Introduction

Fundamentals I is an introductory course integrating the disciplines of gross anatomy, histology, biochemistry, genetics, cell biology, physiology and pharmacology. An overview of the anatomical structure of the organ systems, along with the study of the basic tissues types found in the body will be the framework for then exploring the mechanics of the human body. The course will cover the genetic and biochemical basis of human cell biology and physiology, including the integration of pharmacology and the application of these disciplines in clinical medicine. This involves studying cells from their molecular content and organization to their function and formation into tissues. Correlating normal molecular and functional aspects of cells and tissues with their structural organization and appearance will provide a basis for understanding human diseases that will be discussed in Fundamentals II and throughout the organ-system modules.

Module Dates:  Monday, August 18 – Thursday, October 16, 2014

Module Directors:

Laura Fraser Cotlin, Ph.D.  
Module Director  
Associate Professor  
Department of Cell, Developmental and Integrative Biology  
Volker Hall Room 229  
205-934-5341  
lcotlin@uab.edu

Nathaniel H. Robin, M.D.  
Clinical Co-Director  
Professor  
Departments of Genetics and Pediatrics  
Clinical Office – Kaul Building Room 210  
205-934-9528  
nrobin@uab.edu

Office Hours:  Please contact course directors directly to make an appointment.

Module Coordinator:  Ms. Carolyn Tuma  
Volker Hall 213, Phone: 934-4754, Email: ctuma@uab.edu

Module Locations

Laboratory, exam and small group meeting times/locations will be assigned before the sessions and posted on the course website.

- **Lectures**: Volker Hall Lecture Room E
- **Histology Labs**: Volker Hall G064, G131, and G124 labs
- **Small Group Sessions**: Volker Hall 4th/5th floor small group rooms
- **Genetics Large Group Discussions**: Volker Hall Lecture Rooms E and A
- **Team-Based Learning (TBL) Sessions**: Volker Hall G064, G131, and G124 labs
- **Anatomy Labs and the Anatomy Practical**: Volker Hall G089 Anatomy Lab
- **Computerized Examinations** (including Histology Practical): Volker Hall G077 Computer Lab
Contact Hours

http://www.uab.edu/medicine/home/current-students/policies-procedures/contact-hours-clinical-duty-hours

Schedule Changes

Class schedules and syllabus materials are subject to change and updates will be posted on the Fundamentals I Module course website on the SOM curriculum management system, MEDMap. It is the student’s responsibility to routinely check the MEDMap course website and his/her email for course announcements or updates. Notification of changes may also be communicated to your class representatives.

On occasion due to inclement weather or other safety concerns, teaching activities may be cancelled on campus. In such cases, this will be announced via metropolitan area radio stations, the UAB website at http://www.uab.edu/emergency, and the UAB B-Alert system. You also may call the UAB emergency weather hotline at 205-934-2165.

Essential Capacities (Technical Standards), Disability Support Services, & Reasonable Accommodations

Students who need accommodations for any course activities must register with the UAB Office of Disability Support Services (9th Avenue Office Building, 1701 9th Avenue South, OB9A Suite 100; 934-4205; dss@uab.edu). If a student thinks he/she has a valid reason to request accommodations but has not contacted Disability Support Services (DSS), then s/he is urged to do so promptly.

Students are responsible for providing his/her approved Accommodation Letter to the Fundamentals I Module course directors (Dr. Laura Cotlin / Dr. Nat Robin) BEFORE receiving any accommodations in the Fundamentals I Module.

Students who are registered with DSS and have an approved Accommodation Letter are encouraged to meet with the course directors associated with the teaching activity of concern as soon as possible.

SOM Essential Capacities (Technical Standards) & Provision of Reasonable Accommodations: http://www.uab.edu/medicine/home/current-students/policies-procedures/essential-capacities

Module Objectives

Bioenergetics and Building Blocks

1. Apply principles of thermodynamics and discuss the biochemical mechanisms of energy generation, utilization and conservation in the context of human physiology.
2. Describe the structure and function of the biological building blocks (nucleotides, amino acids, lipids, carbohydrates) and explain the biosynthesis and degradation pathways of these molecules.
3. Understand the concept of energy homeostasis, distinguish between anabolic and catabolic metabolic pathways.
5. Recognize the basic structure of sugars and polysaccharides, interpret carbohydrate nomenclature and describe their diverse biological functions throughout the cell.

Genetics & Development

6. Explain the mechanisms of DNA replication, mutation, repair and recombination.
7. Recognize how genetic traits are transmitted in families and populations, and be able to calculate associated risks.
8. Describe how genetic alternations manifest in a phenotype, and explanations for phenotypic variability.
9. Explain the concepts of genetic exceptionalism, confidentiality and duty to warn in the context of genetic information.
10. Define the concept of genomic medicine, and the role of genetics in current and future health care.
11. Describe the organization and structure of genes and explain the process of gene expression from transcription to translation, including transcriptional regulation, RNA processing and degradation, structure of tRNA and ribosomes, post-translational modifications, and protein degradation.
12. Know the early events of embryogenesis, specifically fertilization, cleavage, blastocyst implantation and the generation of the three germ layers during gastrulation.

