Syllabus for Internal Medicine Clerkship (Cardiovascular Medicine)

<table>
<thead>
<tr>
<th>Course No:</th>
<th>OM 7020, 7021, 7025, 7050</th>
<th>Course Title:</th>
<th>Cardiovascular Medicine Clerkship</th>
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<tbody>
<tr>
<td>Credit Hours:</td>
<td>4 weeks, 10 credit hours for each rotation</td>
<td>Clerkship Director:</td>
<td>Dr. Katrina Platt, DO</td>
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<td></td>
<td></td>
<td>Department Chair:</td>
<td>Dr. Emmanuel Katsaros, DO</td>
</tr>
<tr>
<td>Term - Dates:</td>
<td>Variable in OMS III academic year</td>
<td>Level:</td>
<td>OMS III-IV</td>
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Department of Clinical Education Contact Information

FOR POMONA CAMPUS
Natalie A. Nevins, DO, MSHPE, Assistant Dean of Clinical Education, Pomona
nnevins@westernu.edu, (909) 469-8414

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Educational Goal

Purpose of the Rotation
The cardiovascular medicine rotation is designed to provide students with evidence and guidelines-based competency in the diagnosis and management of inpatient and outpatient cardiovascular conditions and primary prevention of cardiovascular disease. This rotation will refine and expand on skills developed in the Internal Medicine clerkship to provide advanced preparation for the practice of the diverse specialties involved in the care of adult patients with cardiovascular disease.

Rotation Description:
Cardiology (10 credit hours)
This course provides supervised clinical education in cardiovascular medicine, including clinical diagnosis and management, technical and procedural skills, interpretation of diagnostic data, patient education, and interprofessional communication. Students are exposed to progressive involvement and independence in patient management.
Cardiology Learning Objectives

The student will be expected to:

1. Apply basic knowledge of the anatomy and physiology of the heart, vasculature and other organ systems to the care of the medical patient. Expand understanding of the role of anatomy and physiology in determining the signs and symptoms of cardiovascular diseases, diagnostic testing, and disease management. (COMP/OAA core competencies 2; Institutional outcomes 1, 2)

2. Apply basic knowledge of the molecular, biochemical, and cellular mechanisms for maintaining cardiovascular homeostasis in the care of the medical patient. Expand understanding of the role of molecular, biochemical and cellular pathways in determining the signs and symptoms of cardiovascular disease, diagnostic testing, and disease management. (COMP/OAA core competencies 2, 3; Institutional outcomes 1, 2, 7)

3. Refine skills in history and physical examination with particular attention to comprehensive evaluation of the heart and vasculature in both well patients and those with acute and chronic cardiovascular disease. (COMP/OAA core competencies 2, 3; Institutional outcomes 1, 2, 3, 4, 7)

4. Formulate and communicate a focused differential diagnostic list on each medical patient. (COMP/OAA core competencies 2, 4; Institutional outcomes 1, 2, 3, 4, 7)

5. Identify knowledge deficits and search the medical literature for the most current aspects of diagnostic and treatment strategies to apply the principles of evidence-based medicine to the care of the individual medical patient. This will be supported by ACC/AHA guidelines available online. (COMP/OAA core competencies 2, 6, 7; Institutional outcomes 1, 2, 6, 7)

6. Formulate strategies for disease prevention based on knowledge of disease pathogenesis and mechanisms of health maintenance, with the support of ACC/AHA guidelines and the United States Preventative Task Force Recommendations. (COMP/OAA core competencies 2, 6, 7; Institutional outcomes 1, 2, 7, 8)

7. Determine indications for obtaining a consultation from a cardiovascular medicine specialist.

8. Interpret the results of an electrocardiogram

9. Integrate concepts of epidemiology and biostatistics (sensitivity/specificity/positive and negative predictive value) into the care of the individual medical patient. (COMP/OAA core competencies 2, 4, 6, 7; Institutional outcomes 1, 2, 7)

10. Formulate diagnostic and treatment plans taking into consideration cost-benefit analysis and access to healthcare. (COMP/OAA core competencies 2, 4, 6, 7; Institutional outcomes 1, 2, 4, 5, 6, 7, 8)

