

**2008 - 09 UNIVERISTY OF COLORADO SCHOOL OF MEDICINE  
FOURTH YEAR ELECTIVES FOR MEDICAL STUDENTS**

University of Colorado Denver medical students receive first priority in registering for clinical elective rotations. If there is space available, medical students from other LCME accredited medical schools who have completed their required third year core clerkships are welcome to apply as externs for sub-internships and other electives. Such externs must meet the usual course prerequisites.

Course numbers with a ► before them are not available to students from osteopathic schools.

**ALL ELECTIVES ARE FOUR WEEKS IN LENGTH**

**ANESTHESIOLOGY ELECTIVES**

**ANES 8000 Clinical Anesthesiology**

Students will work one-on-one with anesthesia faculty and residents to gain further practical experience in all aspects of peri-operative care; improving skills gained in the third year and developing a deeper understanding of the breadth of anesthetic practice.

**ANES 8001 Surgery Intensive Care**

During this Sub-I multi disciplinary rotation, students actively participate in patient management, perform procedures, present clinical topics, discussion pathophysiology of the critically ill. Clinical excellence and an in-depth paper (2000-2500 words) are honors grade requirements.

**ANES 8002 Anesthesiology Subspecialties**

Course exposes students to subspecialty areas in Anesthesiology. Students will attain additional experience in selected areas of anesthetic practice. Options include Acute and Chronic Pain, L & D, Cardiothoracics, Neurosurgery, Transplants and Pre-Anesthesia Testing.

**DERMATOLOGY ELECTIVES**

**DERM 8000 Clinical Dermatology**

This course is designed to provide a broad overview of medical, surgical and pediatric dermatology. Students will become familiar with the differential diagnosis and treatment of common skin disease, and procedural dermatology including skin biopsies and cryosurgery.

**DERM 8600 Research in Dermatology**

**Restrictions:** Course Director approval required.

Research elective allows the student to design and implement a research project and to understand the significance and pitfalls of the results. Students are expected to participate in research seminars and to present their results.

**FAMILY MEDICINE ELECTIVES**

**FMMD 8002 Family Medicine Subinternship**

Experience CU Family Medicine! Students will be members of the inpatient service team at the Anschutz Inpatient Pavilion, take call, and will spend 2 half days per week at the A.F. Williams Family Medicine Center (outpatient clinic).

### **FMMD 8007 Out-Patient Family Medicine**

Course is an outpatient family medicine at A.F. Williams Family Medicine Center and Denver Health's Lowry Family Medicine Clinic. Multidisciplinary faculty including pharmacologists, behavioral scientist, and experienced family physicians and residents caring for a diverse group of patients.

## **MEDICINE ELECTIVES**

### **MED 8001 Medicine Subinternship**

The sub-intern functions as an intern and is responsible for the admission, evaluation, and continuing care of patients under the supervision of a Resident and an Attending. Sub-internships are offered at DHMC, RMC, P/SL, UCH and VAMC.

### **►MED 8003 Transfusion Medicine**

Application will be reviewed by Course Director prior to acceptance.

This course is a comprehensive study of transfusion medicine, pre-transfusion testing, component preparation and storage, donor selection and testing, inventory control and blood administration. Independent study and research encouraged.

### **►MED 8004 Cardiology**

Application will be reviewed by Course Director prior to acceptance.

Designed to offer a broad general exposure to adult cardiology, including history, physical examination, and an introduction and review of standard noninvasive testing. Rotations will be at UCH, DVAMC and DHMC with assignments based on timing of request and availability.

### **►MED 8006 Allergy/Clinical Immunology**

Application will be reviewed by Course Director prior to acceptance.

Offered at UH and NJMC. Allergy and clinical immunology with direct patient contact in allergy and immunology clinics. Opportunities to participate in inpatient consultations, observe clinical immunology laboratory techniques, and library research.

