, MD; Nancy Allen, MD; David Caldwell, MD; Megan Clowse, MD/MPH; Michael Hershfield, MD; Kim Huffman, MD; Rob Keenan, MD/MPH; Virginia Kraus; David Pissetsky, MD/PhD; Jennifer Rogers, MD; Ankoor Shah, MD; Steve Sorin MD; William St. Clair, MD; Terri Tarrant, MD. Sole Enrollment*

MEDICINE-424C. Fluids and Electrolytes. The Fluids and Electrolytes Course will consist of eight sessions on both the physiology of fluid, electrolyte, and acid-base homeostasis and on the pathophysiology of fluid, electrolyte, and acid-base disorders. Emphasis will be placed on the clinical application of these concepts: from the rational administration of intravenous fluid, to the interpretation of arterial blood gases, to the diagnosis of primary hyperaldosteronism. This course will be of value to just about any student who plans to take care of patients. Students must verify that there is no time conflict with other courses offered during the same time period. For more information please contact Dr. Michael Berkoben via e-mail at michael.berkoben@dm.duke.edu or Dr. John Roberts via e-mail at john.roberts@duke.edu. Credit: 1. Offered spring section 81 only. Classes will be held on Wednesday evenings from 5:30p - 7:30p. Minimum Enrollment: min: 8; max: 35. *Michael Berkoben, MD and John Roberts, MD*

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 in-patients 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. *Carlos DeCastro, MD; and hematology staff*

MEDICINE-426C. Advanced Effective Clinical Teaching. The course builds on the concepts taught in MED 416C to continue to make students more effective clinical teachers in preparation for their role as teachers during residency. Higher-level skills required of a future clinician-educator are emphasized. Strategies include classroom discussion of curriculum development methods and medical education scholarship utilizing adult learning theory. Specific skills taught include teaching in large groups, teaching on the fly, and teaching clinical reasoning. One session will focus on remediating the struggling learner. Participation in role-plays of teaching scenarios is required. The final project is the development of a curriculum that a student may implement during their residency. Student will self-reflect on their skills and develop a teaching improvement plan. Attendance at course sessions is mandatory. Permission of instructor required and MED 416C is a pre-requisite. The classes meet once weekly from 5:00pm - 7:30pm. Contact saumil.chudgar@duke.edu to enroll. Credit: 1. Enrollment Max: 12 Minimum: 6. *Saumil Chudgar, MD, MS*

MEDICINE-427C. Hospice and Palliative Medicine. Hospice and Palliative Medicine is a specialty that is focused on the treatment of patients living with serious illness. Comprehensive care- including physical (primarily symptom management), psychological, and spiritual care- is provided by an interdisciplinary team to patients and families to help alleviate suffering and promote quality of life. This 2 week, 2 credit elective provides students the opportunity to observe and work alongside palliative care practitioners in inpatient settings including the palliative care consult services at Duke University Hospital and Duke Regional Hospital, as well as inpatient hospice exposure through Duke Home Care & Hospice. The importance of multi-disciplinary teamwork will be emphasized. A schedule will be sent to you by email prior to the first day. For more information and permission to join the class contact the course director Dr. Jason Webb and the educational admin Jennifer Bowen via email at jason.webb@duke.edu & jennifer.bowen@duke.edu. Permission is required. Credit: 2. Enrollment max: 2. *David Casarett, MD; Shelley Rice, MD; Lawrence "Andy" Mumm, MD; Jason A. Webb, MD; Anthony Galanos, MD; Nathan Gray, MD; Kristin Meade, MD; J. Trig Brown, MD; Megan Jordan, MD; Farr Curlin, MD; Robin Turner, MD; R. Morgan Bain, MD; and Jennifer Gentry, RN, MSN, ANP*

MEDICINE-428C. Metabolism and Endocrinology. 1) 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, and Durham VA Medical Center General Endocrine Clinics), 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 and Kaitlyn Wilson at kaitlyn.ford@duke.edu. Secondary contact: Dr. Spratt (susan.spratt@duke.edu). Credit: 4. Enrollment: max 2. *Beatrice Hong, MD, Susan Spratt, MD and endocrinology staff*

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 also participate throughout the rotation in several half-day outpatient subspecialty clinics each week (Cystic Fibrosis; Interstitial Lung Disease; Pulmonary Hypertension; Lung Transplant; Pulmonary Rehabilitation). At the start of the rotation, students have the opportunity to personalize which of these clinics they wish to attend. Students are expected to attend the following conferences at Duke Hospital during their rotation unless clinical duties supersede: Tuesday Fellow's 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 Gina Brewer, via email at gina.brewer@duke.edu or by phone at 684-6143. Dr. Scialla can be reached via email at timothy.scialla@duke.edu. Secondary physician contact: Harvey Marshall, MD. Credit: 4. Enrollment: min 1, max 1. *Timothy Scialla, 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, to arrange meeting location. Secondary contact: Jason Bullock at 919-613-5707. Credit: 4. Enrollment max: 1. *Patricia Lugar, MD*

MEDICINE-432C. Introduction to Duke Medical Intensive Care Unit. Course Goals Introduce students to the principles of the diagnosis and care of critical illness. By the end of the course students should be able to recognize the pathophysiologic processes underlying shock and respiratory failure, should be able to recognize basic principles of mechanical ventilation and have explored death and dying issues as they apply in the ICU. How Goals Are Achieved Students perform patient evaluations and procedures as well as diagnostic and treatment planning under