11. Skillfully present patient history, physical and diagnostic information in a systematic, coherent and concise manner, which addresses the chief complaint/problem, identifies pertinent
positive and negative findings and supports a logical assessment. (COMP/AOA core competencies 2, 3, 4; Institutional outcomes 2, 3)

12. Respect the cultural and ethnic diversity of their patients’ beliefs in evaluating and managing their medical care. (COMP/AOA core competencies 1, 2, 3, 4, 5; Institutional outcomes 2, 3, 4, 5, 6, 8)

13. Display honesty, integrity, respect, and compassion for patients and their families. (COMP/AOA core competencies 1, 2, 3, 4, 5; Institutional outcomes 23, 4, 5, 6, 8)

14. Participate in the education of patients, families, and other students. This should include communication of diagnosis, prognosis and treatment plan as well as education on risk factors for cardiovascular disease and strategies for modification such as smoking cessation, dietary changes, weight loss and increasing physical activity. (COMP/AOA core competencies 1, 2, 3, 4, 5; Institutional outcomes 1, 2, 3, 4, 5, 8)

15. Participate in an inter-professional team to enhance patient safety and improve patient care. (COMP/AOA core competencies 1, 2, 3, 4, 5, 6, 7; Institutional outcomes 1, 2, 3, 4, 5, 8)

16. Display collegiality, professionalism and respect toward all members of the healthcare team. (COMP/AOA core competencies 4, 5, 7; Institutional outcomes 3, 4)

17. Follow all infection control policies and guidelines as established by the Centers for Disease Control and Prevention (CDC) and the Society for Healthcare Epidemiology of America (SHEA). (COMP/AOA core competencies 2, 4, 6, 7; Institutional outcomes 1, 2, 7)

18. Obtain a greater understanding of the patient-physician relationship and consistently apply the “bio psychosocial model.” (COMP 1, 2, 3, 5, 7; Institutional Outcomes 1, 2, 3, 4, 5, 6, 8)

19. Apply Osteopathic Principles and Practice as an integral part of patient treatment and care. (COMP 1, 2, 3, 4, 5, 6, 7; Institutional Outcomes 1, 2, 3, 4, 5, 6, 7, 8)

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**Rotation Expectations**

1. Assist in admitting patients to the hospital (from the ER, direct admit, transfer under the supervision of the attending or resident/intern), consulting on hospitalized patients and/or consulting on outpatients as is relevant to your practice site.

2. Write accurate, organized and legible progress notes.

3. Recommend to the intern, resident or attending physician a treatment plan for assigned patients.

4. Demonstrate an understanding of specific medical procedures performed by cardiovascular medicine specialists with particular attention to indications and contraindications.

5. Make daily rounds and record progress notes and review orders on patients (Preceptors/Clinical Faculty: please direct students on approved use of any electronic medical records. If the student is not allowed to enter data directly into the electronic records, please have the student “hand write” all progress notes and orders for daily review).

6. Accompany attendings, residents and interns on rounds.
7. Effectively communicate with attendings, residents and interns about patients when on rounds and with regard to perceived problems with patients and any change of status of patients.
8. Participate in all conferences, morning reports, lectures, and meetings as directed by the attending and COMP faculty.
9. Lecture or present case histories as requested by interns, residents or attending.
10. Generate written discharge summaries on assigned patients under direct supervision of the attending physician.
11. Use the literature to review evidence-based diagnosis and management of cardiovascular conditions encountered on the service.
13. Be timely.
14. Wear appropriate attire.
15. Be professional at all times.

**Required Educational Assignments**

For IM1 and IM2, please refer to ECM 5 on Blackboard (ECM 5 Syllabus)

**Recommended Procedures List (to see or do)**

**Basic:**
Prior to graduation, medical students should obtain experience assisting in the performance of the procedures listed below with the supervision of the attending or a qualified technician. In addition, students must be able to define, describe and discuss these procedures, and understand their indications and contraindications as well as risks and benefits. As appropriate, medical students should be able to obtain written or verbal consent for their participation. These skills can be performed during an inpatient or outpatient cardiovascular clerkship.