### **►MED 8007 Clinical Renal**

A four-week elective course in electrolyte, hypertensive, acute and chronic renal failure, glomerular (including diabetes) disorders, and hospital services. The students will see consults on all services, learn to maintain and analyze flow sheets, review problems with residents and fellows.

### **MED 8009 Clinical Infectious Diseases**

UCH and DHMC. Hospital assigned. Hospitalized patients with a variety of infectious diseases are available for study. Diagnosis, pathophysiology, immunology, epidemiology, and management, including use of antimicrobial agents are emphasized. Students attend and participate in ward rounds and conferences.

### **►MED 8010 Clinical Gastroenterology**

Students will participate in work up of both hospitalized and ambulatory patients with gastrointestinal (GI) illnesses. GI pathophysiology will be emphasized. Students attend weekly conferences in clinical gastroenterology, radiology and pathology. They are invited to observe procedures. Hospital is assigned.

### **MED 8011 Pulmonary**

UCH, DHMC, and DVAMC. This elective offers broad experience in pulmonary and critical care medicine. Students participate in consultations, attend conferences and clinics. A wide variety of pulmonary and critical care cases are seen.

► **MED 8012 Clinical Rheumatology**

Students will learn how to recognize, diagnose, and treat common rheumatic disorders. Students will attend all formal teaching conferences in the Division of Rheumatology and attend 6 or more outpatient clinics each week.

**MED 8013 Endocrinology**

Introduction to evaluation and management of endocrine disorders via outpatient clinics and inpatient consults at VAMC, DHMC, UCH. Endocrine-focused history-taking and physical examination with a complete problem-oriented approach to patient care. Multiple conferences and close interaction with fellows and attendings.

► **MED 8014 Hematology / Oncology**

Students are exposed to a wide range of patients seen in consultation for hematologic and oncologic problems. Students may also elect to attend the numerous subspecialty outpatient clinics for patients with various malignancies.

► **MED 8017 Hospice/Palliative Care**

Students learn the physician's role in caring for dying patients. Students encounter home care and residential hospice patients and learn compassionate pain and symptom control.

**MED 8025 Medical Oncology**

Students will learn the basic aspects of medical oncology by evaluation of patients in the general oncology, breast, lung cancer, prostate, melanoma, leukemia and lymphoma clinics. They will attend the weekly multi-disciplinary tumor conferences.

**MED 8026 Medical Oncology Subinternship**

This elective is a sub-internship on the oncology unit of University Hospital. The student will function as an intern, admitting and evaluating patients. Teaching rounds will be on a daily basis with residents, oncology fellows and an attending physician.

**MED 8037 Subinternship Critical Care at University of Colorado Hospital**

The CC sub-internship will provide training in the care of critically ill ICU patients. Emphasized skills will include management of respiratory and cardiac failure, hemodynamic instability, severe electrolyte abnormalities and common ICU procedures.

**NEUROLOGY ELECTIVES**

► **NEUR 8000 Neurology**

This elective offers students further clinical experience with patients who have neurologic disorders. A program is prepared at one of three teaching institutions (University of Colorado Hospital, Denver Veterans Affairs Medical Center, or Denver Health Medical Center) for this rotation.

**NEUROSURGERY ELECTIVES**

**NSUR 8014 Neurosurgery Subinternship**

Intensive rotation emphasizing care and management of neurosurgical patients, with close patient responsibility. Weekly conferences and lectures required and students must present a case with topic discussion. Recommended for students with interests in neurosurgery, neurology, emergency medicine and trauma surgery.

**NSUR 8600 Research in Neurosurgery**

**Restrictions:** Departmental approval required.

A written evaluation must be sent to the course director (and copied to course coordinator).

## **OBSTETRIC AND GYNECOLOGY ELECTIVES**

### **► OBGY 8000 General Obstetrics Subinternship**

Offered at DHMC only. Includes experience in prenatal, intrapartum, postpartum, and family planning. Student works under clinical supervision of residents and attending staff.