the direct supervision of a junior medical resident, pulmonary fellow, and critical care attending. A lecture series that reviews basic issues in the diagnosis and treatment of critical illness is available electronically on the Duke University Critical Care Website, but patient-oriented, evidence-based, bedside training is the primary teaching method. Evaluation The attending physician and critical care fellow primarily assess each student's performance. Input from junior medical residents working with each student is also obtained, as is the input of the course director. Permission of the instructor is required for enrollment. Requisite: Students that take this course are not eligible to enroll in MEDICINE 405C. This course does not satisfy the Acute Care Course requirement. The course will be graded "Credit/No Credit". Course Credit: 2; Maximum Enrollment: 2 per section. *Daniel Gilstrap, MD; Stephen Bergin, MD and Christopher Cox, 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. Credit: 4. Enrollment: max 2. *Carlos DeCastro, 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) and Outpatient GI Clinics. (3) Methods of Evaluation: Evaluations are completed by the course director and the fellows working with the student and include clinical skills, fund of basic information, and the ability to apply this knowledge to the care of patients. Course meets at 8:00 am, Monday through Friday. Prior to the start of rotations students will receive an email detailing their specific schedule and on the first day of classes, should plan to meet at the information desk in the DMP lobby at 8:00am. For more information, please contact Jill Rimmer at 684-2819 or via email at jill.rimmer@duke.edu. Credit: 4. Enrollment: max 3. *Darin Dufault, MD and 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. Credit: 4. Enrollment: max 2. *Carlos DeCastro, 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 Kerri Pulliam-Ottwell at 681-1370 or you may contact her via email, kerri.pulliam@dm.duke.edu. Credit: 4. Enrollment: max 2. *Richa Agarwal, MD and other 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. Pre-requisite: 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 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 Maintenance Dialysis Service which provides care to patient with end stage renal disease. 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. Evans via email at evans122@mc.duke.edu or by phone at 660-6865. 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. *Kimberley Evans, MD, and nephrology staff*

MEDICINE-447C. Practitioners and Patients: The History of Clinical Medicine. How has the physician-patient relationship changed over time, and what are its possibilities for the future? This class will consider these questions using a variety of sources including medical memoirs, patient narratives, short stories, and other media. We will identify the critical historical processes (scientific, social, and cultural) that account for the structure of medical practice today, as well as examine the ethical tensions and controversies that have resulted. Priority given to MS3 students; class may be taken individually or as part of longitudinal MS3 medical humanities sequence. (Students may not take this seminar and MED 429C-81, History of Medicine for Clinicians). Location to report on the first day: Conference Room, Trent Center for Bioethics, Humanities, and History of Medicine, Room 108 Seeley G Mudd Building (Medical Center Library). Classes will meet on Tuesday evenings 5:15pm - 7:15pm. Permission of instructor is required for enrollment - students must obtain permission number from the course director. Third Year students must also obtain email approval from their mentor. The email approval from the mentor should be sent to thirdyear@dm.duke.edu and the course director. Enrollment Max.: 16; Enrollment Min.: 8. Credit: 1. Offered during fall section 82. *Jeffrey P. Baker, MD/PhD; Margaret Humphreys, PhD*

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. Pre-requisite: 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*

MEDICINE-452C. Clinical Medical Ethics: What Would a Good Physician Do? What is medicine for? What standards and norms reasonably guide physicians' actions? This course will consider rival answers to these questions, and then follow clinical ethical cases to grapple with questions about: the clinician-patient relationship, the limits of medicine, the meaning of autonomy, the place of judgment in the physician's work, the difference between an intended effect and a side effect, proportionality, sexuality and reproduction, the beginning of life, disability, end-of-life care, and death. Priority given to MS3 students; class may be taken individually or as part of longitudinal MS3 medical humanities sequence. Third year students must obtain approval of their mentor in order to take the course. Email approvals should be sent to thirdyear@dm.duke.edu and the course director. Meeting Location: Conference Room, Trent Center for Bioethics, Humanities, and History of Medicine, Room 108 Seeley G Mudd Building (Medical Center Library). To be held Wednesday evenings, 5:15pm, -7:15pm. Credit: 1. Enrollment Max.: 16; Enrollment Minimum: 8. *Farr A. Curlin, MD; Gopal Sreenivasan, MD; Ray Barfield, MD; Warren Kinghorn, MD; and Philip Rosoff, MD*

MEDICINE-453C. Medicine, Humanities and the Arts. How do the humanities and the arts help us understand the human experience of illness, suffering, and dying? How does skilled storytelling improve our ability to guide families facing complicated decisions and uncertainty?

Can literature improve our ability to care for patients from different cultures and backgrounds? Drawing on a wide range of disciplines in the humanities, this course will emphasize concrete ways in which the humanities and the arts can teach us to be better doctors. Priority given to MS3 students; class may be taken individually or as part of longitudinal MS3 medical humanities sequence. Pre-requisite: Permission of the Instructor is required - Instructor must provide permission number. Third year students must also obtain email approval from their mentors in order enroll. The email approval should be sent to the thirdyear@dm.duke.edu and to the course director. Enrollment Max.: 16; Minimum Enrollment: 8. Credit: 1. Offered spring 82. Thursday Evenings, 5:15pm - 7:15pm. *Raymond Barfield, MD/PhD and John Vaughn, MD*

Neurology

Clinical Science Electives

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, 613-0314. Prerequisite: Neuro 205C or 402C. Permission is required. Credit: 5. Enrollment: max 2. *Vern Juel, MD; Vani Chilukuri, MD, Keith Dombrowski, MD; Christopher Eckstein, MD; Nada El Hussein, MD; Carmelo Graffagnino, MD; F Lee Hartsell, MD; Jodi Hawes, MD; Brad Kolls, MD; Daniel Laskowitz, MD; Matthew Luedke, MD; Joel Morgenlander, MD; Yasmin A. O'Keefe, MD; Mark Skeen, MD; Shreyansh Shah, MD; Christa Swisher, MD; David Van Wyck, MD and Julian Yang, MD*

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 call Christine Berry at 613-0314 or via email at christine.berry@duke.edu. VA student credentialing is required prior to registration. Permission is required. Credit: 4. Enrollment: max 1. *Vern Juel, MD and neurology faculty*