- EKG (Students should be competent to perform an ECG independently by the end of the rotation).
- Transthoracic echocardiogram
- Treadmill exercise stress test

**Advanced:**
The following advanced procedures may be performed by general cardiologists or subspecialists such as interventional cardiologists or electrophysiologists. Students are encouraged to participate in these procedures as appropriate given services available at the clerkship site and/or scope of practice of their preceptor. All students must be able to define, describe and discuss these procedures, and understand the basic indications and contraindications as well as risks and benefits. Although residents and attending are responsible for obtaining written consent, none of the following procedures should commence without following appropriate protocols to obtain the consent, and students should participate in obtaining an informed consent.

- Holter monitor
- Synchronized electric cardioversion
- Transesophageal echocardiogram
- Pharmacologic stress/myocardial perfusion study
- Stress echocardiogram
- Cardiopulmonary exercise testing
- Pulmonary artery catheterization (Swan-Ganz)
- Left heart catheterization
Percutaneous transluminal coronary angioplasty and intervention
- Balloon pump placement
- Pacemaker/AICD programming
- Pacemaker/AICD implantation
- Electrophysiologic studies/endomyocardial ablation

Core Topics of Study
Evaluation of symptoms possibly secondary to cardiovascular disease:
- Chest pain
- Shortness of breath
- Palpitations
- Syncope

Cardiovascular conditions:
- Hypertension
- Hyperlipidemia
- Heart healthy lifestyle
- Arteriosclerosis/coronary artery disease
  - Stable angina
  - Acute coronary syndrome
  - ST elevation MI
- Valvular heart disease, with emphasis on:
  - Aortic stenosis
  - Aortic regurgitation
  - Mitral stenosis
  - Mitral regurgitation
- Endocarditis (including indications for prophylaxis)
- Cardiac Arrhythmias, with emphasis on:
  - Atrial fibrillation/flutter
  - Ventricular pre-excitation (WPW)
  - Ventricular tachycardia
- Pericardial disease
  - Pericarditis
  - Cardiac tamponade
  - Pericardial constriction
- Heart Failure
  - with preserved ejection fraction (HFrEF) and with reduced ejection fraction (HFrEF)
  - Management of acute decompensated and chronic
  - NYHA classification I-IV/ stages A-D
- Cardiomyopathies
  - Dilated cardiomyopathy
  - Hypertrophic cardiomyopathy
  - Restrictive cardiomyopathy
  - Chagas disease
  - Arrhythmogenic right ventricular cardiomyopathy
- Ventricular assist device/Heart transplantation
- Pulmonary embolism
- Aortic dissection
- Adult congenital heart disease, with emphasis on:
  - Eisenmenger syndrome
  - Coarctation of the Aorta

**Cardiovascular pharmacology:**
- Beta-blockers
- Calcium channel blockers
- Antiplatelet agents
- Anticoagulation
- Vasodilators/nitrates
- Lipid lowering agents
- Vaughan-Williams Class I/III anti-arrhythmic

### Clinical Faculty

Students are assigned to specific credentialed clinical faculty/preceptors at their core clinical site.

<table>
<thead>
<tr>
<th>Pomona</th>
<th>Lebanon</th>
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| Katrina Platt, D.O. Clerkship Director for Internal Medicine  
Assistant Professor of Internal Medicine  
Appointments available by email at kplatt@westernu.edu | Katherine Fisher, DO, Clerkship Director for Internal Medicine and Director for Clinical Education  
Assistant Professor of Internal Medicine  
Appointments available by email at kfisher@westernu.edu |

### Instructional Methods

Scheduled rotation time (minimum 40 hours per week) will be used for supervised patient care, case presentations (onsite) and independent studying. You should review current guidelines on evidence based medicine posted on the ACP website and readings as directed by your supervising physician.

### Texts and Media

**Required Textbook:**
2. *Goldman’s Cecil’s Medicine*, 24th Ed. ISBN 9781437716047 (go to Pumerantz library and type the name in electronic resource)

**Recommended Media:**
1. Up to Date (free through WesternU)
Rotation Format, Evaluation, Grading and Student Feedback

Additional information is located in the Clinical Education Manual at:
https://www.westernu.edu/media/osteopathic/pdfs/cem.pdf

Rotation Schedule
Each site will provide students with a schedule on their first day of the rotation. If not provided, please ask and have a clear understanding as to the expectations. These schedules are rarely available prior to the start the rotation. It is solely your responsibility to read and understand all information provided to you by the site. Some sites have additional requirements above and beyond those set forth by the College of Osteopathic Medicine.