### **► OBGY 8001 General Gynecology Subinternship**

Offered at DHMC only. Includes experience in outpatient gynecology, family planning, operative gynecology and postoperative care. Student works under supervision of residents and attending staff.

### **► OBGY 8004 High Risk Maternal/Fetal**

Intensive exposure to problems of high-risk obstetrics. Student will work under supervision of the Maternal-Fetal Medicine Staff. Student will attend high-risk clinics, have primary responsibility for patient care in antepartum unit under supervision of chief resident.

### **► OBGY 8005 Gynecologic Oncology**

Student will attend GYN oncology clinics and scrub on all GYN oncology surgery, functioning as acting intern. All pathology will be reviewed with GYN oncologist. Literature review on selected subject required. Clinical research opportunities available.

### **► OBGY 8009 Gynecology Subspecialties**

Student attends outpatient gynecologic diagnostic clinics, colposcopy and laser surgery, urogynecology, urodynamics, hysteroscopy, and pelvic pain. Student works under supervision of Gyn staff. Directed study and clinical research. Attendance at colposcopy biopsy review conference, preoperative and Gyn teaching conferences required.

### **► OBGY 8010 Reproductive/Infertility**

Student will attend clinics, scrub on surgical procedures, in vitro fertilization procedures, and embryo transfers. The student will participate in ultrasounds, procedures and clinical consultations. The student will present a brief lecture to the division at the conclusion of the rotation.

### **► OBGY 8011 Family Planning**

This elective is designed to make the student proficient in providing family planning services: contraception, options counseling and termination procedures. Substantial emphasis will also be placed on participation in ongoing research activities of the division.

## **OPHTHALMOLOGY ELECTIVES**

### **► OPHT 8000 Ophthalmology**

Application will be reviewed by Course Director prior to acceptance.

Restrictions: not offered section 9

This elective is designed for senior students seriously considering a career in Ophthalmology. Students rotate at each hospital with in-depth exposure to each subspecialty area. Students are expected to participate with in- and out-patient care, call activities, teaching rounds, conferences.

### **► OPHT 8600 Research Ophthalmology**

**Prerequisites:** Ophthalmology & Arrangements must be made two month in advance.

**Restrictions:** Departmental approval required.

A final written evaluation must be mailed to the course director who will assign the final grade.

## **ORTHOPEDIC ELECTIVES**

### **ORTH 8000 Orthopaedic Surgery**

This course is designed as an elective in Orthopaedic Surgery for students desiring residency training in Orthopaedics or another surgical specialty. The student will function as a “sub intern” on a resident/faculty team.

### **ORTH 8001 Orthopaedic Primary Care**

This course is designed as an elective in musculoskeletal medicine in route to a career in primary care or other overlapping field. The focus is on outpatient musculoskeletal medicine.

### **ORTH 8005 Sports Medicine**

Course provides clinical experience in musculoskeletal sports medicine. Students will primarily be based in the CU Sports Medicine Clinic. Opportunities include participation in the clinic, operating room and the training room.

### **ORTH 8600 Research in Orthopedics**

**Restrictions:** Course director approval required

Provides an opportunity to participate in research at the clinical or basic science level. The student should contact the Departmental Office 3-4 months in advance to arrange a meeting with a member of the Orthopaedics faculty to define a project.

## **OTOLARYNGOLOGY ELECTIVES**

### **OTOL 8000 Clinical Otolaryngology**

**Restrictions:** not offered sections 21 and 33

Recommended for students considering an ENT career. Offers in-depth clinical and operative exposure. Also useful for those seeking primary care to further hone head and neck exam skills and treatment of ENT pathology. Option available to do Honors paper.

### **OTOL 8600 Research Otolaryngology**

**Restrictions:** Approval of course director required.

Objectives: 1) work in supervised environment to gain appreciation for research design, criticism and statistical analysis; 2) complete research project with potential to publish in peer-reviewed journal.