NEURO-403C. Clinical Neurology Subspecialties. (1) Course Goals: To provide the student clinical exposure to a specific subspecialty in neurology. (2) How Goals Are Achieved: The student focuses on one or more specific subspecialty in neurology and attends clinics for approximately 4 days per week. During that time the student participates in the clinical evaluation of patients with a member of the neurology faculty. Clinical experience in epilepsy and sleep disorders, headache/pain, memory disorders, movement disorders, and neuromuscular disorders are available. Appropriate reading material is utilized to complement the clinical experience. Neuro 205C, 206C, or 402C are prerequisites for this course. (3) Method of Evaluation: Standard written evaluation form by faculty supervisor. Approval by the course director is required in order to ensure access to the desired neurologic subspecialty. For more information, please contact Christine Berry, 613-0314 or via email, christine.berry@duke.edu. VA student credentialing is required prior to registration. Permission is required. Credit: 1-2. Enrollment: max: 2 (if participating in different subspecialties). *Vern Juel, MD; Richard Bedlack, MD, PhD; Noreen Bukhari-Parlakturk, MD, PhD; James Burke, MD, PhD; Nicole Calakos, MD, PhD; Timothy Collins, MD; Jeffrey Cooney, MD; Karissa Gable, MD; Jeffrey Guptill, MD; Jodi Hawes, MD; Lisa Hobson-Webb, MD; Aatif Husain, MD; Kim G. Johnson, MD; Sneha Mantri, MD; Kyle Mitchell, MD; Janice Massey, MD; Richard O'Brien, MD, PhD; Rodney Radtke, MD; Shruti Raja, MD; Burton Scott, MD, PhD; Saurabh Sinha, MD, PhD; Andrew Spector, MD and Tung Tran, MD*

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, 613-0314 or via email, christine.berry@duke.edu. *Vern Juel, MD and neurology faculty*

Neurosurgery

Clinical Science Electives

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, 8 West, Duke Medical Pavilion. NOTE: Students completing this subinternship may complete rotations at VA Medical Center and must complete required paperwork no later than 60 days prior to the start of the section in which they are enrolled. Credit: 5. Enrollment max: 5. *Carrie Muh, MD (course director); John Sampson, MD, PhD (Chairman); Allan Friedman, MD; Muhammad Abd-El-Barr, MD, PhD; John Barr, MD; Patrick Codd, MD; Steven Cook, 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; Nandan Lad, MD, PhD; Anna Terry, MD; Eric Thompson, MD; Dennis Turner, MD; Chester Yarbrough, MD; and Ali Zomorodi, MD*

NEUROSUR-402C. Intermediate Clinical Neurosurgery. Intermediate Clinical Neurosurgery. This elective is intended as an intermediate experience that focuses on the clinical presentation of common neurosurgical disorders, radiographic evaluation, and therapeutic options including the indications and contraindications for surgical intervention. The student sees patients each morning with the neurosurgical team and chooses one or two patients to evaluate in more detail. The student attends one of the neurosurgery clinics or participates in the OR each morning after rounds, and attends the Wednesday academic day neurosurgical conferences. Most students attend Monday - Friday for half days beginning at 5:45 am. For more information please contact Sherolyn Patterson at 684-3053 or 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, 8 West, Duke Medical Pavilion. Credit: 2. Enrollment max: 4. *Carrie Muh, MD (course director); John Sampson, MD, PhD (Chairman); Allan Friedman, MD; Muhammad Abd-El-Barr, MD, PhD; John Barr, MD; Patrick Codd, MD; Steven Cook, 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; Nandan Lad, MD, PhD; Anna Terry, MD; Eric Thompson, MD; Dennis Turner, 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 Neuro-Oncology. Students will rotate in the Brain Tumor Center (BTC) Clinic, located in Cancer Center Clinic 3-1, with 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). At pre-selected times,

they will be able to view brain tumor surgeries with our neurosurgeons, thus providing a complete view of multidisciplinary brain tumor patient 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, Daniel Landi MD, and Dina Randazzo DO.. Students will also interact with staff in the Preston Robert Tisch Brain Tumor Center and Neuro-Oncology Fellows*

Obstetrics and Gynecology

Clinical Science Electives

OBGYN-404C. Preparation for ObGyn Residency. This two-credit course is designed to build on the foundation laid in the Capstone Course to further prepare students specifically for OB/GYN residency, though it is open to other students as well. Emphasis is placed on knowledge/skills necessary to succeed as PGY-1. Coursework includes high yield patient management didactics, review of common obstetric and gynecologic surgeries and procedures, critical appraisal of the literature / journal club, basic surgical skills (gowning, gloving, prepping, draping, suturing, knot tying), simulation of obstetric emergencies, practice pages, and Resident-as-teacher sessions, as well as time to work directly with faculty and residents. Secondary contact: Jordan Toole at 613-5156 or jordan.toole@duke.edu. The course will be graded Credit/No Credit. Credit 2. Enrollment max 20; Enrollment Min: 2. Students should meet at 248 Baker House on the first day. For questions about the time to meet, and/or the class dates in April, please contact Dr. Sarah Dotters-Katz (sarah.dotters-katz@duke.edu). *Sarah Dotters-Katz, MD, Beverly Gray, MD, and associated departmental faculty.*

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. *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*

OBYN-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 sd132@duke.edu. Secondary contact: *Jordan Toole at 613-5156 or jordan.toole@duke.edu. Credit: 5. Enrollment: max 2. Dr. Sarah Dotters-Katz, MD and Brenna Hughes, MD*

Ophthalmology

OPHTHAL-420C. Medical Ophthalmology. This lecture series emphasizes common ophthalmic conditions. The ophthalmic signs and symptoms of ocular and systemic diseases are presented in a lecture series. No clinic or operating room exposure or hands on experience. Oriented for those students interested primarily in family medicine, pediatrics, internal medicine, or ophthalmology. This clinical science course can be audited. Students should report to the Hudson Building, Room TBD, 4th floor, every Tuesday and Thursday from 12 to 1pm. For more information students may contact Dexter Torain at (919)684-9855. Credit: 1. Enrollment: min 8, max 20. *Jullia Rosdahl, MD/PhD*