Evaluation/Grading
Grading for your clerkship will be calculated according to the Clinical Education Manual.

Please note, your attending/preceptor’s evaluation is based on, but not limited to the following:

- Communication skills regarding patients
- Care provided to assigned patients
- Attendance and participation at conferences, morning reports lectures and meetings
- Demonstration of library references on patients
- Completion and accuracy of paperwork on patients (Histories and Physicals, progress notes, treatment plans, presentations, hand-outs, etc.)
- Interaction with attendings, residents, students, medical staff, nursing and ancillary personnel

- General knowledge base and knowledge applied to specific patients
- Motivation in the learning process
- Overall performance, participation, enthusiasm to learn, and effort to improve
- Mid-rotation grades should be given by the intern/resident/attending. The final grade should be given/reviewed with the student on the last day of the rotation.

General Policies

Policy on Disability Accommodations: To obtain academic accommodations for this rotation, students with disabilities should contact the Center for Disability Issues and the Health Professions and the system coordinator within ten days of the beginning of the system. Disability Services can be reached at 909.469.5380.


Attendance Policy: Refer to the Clinical Education Manual at https://www.westernu.edu/media/osteopathic/pdfs/cem.pdf

Academic Dishonesty: Complete confidence in the honor and integrity of the health professions student and health care professional is essential. Such confidence depends entirely on the exemplary behavior of the individual health care provider in his or her relations with patients,
faculty and colleagues. Strict honesty as a personal way of life should be nurtured during the period of education for professional service. The student shall conduct all aspects of his or her life with honor and integrity. This includes accountability to oneself and to relationships with fellow students, future colleagues, faculty, and patients who come under the student’s care or contribute to his or her training and growth, and members of the general public. This applies to personal conduct that reflects on the student’s honesty and integrity in both academic and non-academic settings, whether or not involving a University sponsored activity.

Upon accepting admission to the University, each student subscribes to and pledges complete observance to the Standards of Academic and Professional Conduct as outlined in the University Catalog for each academic program. A violation of these standards is an abuse of the trust placed in every student and could lead to suspension or dismissal.

<table>
<thead>
<tr>
<th>WU INSTITUTIONAL OUTCOMES</th>
<th>Health Professional Education</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Critical Thinking</td>
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<tr>
<td>2</td>
<td>Breadth and Depth of Knowledge in the Discipline/Clinical Competence</td>
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<tr>
<td>3</td>
<td>Interpersonal Communication Skills</td>
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<td>4</td>
<td>Collaboration Skills</td>
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<td>6</td>
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<td>Evidence-Based Practice</td>
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<td>8</td>
<td>Humanistic Practice</td>
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**COMP/AOA CORE COMPETENCIES**