## **PATHOLOGY ELECTIVES**

### **PATH 8000 Pathology**

Application will be reviewed by Course Director prior to acceptance.

The Department assigns hospital by interests of the student. Anatomic pathology includes autopsy, surgical pathology, hematopathology and cytology. Clinical pathology includes clinical chemistry, microbiology, coagulation/blood banking and molecular diagnosis. Intended for those interested in clinical medicine, especially a pathology career.

### **PATH 8600 Research in Pathology**

**Prerequisites:** Department approval must be obtained and all arrangements made at least two months in advance.

## PEDIATRIC ELECTIVES

### **PED 8000 Pediatric Subinternship**

**Restrictions:** A 2-month advance notice is required to drop this course.

Designed for the student who are interested in further training in pediatrics. Student will be integrated as a functional member of a pediatric ward team.

### **PED 8004 Pediatric Cardiology**

Evaluation of children with heart disease by history, physical examination, electrocardiography, roentgenography, echocardiography, and cardiac catheterization will be stressed. The student will make rounds with the cardiology team, see consults, attend outpatient clinics, and participate in cardiac catheterizations and conferences.

### **PED 8007 Child Abuse and Neglect**

Application will be reviewed by Course Director prior to acceptance.

**Restrictions:** not available section 21

Held at TCH and Kempe Center. Basic principles of Child Abuse and Neglect; participate in team evaluation of outpatient and inpatient child abuse cases, and attend court with team members. Primarily observational and includes independent study. One case write-up required.

### **► PED 8008 Birth Defects/ Genetics**

Rotation includes experience in the General Genetics, Inherited Metabolic Diseases, Muscle, Neurocutaneous and outreach clinics. Students will participate in diagnosis, pedigree assessment and management. Students will participate in consultations with faculty, attend conferences, visit laboratories; an oral presentation is required.

### **PED 8009 Pediatric Infectious Disease**

This course provides experience in the pathophysiology, diagnosis, and therapy of childhood infections. Students evaluate in-patients and present cases at daily teaching rounds. Experience in the diagnostic Microbiology laboratory is provided. There is a weekly HIV/infectious diseases clinic.

### **PED 8011 Pediatric Pulmonary Disease**

Basic background knowledge in pediatric pulmonary physiology and disease will be provided. The student will attend rounds, clinics, and weekly conferences and participate in hospital consultations. Students will be expected to present a seminar/case discussion on a pediatric pulmonary topic.

### **PED 8012 Pediatric Neurology**

Child Neurology provides students with the opportunity to gain experience evaluating children with a wide variety of neurological problems. Students will round on hospital and clinic patients, complete assigned readings and attend Neurology grand rounds.

### **PED 8013 Pediatric Endocrinology**

A large variety of patients with abnormalities of growth and pubertal development, thyroid disorders, and diabetes mellitus are reviewed and treated each week. Seminars on selected topics are scheduled three times per week.

### **PED 8015 Pediatric Neonatology Subinternship**

Student assigned to UCH, DHMC, or TCH and will participate actively in the care of critically-ill infants including work rounds, attending rounds, conferences and night call. Experience will be gained in procedures and ventilator management.

**PED 8018 General Academic Pediatrics**

This course offers exciting experience in ambulatory pediatrics at The Children's Hospital. There are 9 educational conferences per week. No night call.

**PED 8020 Adolescent Medicine**

**Restrictions:** not offered sections 5, 9, 13 and 29

Application will be reviewed by Course Director prior to acceptance.

Provides basic knowledge and clinical skills in diagnosis and management of medical problems during adolescence, including development of skills in interviewing and counseling adolescents in various health care settings. Students will prepare and present a seminar/case discussion on this topic.