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 Dexter Torain (919)684-9855. NOTE: This elective course requires work at the DVAMC. Students must complete required VA paperwork at least 30 days prior to the start of the term/section enrolled. Credit: 4. Enrollment: max 4. *Jullia Rosdahl, MD/PhD*

OPHTHAL-425C. Pediatric Ophthalmology. A clinical preceptorship in which the student participates in the outpatient pediatric ophthalmology clinic. The student will encounter the more common ocular disorders of childhood including ocular motility disturbances, congenital

cataracts, glaucoma, and congenital genetic and metabolic disorders. In addition, adult motility disorders and neuro-ophthalmic disease such as thyroid eye disease, cranial nerve palsies, and optic nerve abnormalities will be encountered. The diagnosis and treatment aspects are emphasized heavily and opportunities to observe surgery are provided. The course meets by arrangement and requires a minimum of 5 days per credit. For more information, please call Sheila Riley, 919-684-4584 or via email, sheila.riley@duke.edu. Credit: 1 or 2. Enrollment: max 3. *Edward Buckley, MD; Laura Enyedi, MD; Sharon Freedman, MD; and Grace Parkalapakorn, MD*

Orthopaedics

Clinical Science Electives

ORTHO-421C. Fractures/Musculoskeletal Trauma. Students participate in the emergency management of patients through the Duke Emergency Room. Principles of fractures and trauma are given during emergency room assignment. Requirements are attendance at one outpatient clinic per week, two nights per week on call in the emergency room, and conference attendance. Students planning to apply for orthopaedic residency are required to complete 429C prior to taking this elective. For more information and to obtain a permission number, please contact Wendy Thompson at wendy.thompson@duke.edu or 684-3170. Permission is required. Credit: 3. Enrollment: maximum 2 students per four week section. *Robert D. Zura, MD; Duke Orthopaedic Staff*

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. 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*

ORTHO-430C. Orthopaedic Sports Medicine. This elective is ideal for students interested in orthopaedic surgery, but also relevant to occupational medicine, and rehabilitation. Students participate in clinic and operating room. They learn about anatomy, pathology, physical exam, and treatment of a wide range of musculoskeletal presentations in patients from young to old, including athletes. Attendance at educational conferences is required. Students are also encouraged to participate in school physicals and game coverage to gain a full experience. For more information and to obtain a permission number, please contact Wendy Thompson at

wendy.thompson@duke.edu or 684-3170. Permission required. Credit: 4; Enrollment max: 1. Pre-requisite: Ortho 429C. *Dean Taylor, MD; Grant Garrigues, MD; Richard Mather, MD; William Garrett, MD; and Alison P. Toth, MD*

ORTHO-431C. Hand/Upper Extremity Surgery. This elective is especially suitable for students interested in orthopaedic surgery, but also relevant to plastic surgery and emergency medicine. Trauma and microvascular are emphasized. Students participate in all aspects from outpatient visits to operative procedures and inpatient rounds. They also spend time in the Hand and Upper Extremity Anatomy Lab. Attendance at educational conferences is required. For more information and to obtain a permission number, please contact Wendy Thompson at wendy.thompson@duke.edu or 684-3170. Permission required. Credit: 4. Pre-requisite: Ortho 429C. Enrollment max: 1. *David Ruch, MD; Richard Goldner, MD; Fraser Leversedge, MD; and Marc Richard, MD*

ORTHO-432C. Musculoskeletal Oncology. Students gain an understanding of benign and malignant musculoskeletal neoplasms in an interdisciplinary team approach. They learn relevant anatomy, histopathology, radiology, and clinical skills related to the evaluation and management of patients from children to adults. Students participate fully in the daily activities of the orthopaedic oncology service including outpatient visits, operative procedures, and inpatient rounds. Attendance at clinical and basic science conferences is required. For more information and to obtain a permission number, please contact Wendy Thompson at wendy.thompson@duke.edu or 684-3170. Pre-requisite: Ortho 429C. Permission is required. Credit: 4. Enrollment max: 1. *Brian Brigman, MD and William Eward, DVM, MD*

ORTHO-433C. Pediatric Orthopaedics. Students learn about a wide range of pediatric orthopaedic conditions from birth defects to sports injuries and fractures. Emphasis is placed on understanding the pediatric skeletal anatomy, acquisition of physical examination skills, and relating pathology to structure/function relationship in the pediatric patient. Students participate fully in all aspects of care including outpatient visits, operative procedures, and inpatient rounds. Attendance at educational conferences is required. For more information and to obtain a permission number, please contact Wendy Thompson at wendy.thompson@duke.edu or 684-3170. Pre-requisite: Ortho 429C. Permission is required. Credit: 4. Enrollment max: 1 *Robert Fitch, MD; and Robert Lark, MD*

Pathology

Required Courses

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. 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

Clinical Science Electives

PEDS-401C. Pediatric Sub-Internship. This course is designed to provide the student with an intensive, in-depth exposure to the diagnosis and management of pediatric patients hospitalized at Duke. Students are responsible for admissions, management throughout the hospitalization, and discharge planning. The student functions as an intern throughout the rotation; however, notes and orders must be co-signed by the resident or attending physician on the team. Students are evaluated by their residents and attending physicians. This course cannot be taken in conjunction with any other course. Students must obtain the permission of Dr. Dana Clifton (dana.clifton@duke.edu) to register for or to drop this course. Prior to the start of the sub-internship, the assigned inpatient team will be provided to the student as well as details regarding sub-internship orientation activities. Credit: 5. Enrollment: Max: 4. *Dana Clifton, MD; Aditee Narayan, MD; Kamara Carpenter and faculty*

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-403C. Med-Peds Ambulatory Rotation. - Full immersion experience in outpatient adult and pediatric medicine. - Students will see patients of all ages for a variety of visit types (follow-ups, physicals/well child checks, urgent care visits), hone their history and PE skills, formulate assessment and plans for common outpatient problems, gain an understanding of healthcare maintenance/preventive care, experience continuity of care, and learn about community resources in the outpatient setting. Enrollment Max: 1. Credit 3-4. Permission of instructor is required. Students should report to Duke Health Center, 4020 N. Roxboro Street, Durham, NC 27704 on the first day. Please contact Dr. Aimee Chung (aimee.chung@duke.edu) to confirm start time. *Aimee Chung, MD*