Cell Structure and Organization

13. Describe the organization of eukaryotic cells, the structure and function of organelles and cytosolic components, and concepts of cell polarity and compartmentalization.
14. Compare and contrast the pathways and fates of cytosolic proteins versus proteins synthesized at the endoplasmic reticulum and destined for the secretory pathway.
15. Describe processing, sorting and trafficking of proteins as they progress through the secretory pathway and explain how a cell recognizes proteins that are destined for degradation.
16. Describe the organization and function of cytoskeletal elements.
17. Explain the components and mechanisms of the cell cycle, including checkpoints and regulation of progression through the stages, and recognize the components and regulation of apoptosis.
18. Describe the specialized junctions involved in cell communication, cell-to-cell adhesion and cell-to-matrix interactions.
19. Describe apical and basolateral specializations, including location and function of each.
20. Explain how various signals are transmitted, regulated, and terminated via biochemical machinery and become familiar with major signaling pathways.
Cell Physiology

21. Know the key physiologic principles of homeostasis and distinguish between the concepts of steady-state and equilibrium.
22. Use the 60:40:20 rule for estimating total body water (TBW), intracellular fluid (ICF) and extracellular fluid (ECF) from body weight and be able to measure the volumes of body fluid compartments using the indicator dilution method.
23. Know the basic composition and organization of a cell membrane, the factors that influence the orientation and magnitudes of diffusion potentials and cell membrane potentials, and the factors that contribute to the resting membrane potential.
24. Define diffusion basics, including the main factors that influence rates of diffusion, Fick’s Law for simple diffusion, and force-flow relationships, and be able to contrast simple diffusion and facilitated diffusion.
25. Know the driving forces for electrolyte diffusion, as well know the Nernst equation and understand what it measures.
26. Know the two driving forces for water transport and the colligative nature of osmotic pressure, and be able to contrast tonicity and osmolarity.
27. Know the challenges that cells face in maintaining a constant cell volume when they contain impermeant anions and describe the role of the Na-K pump in maintaining a constant cell volume.
28. Trace the movement of a compound that travels across an epithelium by a transcellular pathway and a compound that travels via a paracellular pathway, and explain the functional significance of polarized distribution of various transport proteins to the apical or the basolateral cell membrane.

Tissue Integration

29. Describe, compare and contrast the four basic tissues (epithelia, connective tissue, muscle tissue and nerve tissue) that make up organ systems of the body in terms of structure, function, and location.
30. Describe the specialized tissues of cartilage and bone and discuss development of the skeletal system.
31. Define the terms whole blood, plasma and serum and describe the basic structure and function of red and white blood cells.
32. Describe and identify characteristics of arteries, veins and capillaries at the microscopic level and understand the structure and function of the endothelium.
33. Identify and illustrate the basic tissues of the body, in particular in terms of unique cells and distinguishing/defining structures of each type.

Gross Anatomy

34. Describe general anatomic terminology, relationships, planes and movements.
35. Know the general organization of the major arteries and veins in the human body.
36. Describe the organization of the peripheral nervous system including its distribution, signaling cascade and functions.
37. Describe the organization of the thoracic and abdominal cavities, in particular with respect to cross-sectional anatomy and medical imaging.

Pharmacology

38. Define what is a drug and understand the concept of agonist/antagonist, and review routes of drug administration: inhalation, intravenous (iv), intraperitoneal (ip), intramuscular (im), intrathecal (it), skin lotion, oral and rectal.
39. Explain concepts of Absorption, Distribution, Metabolism and Excretion, and calculate various pharmacokinetic parameters relevant to dosing medications.
40. Understand the organization of the autonomic nervous system, the differences in the neurotransmitters and receptors, and pharmacological regulation of the sympathetic and parasympathetic systems.
Required Textbooks and Reference Materials **

Required Textbooks:

Recommended Textbooks:

** NOTE:

The Lister Hill Library (LHL) Liaison Guide (http://libguides.lhl.uab.edu/som) has a listing of textbooks and other resources that are available electronically for each of the modules. Click on “Fundamentals I” under the “Textbooks” tab for access to these materials for this module.

Attendance and Excused Absences

Required Activities:

• There is no attendance requirement for lectures using the audience response system. However, attendance is required for examinations, laboratories, small group sessions, large group discussions, workshops, patient presentations, simulations, and any other sessions deemed mandatory at the discretion of the course director.

• Absence to any required sessions in a module due to health, personal or family issues must be discussed with the course directors as soon as possible, and students may be referred to the Associate Dean of Students, Dr. Laura Kezar.

• Absences from a required activity (including examination, small group session/workshop, patient presentation, laboratory, or simulation) must be excused by the course director(s) and will be reported to Dr. Laura Kezar, Associate Dean of Students.