<p>| Competency: Osteopathic Medical Students are part of an educational continuum that leads to residency and the curriculum provides the foundation for the following outcomes; |</p>
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<tbody>
<tr>
<td>1</td>
<td>Osteopathic Philosophy</td>
<td>Residents are expected to demonstrate and apply knowledge of</td>
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<td></td>
<td>and Osteopathic</td>
<td>accepted standards in Osteopathic Manipulative Treatment (OMT)</td>
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<td></td>
<td>Manipulative Medicine</td>
<td>appropriate to their specialty. The educational goal is to train a skilled</td>
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<td></td>
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<td>and competent osteopathic practitioner who remains dedicated to life-long</td>
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<td></td>
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<td>learning and to practice habits in osteopathic philosophy and</td>
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<tr>
<td></td>
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<td>manipulative medicine.</td>
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<td>2</td>
<td>Medical Knowledge</td>
<td>Residents are expected to demonstrate and apply knowledge of</td>
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<td></td>
<td>accepted standards of clinical medicine in their respective specialty</td>
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<td>area, remain current with new developments in medicine, and</td>
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<td>participate in life-long learning activities, including research.</td>
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<td>3</td>
<td>Patient Care</td>
<td>Residents must demonstrate the ability to effectively treat patients,</td>
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<td>provide medical care that incorporates the osteopathic philosophy,</td>
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<td>patient empathy, awareness of behavioral issues, the incorporation</td>
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<td>of preventative medicine, and health promotion.</td>
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<td>4</td>
<td>Interpersonal and</td>
<td>Residents are expected to demonstrate interpersonal/communication skills that</td>
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<td></td>
<td>Communication skills</td>
<td>enable them to establish and maintain professional</td>
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<td></td>
<td></td>
<td>relationships with patients, families, and other members of health care</td>
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<td></td>
<td></td>
<td>teams.</td>
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<td>5</td>
<td>Professionalism</td>
<td>Residents are expected to uphold the Osteopathic Oath in the</td>
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<td>conduct of their professional activities that promote advocacy of</td>
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<td>patient welfare, adherence to ethical principles,</td>
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<td>collaboration with health professionals, life-long learning, and</td>
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<td>sensitivity to a diverse patient population. Residents should be</td>
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<td>cognizant of their own physical and mental health in order to</td>
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<td>effective care for patients. Please note that professionalism is in</td>
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<td>integral part of the career of a physician. Clinical sites do have</td>
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<td>the right to fail a student or remove them from rotation due to</td>
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<td>deficits in professionalism.</td>
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<td>6</td>
<td>Practice-Based Learning</td>
<td>Residents must demonstrate the ability to critically evaluate their</td>
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<td>and Improvement</td>
<td>methods of clinical practice, integrate evidence-based medicine into</td>
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<td>patient care, show an understanding of research methods, and</td>
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<td>improve patient care practices.</td>
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<td>7</td>
<td>Systems-based Practice</td>
<td>Residents are expected to demonstrate an understanding of health</td>
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<td>care delivery systems, provide effective and qualitative patient care</td>
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<td>within the system, and practice cost-effective medicine.</td>
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<tr>
<th><strong>COMPARISON OF OUTCOMES STANDARDS: WU AND COMP</strong></th>
<th><strong>WU</strong></th>
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<tbody>
<tr>
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<td>3, 4, 5</td>
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Internal Medicine/Cardiology Texts
Alexander: The Heart. McGraw
Cecil: Cecil's Textbook of Medicine. Saunders
Braunwald: Heart Disease. Saunders
Baim: Grossman’s Cardiac Catheterization, angiography, and Intervention
Topal: Textbook of Interventional Cardiology
Constant: Essentials of Bedside Cardiology
Harrison: Harrison’s Principles of Internal Medicine. McGraw
Goroll: Primary Care Medicine. Lipp.
Washington University: Manual of Medical Therapeutics. L.B.
Wagner: Marriott’s Practical Electrocardiology. W & W.
Braunwald: Heart Disease: A Textbook of Cardiovascular Medicine
Drugs of Choice: The Medical Letter
Rizack: Medical Letter Handbook of Adverse Drug Reactions
Jacobs: Laboratory Test Handbook
Tierney: Current Medical Diagnosis & Treatment
Berkow: Merck Manual
Burnside: Physical Diagnosis
Dambro: Griffith’s 5 Minute Clinical Consultant
Ward: Foundations for Osteopathic Medicine
DiGiovanna: Osteopathic Approach to Diagnosis and Treatment

Goldberg: Primer of Water, Electrolyte, and Acid-Base Syndromes
Thaler: The Only EKG Book You Will Ever Need
Hollenbert: Hypertension: Mechanisms and Therapy
Mandel: Cardiac Arrhythmias: Their Mechanisms, Diagnosis, and Management
Williams: Hematology
Lee: Wintrobe’s Clinical Hematology
Larsen/Wilson: Williams Textbook of Endocrinology
Kane: Essentials of Clinical Geriatrics
Duthie: Practice of Geriatrics
Koff: Hospice, a Caring Community
Marino: The ICU Book
Loftus: The Nerd’s Guide to Pre-rounding “How to look smart while feeling stupid in the first months of the third year” UCSF Department of Internal Medicine