PEDS-404C. Advanced Adolescent Medicine. This elective will provide medical students with a foundational experience in the care of adolescents and young adults -- a unique blend of acute care, chronic disease management, prevention, and consultative assessments. A distinct priority is placed on effective interpersonal interactions, patient-centered interviewing, and patient education and counseling. Adolescent Medicine by nature is exquisitely multi-disciplinary, and this selective will provide students with a view into the intricacies of such interdisciplinary care across a variety of outpatient settings. Clinical experiences will be complemented by case-based didactic sessions and supervised study. Enrollment Max: 1; Credit. 2. Permission of instructor is required. On the first day of classes, students should meet at Duke Health Center, 4020 N. Roxboro Street. Please contact Dr. Richard Chung (richard.chung@duke.edu) to confirm meeting time. *Richard Chung, MD; Nirmish Shah, MD; John Moses, MD; Betty Staples, MD, Gary Maslow, MD, Deborah Squire, MD, and Charles Wong, MD*

PEDS-409C. Pediatric Palliative Care and Quality of Life. This course provides an introduction to pediatric palliative care for 4th year medical students. The course aims to help students to hone their patient and family centered care skills, in particular communication (breaking bad news) and medical decision making. Course will also provide opportunity to learn fundamentals of symptom management such as pain, nausea and constipation. It enables students to identifying psychosocial distress, spiritual and cultural beliefs that will affect health care decisions. Students meet on the first day of classes in 2W98c at 8:50am - page attending at 970-4357 to verify. Enrollment max; 2 per four week block. Schedule determined by course director. For more information, please contact Jennifer Bowen at 919-668-2362 or jennifer.bowen@duke.edu. Credit 2. *Megan Jordan, MD and Ray Barfield, MD, PhD Other faculty: Karen Jooste, MD; Margarita Bidegain, MD; Sarah Gall, MD; and Kristen Lakis, CSW; and Rose Sharpe, NP*

PEDS-411C. Pediatric Emergency Medicine. The 4th 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 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 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 10-hour shifts per credit. Students are expected to attend required didactic sessions/activities during the entire 4-week block, even if scheduled for fewer than 4 credits. Required activities include 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 off-days during their month (with an additional 2 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 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 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; James Fox, MD; William Bordley, MD/MPH; Kathryn Crampton, MD; James Fox, MD; Emily Sterrett, MD/MS; Neel Subramanian, MD; and Linton Yee, MD.*

PEDS-412C. Introduction to Pediatric Pulmonary and Sleep Medicine. This course provides two weeks of experience in the evaluation, diagnosis, and management of patients with respiratory and sleep related problems. Students will work closely with the pediatric pulmonary team both in the clinic and on the inpatient service. Students will have the opportunity to provide the initial assessment and management plans for patients referred for pulmonary or sleep problems. Please contact Dr. Richard Kravitz, (richard.kravitz@duke.edu) if you have questions. Pre-requisite: Permission of instructor is required. Credit: 1; Enrollment max: 1. *Richard Kravitz, MD and faculty in the Division of Pulmonary and Sleep Medicine*

PEDS-413C. Pediatric Pulmonary and Sleep Medicine. This course provides three to four weeks of experience in the evaluation, diagnosis, and 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-420C. Introduction to Pediatric Infectious Diseases. This two-week course provides an exposure to the evaluation, diagnosis, management, and follow-up of patients with possible infectious diseases. Students will work closely with the pediatric infectious diseases 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. Students that elect to take this two credit option are not eligible to enroll in PEDS 421C for the 3-4 credit option. For more information, please contact Dr. Robert Drucker (robert.drucker@duke.edu). Permission is required. Credit: 2. Enrollment Max: 2. *Robert Drucker, MD*

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 team. 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 and division faculty*

PEDS-424C. Introduction to Pediatric Endocrinology and Diabetes. Students attend in the Pediatric Endocrine, Diabetes, Lipid, Transgender and Insulin Resistance/Obesity Clinics and assume active roles in the evaluation and management of in-patients admitted to the Endocrine Service. Emphasis is placed upon the evaluation of growth and sexual development, thyroid function, and diabetes mellitus. Students also participate in a weekly endocrine division conference. Students will make a presentation to the endocrine group at the end of the rotation. Permission is required. Enrollment Max: 2; Credit: 1-2. 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: 1-2, with 1 credit for every week of the course. Enrollment: max 2. *Robert Benjamin, MD; Michael Freemark, MD; Deanna Adkins, MD; Nancie J. MacIver, MD/PhD; Laura Page, MD; and Pinar Gumus, MD*

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 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 2. *Robert Benjamin, MD; Michael Freemark, MD; Deanna Adkins, MD; Nancie J. MacIver, MD/PhD; Laura Page, MD; and Pinar Gumus, MD*

PEDS-426C. Neonatology. Students have patient care responsibilities as well as exposure to a broad range of clinical problems in the Duke Intensive Care Nursery. The course involves direct participation in patient care under the supervision of the faculty and house staff. Emphasis is placed understanding the pathophysiologic approach to the assessment and management of the critically ill neonate, with special attention to ethical and psychosocial issues surrounding their care. This is a sole-enrollment course and, as such, cannot be taken in conjunction with any other