**► PED 8022 Pediatric Gastroenterology**

**Restrictions:** not available sections 1 and 9

Clinical rotation on pediatric gastroenterology outpatient service and procedure unit and scheduled conferences. This rotation is designed for students with a specific interest in pediatrics and/or gastroenterology. Research and inpatient experiences available upon advance request.

**PED 8024 Child Development/Behavior**

Medical students will participate in the medical assessment and treatment of children with developmental and behavioral problems. They will attend lectures, participate in the seminars, and observe multidisciplinary assessments of children with developmental disorders.

**► PED 8025 Pediatric Emergency Medicine**

Students gain experience in assessment/management of common conditions in a pediatric emergency department including minor emergencies, acutely ill children, traumatic diagnoses. Procedural experience at student's level, and at attending's discretion, will also be gained.

**PED 8026 Pediatric Nephrology**

Students will actively participate in the care and evaluation of patients under the direction of the attending and participating resident. Common problems such as hematuria, proteinuria, electrolyte disturbances, chronic renal insufficiency, hypertension, hemodialysis, peritoneal dialysis, and renal transplantation are addressed.

**PED 8600 Research in Pediatrics**

**Restrictions:** Student must receive Departmental approval and must have identified a research mentor one semester in advance of rotation. Contact Brenda Lovato at [Lovato.Brenda@tchden.org](mailto:Lovato.Brenda@tchden.org) or 303-861-6867.

**PHYSICAL MEDICINE AND REHABILITATION ELECTIVES****PHMD 8000 Physical Medicine & Rehabilitation**

This elective provides experience in the diagnosis and treatment of patients with pathology of the neurologic and musculoskeletal systems. 4 different locations (VA, Denver Health, University Hospital, The Children's Hospital) allow treatment of a variety of conditions related to rehabilitation.

**PHMD 8600 Research Physical Medicine**

**Prerequisite:** Fourth year level Physical Medicine & Rehabilitation clerkship. Obtain departmental approval and all arrangements made at least two months in advance. Contact Vy Malcik at [Vy.malcik@uchsc.edu](mailto:Vy.malcik@uchsc.edu) or 303-724-1263.

## **PREVENTIVE MEDICINE ELECTIVES**

### **PRMD 8003 Specialty Preventive Medicine**

Application will be reviewed by Course Director prior to acceptance.

Designed for students interested in exploring the field of preventive medicine. Tailored education experiences in the Denver area in a variety of settings. Speak with the course director (Tim Beyers, M.D., M.P.H., 303-724-1283) to design this elective.

### **PRMD 8600 Research in Preventive Medicine**

Application will be reviewed by Course Director prior to acceptance.

Designed for students interested in exploring the field of preventive medicine. Tailored research experiences in the Denver area can be established in a variety of settings. Speak with the course director (Tim Beyers, M.D., M.P.H., 303-724-1283) to design this elective.

## **PSYCHIATRY ELECTIVES**

### **PSCH 8000 Subinternship in Psychiatry**

Direct patient care responsibility. Student selects primary focus in clinical work, such as adult inpatient, child outpatient, emergency room, inpatient consultations, V.A., community psychiatry. Student receives supervision, attends rounds, teaching conferences.

### **PSCH 8001 Big 6 Substance Abuse/Dependence**

Application will be reviewed by Course Director prior to acceptance.

In treatment programs, experts' tutorials, and readings, students learn approaches to six common primary-care substance problems, such as addiction in pain disorders or pregnancy, smoking with tobacco-induced illness, and substance involved adolescents. Students write a paper on the six clinical problems.

### **PSCH 8600 Research in Psychiatry**

Research electives in various areas of Psychiatry including child and infant.

## **RADIOLOGY ELECTIVES**

### **RAD 8000 Diagnostic Radiology**

An introduction to the interpretation of images and the role of diagnostic imaging in patient care. Clinical observation, lectures, and independent study at UH/AOP. Only 2 days of absence permitted for any reason.