course. The exception is INTERDIS 401C - Acute Care Curriculum. Pre-requisite: PEDS and contact Dr. Susan Izatt at susan.izatt@dm.duke.edu or by phone at 919-681-6024. Secondary contact: Dr. Ronald Goldberg, 681-6024. Students are to meet on the first day at the Neonatal Intensive Care Unit, Duke North, 5th floor. Meet promptly at 7:00 a.m. The course director will contact the student prior to the start date to clarify meeting location, attending service, and additional information. Credit: 5. Enrollment: max 1. *Susan Izatt, MD; Ronald Goldberg, MD; Kamlesh Athavale, MD; Eric Benner, MD/PhD; Margarita Bidegain, MD; C. Michael Cotten, MD; Jeffrey Ferranti, MD/MS; Rachel Greenberg, MD; Lawrence Ku, MD; Jennifer Peterson, MD; Brian Smith, MD; David Tanaka, MD; and Noelle Younge, 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. Pre-requisite: contact instructor. For questions, please contact Amanda Coates (amanda.coates@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-428C. Introduction to Pediatric Rheumatology. This course provides a two-week introduction to 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: 2. Pre-requisite: Permission of Instructor is required for Enrollment. Two-credit course is graded Credit/No Credit. Students should meet at 8:00am the first morning. They must contact Dr. Dvergsten for the location. The class meets M-F. For more information, please contact Dr. Dvergsten at jeffrey.dvergsten@duke.edu. *Jeffrey Dvergsten, MD and faculty in the Division of Pediatric Rheumatology*

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. *Jeffrey Dvergsten, MD; Elga Rabinovich, 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. The team of health professionals students will interact with and observe include 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. Students will receive training in motivational interviewing, an evidence-based communication technique to achieve effective behavior change. 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 participate in a community fitness program for children, called Bull City Fit, at least one evening per week. Students will play games, sports, and participate in cooking classes or other events 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). Credit: 4. Enrollment: max. 1. Secondary contact katherine.caro@duke.edu. Credit: 4. Enrollment: max. 1. *Sarah Armstrong, MD; Gabriela Maradiaga Panayotti, MD; Martha Nelson, PA-C; Chandler Moeller, NP; 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 observing cardiovascular procedures in the Pediatric Cardiac Catheterization Laboratory, the Pediatric Echocardiography Laboratory and the operating room. There is the option to attend clinic in the Raleigh, Cary and Greensboro offices as well as the clinic at the Children's Health Center. The emphasis is placed upon outpatient management, but there is the option of attending inpatient rounds in the cardiac intensive care unit if desired. Scope: history, physical examination, and special diagnostic techniques (echocardiography, electrocardiography, cardiac catheterization and cineangiography). Students participate in outpatient clinics or procedural experiences five days per week as well as weekly cardiology/cardiovascular surgery conference. Pre-requisite: 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; 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. 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), 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. Credit: 4. Enrollment: max 1. *Delbert Wigfall, MD; R. Gbadegesin, 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, 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

Clinical Science Electives

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 every 5th night. The rotation is only available at Duke on the Williams Ward. For more information, please contact Dr. Shelley Holmer via email at shelley.holmer@duke.edu. Please meet on Williams Ward, Duke South at 8:30 AM on the first day. Additional first day training will be provided. Pre-requisites: instructor approval and satisfactory completion of PSC-205C (or equivalent for visiting students). Secondary contact: Mary Kirkley, email at mary.kirkley@duke.edu or phone at 681-9632. Credit: 5. Enrollment: max 1. *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 North 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. Sarah Rivelli via email, sarah.rivelli@duke.edu, (please cc: mary.kirkley@duke.edu) or 668-0207. Preference is given to students considering a career in combined Medicine-Psychiatry. Pre-requisite: successful completion of PSYCHTRY-205C and MEDICINE-205C. C-L MEDICINE 407C. Permission is required. Credit: 5. Enrollment: max 1. *Sarah Rivelli, MD*

PSYCHTRY-443C. Addiction Psychiatry. Students are based at the Durham VA Health Care System's Substance Use Disorders Clinic. Experiences include diagnostic evaluation, pharmacological management, and individual, group, and family psychotherapy. Emphasis is placed on motivational interviewing, medication-assisted treatment for alcohol- and opioid-use disorders, and understanding the relationships between addictive disorders and other psychiatric and medical conditions. Students function as members of the multidisciplinary treatment team. For more information and for approval, please contact Dr. Roy Stein at roy.stein@va.gov. Credit: 4. Enrollment max 1. Pre-requisites: obtain verbal or email approval from the instructor at least 4 weeks in advance and satisfactory completion of PSYCHTRY 205C. Students must complete required VA paperwork 60 days prior to the first day of their scheduled rotation. For questions about the paperwork, please contact Clyde Meador (clyde.meador@va.gov). *Roy Stein, MD and Teresa Purdy, MD*

PSYCHTRY-445C. Consultation-Liaison Psychiatry. The Psychiatry Consultation-Liaison Service at Duke Medical Center 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. Rivelli in advance via email at sarah.rivelli@duke.edu, (please cc: mary.kirkley@duke.edu) to confirm the availability of this rotation. Pre-requisites: instructor approval and satisfactory completion of PSC-205C. Credit: 4. Enrollment: max 1. *Sarah Rivelli, MD*

Radiation Oncology

Clinical Science Electives

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

Clinical Science Electives

RADIOL-402C. Breast Imaging. The 4th year elective in Breast Imaging is designed to enhance the medical student's learning by teaching a rational approach to symptoms and concerns involving the breast, and the implementation of oncologic and surgical care after biopsy proven pathology is identified. The student will be exposed to full field digital mammography, breast ultrasound, breast MRI, and image guided interventional procedures such as needle localization prior to surgical biopsy, and stereotactic, ultrasound, and MRI-guided core biopsies. Students will also observe and have opportunity to practice skills at providing compassionate patient care through patient interactions to promote breast health, during tense encounters such as breast biopsy, and potentially high-anxiety situations such as discussing potentially abnormal mammographic results. The elective can be customized based on the student's interests and plans for residency. This course would be beneficial to students interested in Radiology, Family Medicine, or Obstetrics & Gynecology. For questions contact Dr. Kim via email connie.kim@dm.duke.edu or Beverly Harris (beverly.harris@dm.duke.edu), 919-684-7645. Credits: 2. Enrollment max: 2 (*1 student per two week period*). This two-week course is not available to visiting students. *Connie Kim, MD; Jay A. Baker, MD; Sujata Ghate, MD; Lars Grimm, MD; Karen S. Johnson, MD; Mary Scott Soo, MD; Ruth Walsh, MD; and Sora Yoon, MD*

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 via email, richard.leder@dm.duke.edu. Secondary contact: Deborah Griffin (deborah.griffin@duke.edu). *Richard Leder, MD; Other Abdominal Imaging Faculty.*

RADIOL-404C. Vascular and Interventional Radiology. All physicians 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 patient 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. This two-week, two-credit course is not available to visiting medical students. For more information about the course or if you have registered for the course, please contact Dr. Martin at jonathan.g.marting@duke.edu Credits: 2. Enrollment max: 2. *Jonathan G. Martin, MD; Charles Kim, MD; James Ronald, MD/PhD; David Sopko, 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. 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. Two days of absence are allowed. For more information contact Dr. Caroline Carrico at 919-684-7514 or carri026@mc.duke.edu or her assistant Thressa Thomas at 919-684-7442. Course begins at 8:30 a.m. in Pediatric Radiology Division, 1st Floor Children's Health Center - 1905A. Credit: 4. Enrollment: max 1. *Caroline Carrico, MD (course director); Joe Davis, MD; Charles Maxfield, MD; Gary Schooler, MD; and Jennifer Ngo, 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. Students should meet on the first day of class at the Neuroradiology CT reading room, DMP 1W98. Orientation to the class follows. Please report promptly at 8:30 a.m. 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) hands on time on the PACS workstations, reviewing preselected teaching cases, (c) participation in multispecialty conferences and grand rounds, and (d) rotation time on all 9 subspecialty areas in diagnostic and interventional radiology (Cardiothoracic, Neuroradiology, Musculoskeletal, Pediatric, Nuclear Medicine, Breast imaging, Body Imaging (CT/MRI/US), Gastrointestinal fluoroscopy, Vascular and Interventional Radiology). On these 9 sub-rotations, students are allowed an opportunity to participate in imaging examination acquisition and interpretation. Though 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, formal PowerPoint case presentation, imaging utilization presentation, a midterm and final exam. For more information please contact Dr. Caroline Carrico by pager, office phone 919- 684-7514 or via email at caroline.carrico@duke.edu. Or you can contact the course coordinator, Ms. Thressa Thomas at 684-7442. The course director and or her assistant will send enrolled students an email regarding the orientation, time and meeting location. The orientation and lecture room is the generally same for each rotation (room 1526, the Chairman's conference room) but the time varies. NOTE: Students that have taken Radiology 205C are not eligible to enroll in Radiol 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 9. *Caroline Carrico, MD and staff*

RADIOL-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 charles.spritzer@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*

Study Away

Clinical Science Electives

STDYAWAY-410C. Extra-Mural Clinical. Approved fourth year experience at another location.

STDYAWAY-411C. Study Away at UNC. Fourth year clinical elective at UNC. Upon receipt of the acceptance letter from UNC, the Registrar's Office at Duke University School of Medicine will process the enrollment for study away at UNC.

STDYAWAY-421C. Study Away at Wake Forest University School of Medicine. Fourth year clinical elective at WFU. Upon receipt of the acceptance letter from WFU, the Registrar's Office at Duke University School of Medicine will process the enrollment for study away at WFU.

STDYAWAY-431C. Study Away at East Carolina University School of Medicine. Fourth year clinical elective at ECU. Upon receipt of the acceptance letter from ECU, the Registrar's Office at Duke University School of Medicine will process the enrollment for study away at ECU.

STDYAWAY-440C. Externship in Inpatient Care at Teaching Hospital Karapitiya and Mahamodara Galle in Sri Lanka. Management of patients admitted to the Medicine/Surgical wards at Teaching Hospital Karapitiya and Teaching Hospital Mahamodara Galle in Sri Lanka. The student will function under the guidance of Professor P.L. Ariyananda. The extern would assist with admissions, and day to day care of patients. Outpatient care will also be important. Independence and innovation by the student will be particularly important. Truls Ostbye, MD, MPH, MBA, PhD. Credit: 4 Max: 2

Surgery

Clinical Science Electives

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 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. Credit: 5. Enrollment: min. 1, max 8. *Trey Blazer, MD. Available mentors: Suresh Agarwal, MD; Peter Allen, MD; Andrew Barbas, 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; Richard McCann, 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; 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 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, shadow a Durham EMS paramedic team for one day, 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: Rena Springer (rena.springer@duke.edu) or 919-681-4458. Pre-requisites: 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). Enrollment Max: 3. Credits: 5. *Scott Hollenbeck, MD; Cassandra Albertson, PA-C*

SURGERY-405C. Introduction to Point of Care Ultrasound. The 4th year elective in Point of Care Ultrasound aims to educate medical students in the core applications of bedside ultrasound. The students will be introduced to both the skills of image acquisition and image interpretation. The course will consist of: (1) education about uses and indications for point of care ultrasound with didactics; (2) hands on teaching about the acquisition of images with both simulators and live emergency department patients; (3) time dedicated to learning image interpretation of bedside ultrasounds. By the end of rotation, the student will have an introductory understanding of the indications for, skills to perform, and the clinical integration of bedside ultrasound into patient care. During spring 2020 section 42, the course will be offered in one-week periods. Students will rank their preferred weeks once enrollment has ended to determine their final schedules. For more information, please contact Dr. Peethumnongsin via email, erica.peethumnongsin@duke.edu. Credit: 1. Enrollment: max: 6; min: 2. If the minimum number of students do not enroll in the course, that section or sections will be cancelled. Course is graded "Credit/No Credit". *Erica Peethumnongsin, MD, PhD; Kevin Gurysh, MD; Rebecca Theophanus, MD*

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; Michael Stang, MD; Jennifer Perkins, MD; and Sarah Ahmadi, MD*