### **RAD 8002 Nuclear Medicine**

Nuclear Medicine encompasses the various uses of radioactive compounds in medical diagnosis and therapy. Students participate in the supervision and interpretation of nuclear medicine procedures under the guidance of the staff/residents at the AOP. Students will attend daily conferences.

### **RAD 8007 Interventional Radiology**

Interventional Radiology is the treatment of disease conditions using minimally invasive means. These procedures are performed with X-rays, US, and CT guidance. The student will round with the team, participate in procedures, and attend daily conferences. Standard student evaluation used.

### **RAD 8600 Research in Radiology**

Student responsible for obtaining written evaluation.

## **RADIATION ONCOLOGY ELECTIVES**

### ► **RAO 8005 Radiation Oncology**

The student will learn the basic tools and techniques of radiation oncology, evaluate patients before and after treatment, learn specialized exam techniques, participate in consultations and multi-modality cancer treatment planning. Students will attend and participate in multidisciplinary tumor conferences.

### ► **RAO 8600 Research in Radiation Oncology**

**Prerequisite:** Fourth year level Radiation Oncology clerkship

This elective is designed to acquaint the student with current research developments, knowledge and techniques in radiation oncology.

## **SURGERY ELECTIVES**

### **SURG 8000 General Surgery Subinternship at University of Colorado Hospital**

Students perform intern responsibilities on General Surgical Service at University of Colorado Hospital. Students alternate night call, write orders on assigned patients, and participate in preoperative, operative and postoperative care of inpatients.

### **SURG 8004 Emergency Medicine at University of Colorado Hospital**

Students are primary caregivers in a level II trauma center with a variety of patients and individual teaching time with attendings and senior residents. An excellent experience for students seeking instruction in the assessment and management of the undifferentiated patient.

PLEASE NOTE: If you will be applying for Emergency Medicine Residency, that program is at Denver Health Medical Center (not University of Colorado Denver School of Medicine). Please see their website:

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

### **SURG 8008 Cardiothoracic Surgery Subinternship**

Adult cardiac and general thoracic surgery and critical care monitoring on the Cardiothoracic Service at UH and Denver VAMC. Students will participate in preoperative, operative and postoperative care.

### **SURG 8010 Burn Critical Care/Surgery**

Acting sub-intern on Burn Service, working with Burn and related Surgical Critical Care cases. A high level of patient care responsibility, including bedside procedures, burn care and line charges. Work with attending faculty, and gain a multidisciplinary approach to burns.

### ► **SURG 8011 Hand Surgery**

The students will participate in all aspects of the hand service including the emergency room, outpatient clinics, inpatient/outpatient operative and non-operative treatment. Emphasis is on acute hand and upper extremity diseases, trauma, their treatment and rehabilitation.

### ► **SURG 8012 Urology Subinternship**

**Restrictions:** Not offered sections 1, 17, and 45

Application will be reviewed by Course Director prior to acceptance.

All students are required to rotate at hospitals, participate and perform physical exams, follow-up, clinic and surgeries. All Urology Conferences are mandatory. The Chief Resident, under supervision of the Attending, guides educational experiences.

**SURG 8015 Pediatric Surgery**

Student will assume major clinical responsibility for pediatric surgical patients, will work with house staff, share patient care and work-ups, act as liaison to families, attend operations and teaching conferences, and actively participate in the surgical management of infants and children.

**SURG 8024 Clinical Toxicology**

Introduction to medical toxicology at Rocky Mountain Poison and Drug Center. Participation in clinical service, inpatient consultative care at DHMC/UH. Conferences and didactic instruction provided weekly. Short presentations required. Exposed to fundamentals of environmental toxicology, public health concerns and occupational toxicology.

**SURG 8030 Clinical Transplantation**

Medical student will round with transplant team, which includes: Surgeons, Nephrologists, and Hepatologists. They will be exposed to all aspects of transplant care including preoperative work up, donor surgery, transplant surgery, post-operative care.