SURGERY-407C. Direct Observation and IPE Student Clinic Leadership Elective I. Senior students provide leadership to the direct observation and IPE student clinic. Students will help define goals for the clinic, barriers to achieving these goals, and solutions to these barriers. Main roles will include leading the team (responsibility for direct clinical operations, such as opening the clinic each night, clinic, teaching and providing feedback to other learners in clinic) and engaging in quality improvement that impacts the learners (i.e. developing formal teaching modules/videos/simulations) and that impacts patients (patient access to health care, patient flow, patient satisfaction, patient outcomes and or learner). This elective will give students a direct role in shaping a clinic for patient care. Students will gain insight into important aspects of systems-based practice: from laws governing care to patients with possible emergent/urgent medical conditions, to health care finance and reform, and healthcare reimbursement. For each credit, students must complete 4 clinics and one session of follow-up phone calls. Credit. 1-2; Enrollment Max: 2. *Kathleen Waite, MD and Erin Leiman, MD*

SURGERY-408C. Direct Observation and IPE Student Clinic Leadership Elective II. Senior students provide leadership to the direct observation and IPE student clinic. Students will help define goals for the clinic, barriers to achieving these goals, and solutions to these barriers. Main roles will include leading the team (responsibility for direct clinical operations, such as opening the clinic each night, clinic, teaching and providing feedback to other learners in clinic) and engaging in quality improvement that impacts the learners (i.e. developing formal teaching modules/videos/simulations) and that impacts patients (patient access to health care, patient flow, patient satisfaction, patient outcomes and or learner). This elective will give students a direct role in shaping a clinic for patient care. Students will gain insight into important aspects of systems-based practice: from laws governing care to patients with possible emergent/urgent medical conditions, to health care finance and reform, and healthcare reimbursement. For each credit, students must complete 4 clinics and one session of follow-up phone calls. Credit: 3-4; Enrollment max: 2. *Kathleen Waite, MD and Erin Leiman, MD*

SURGERY-409C. Surgical Technique and Review Course (STAR). Surgical Technique and Review (STAR) Course. This course will provide formal instruction to prepare 3rd and 4th year medical students for their upcoming duties as sub-interns and interns in general surgery. Students will be exposed to common diagnostic scenarios, pre- and post-operative patient care, extensive technical skill training, surgical anatomy, wound management, and how to interpret surgical literature critically. Third year students will have the opportunity to be oriented on their upcoming sub-I services. Please note that if the course is taken during the third

year, students are not eligible to take the course in the fourth year. Third year students must obtain permission of their research mentor to participate. This course will also feature mock pages to challenge students to respond to common surgical scenarios. It concludes with two full days performing surgery on fresh frozen cadavers under resident and attending guidance. The Department of Surgery fully funds this course with housestaff and faculty serving as instructors throughout the two weeks. Students will receive a welcome email detailing the schedule and locations including where to meet on the first day of classes. Dates of class for spring 2020 will be during spring section 44. Permission is required for enrollment. To obtain a permission number during registration for spring 2020, please email Christopher Reed (Christopher.reed2@duke.edu) and include the following information: name, email address, cell phone number and wireless company, (e.g. Verizon, AT&T, etc.) - needed for the mock pages; specify the year (MED 3 or MED4), and include what residency you applied for or will apply for (e.g. general surgery, urology, etc.) Third year students will be given an opportunity to be enrolled, if space allows, after fourth year students enroll. Students enrolled in Continuation of Research (CRS) and Optional Research Studies (OPTRS 301B) during the spring term are not eligible to participate in the course until fourth year. The same is true for students in the MST program who are enrolled at the Graduate School. They will be eligible to enroll when they return to the SoM to begin fourth year. Credit: 2. Enrollment max.: 20. *John Migaly, MD and Elisabeth Tracy, MD*

SURGERY-410C. Communication Sciences within Otolaryngology - Head & Neck Surgery. The purpose of this course is to provide exposure to the multidisciplinary teams that plan an integral role in the care of Otolaryngology patients. The complex interplay of diseases processes with smell, vision, hearing, balance, speech, swallowing, and physical appearance make Otolaryngology - Head & Neck Surgery a unique subspecialty. This elective allows a more in-depth interaction with our colleagues in audiology, vestibular therapy, speech and language pathology, nutrition, and care management for both adults and children. The elective will be graded "Credit/No Credit." If you have questions, please email Dr. Kahmke, russel.kahmke@duke.edu. Enrollment Max. 2; Credit: 2. *Russel Kahmke, 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. 2) Medical student lectures will be held every Monday morning. 3) Students will attend resident conferences on Thursday mornings. 4) Students will shadow a Durham EMS paramedic team for one day. Methods of Evaluation: Attendings and senior residents will give feedback to students. For more information please contact Dr. David Gordon at 919-681-2820 or by email, davidc.gordon@duke.edu. Secondary Contact: Rena Springer (rena.springer@duke.edu) or 919-681-4458. Pre-requisites: none. First day meeting: 1:00 p.m. in the conference room located in the emergency services administrative suite above the emergency department. 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-439C. 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*

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. 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. 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. Credit: 4. Enrollment: max 2. *Scott Hollenbeck, MD; Cassandra Albertson, PA-C*

SURGERY-448C. 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 division. At the end of the subinternship, 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 of during the subinternship). For more information on where to report or basic questions, please refer to the OHN consult pager, 970-1320. Credits: 5. Enrollment max: 2. *Russel Kahmke, MD*

SURGERY-451C. Sub-Internship in Urologic Surgery. Students will participate in the diagnosis, management, and surgical treatment of patients with urologic disorders. Sub-internship students will take on intern-level responsibilities, including daily management of inpatients, clinic responsibilities, participation in surgery, and overnight call. Please contact Dr. Ferrandino at michael.ferrandino@duke.edu for more information and to obtain your permission number. Secondary contact: Tracy Thompson Phillips (tracy.hatt@duke.edu) Pre-requisite: Permission is required. Credit: 5. Enrollment max: 3. *Michael Ferrandino, MD; and urology staff*

Course Offerings are Subject to Change