• Absences from examinations must be excused by the course director(s) and Dr. Laura Kezar, Associate Dean of Students, with appropriate written documentation prior to the examination. It is the responsibility of the student to contact the Module Director and Dr. Kezar’s office prior to the examination to obtain an excused absence.
Lecture Attendance:

Lecture attendance is highly encouraged to receive the full impact of each lecture and discussion. Lectures are an integral component of the course and bring to the classroom setting a broad array of faculty who are experts in their fields; faculty interact with students and guide their learning on a variety of topics relevant to the course and future practice in medicine and research. The purpose of the lectures is to integrate basic science and clinical information, emphasize major points, highlight material in the readings, guide self-study, and show relevance. The topics have been selected for their medical significance and/or because they illustrate important mechanisms and themes in the understanding of disease processes, clinical research, intervention, therapy, and patient care.

Materials will be made available on the MEDMap course website. Students are strongly encouraged to attend all lectures where class material is presented and faculty assistance is available. Students are expected to arrive to the lecture room on time. Students arriving late disrupt the entire class and the instructor.

Excused Absences, Documentation, and Make-up Examinations:

Documentation for excused absences for required activities (including examinations):

- Absences from a required activity in a course (including examination, small or large group session or workshop, patient presentation, laboratory, simulation experience, etc.) will only be excused with a written medical excuse indicating you are/were being treated for an illness on the day of the activity or other documentation explaining the circumstances for your absence (e.g., due to an emergency or medical condition), with approval of the course director(s).

- Absence from a required activity for a family or personal emergency may be excused at the discretion of the course director(s), but must be verified in writing.

- Any student who misses an examination for any reason will be required to provide appropriate documentation (such as a Physician’s note) in order to obtain an excused absence from an examination. Unexcused absences from any examination will be reported to Dr. Laura Kezar, Associate Dean of Students, and appropriate SOM administration.

Make-up examinations/sessions:

- Students may be excused for family emergencies, illness or previously notified official activities, with appropriate documentation as indicated above. If excused, then every effort will be made by the course directors to accommodate missed sessions.

- You must contact the course director(s) and course coordinator prior to a missed examination to be considered for a make-up examination.

- In addition, a student who is excused from an examination will be expected to make up the examination in a timely fashion as indicated by the course directors. Make-up examinations will be scheduled on a case-by-case basis at the discretion of the course directors. The student who misses an examination must work out arrangements with the course director(s) to take the make-up examination.

- All make-up exams will be given within a week from when the original exam was given and may be a different exam than the regular exam. If this is not possible, then make-ups will be given the final week of class at the convenience of the course directors.
• No make-up sessions will be given for any missed small group activity.

Honor Code, Professionalism, and Student Behavior

Students must comply with SOM Student Policies and Procedures, including the Code of Professional Conduct, Honor Code (“On my honor as a Student of the medical profession, I have not and will not tolerate or engage in academic misconduct”), and guidelines established in courses.

The School of Medicine is committed to providing a safe, respectful, and healthy learning environment. Appropriate professional behavior is expected from all learners, teachers, and support staff in every venue across all encounters. This commitment extends to our regional campuses and other collaborative educational sites.

The Honor Code is in effect at all times, including for assignments and graded assessments and use of study materials. Students should refer to the Student Study Materials Usage Document (SSMUD) on the MEDMap course website to determine which study materials are permissible for a given course. It is an academic violation for students to write down, duplicate, photograph, share, or distribute any part of examination questions or answers, audience response system questions not released by the course director(s), or quiz questions electronically (including email, the Web, or via software programs), in print, verbally, or by any other means.

SOM Policies: http://www.uab.edu/medicine/home/current-students/policies-procedures

Honor Code: http://www.uab.edu/medicine/honorcode

Code of Professional Conduct: http://www.uab.edu/medicine/codeofconduct


Any student may report commendations or concerns directly to the course directors, other faculty members, the Associate Dean for Students office, or via the confidential Report It system: http://www.uab.edu/reportit

Student Attire: Professional attire is required at all patient presentations in the preclinical curriculum, unless otherwise indicated by the course director(s) for a given course. You should dress professionally as a patient would expect to see you in clinic. Students in unprofessional attire will be asked to leave and will not receive credit for the activity. Unexcused absences from patient presentation activities will result in deducted points.

Communications and Interactions: Professional behavior is expected from all students in their interactions with others and in their communications. At all times, you are expected to treat others with respect, and this includes the course director(s), faculty, course coordinators, support staff, patients, and your fellow classmates. The underlying principles of professionalism and the student Honor Code should be adopted throughout each student’s career of lifelong learning and clinical practice.

All communication with course director(s), faculty, staff, and students must comply with the Guidelines for Constructive Feedback (posted on the course website). Course-related material (points of clarification, scheduling, technical problems, etc.) should be sent either directly to a course director(s) or the student representatives who will forward the message to the course director(s). The course director(s) will delineate the preferred route of contact at the beginning of a course. In turn, the course director(s) or course rep will respond to the entire class maintaining student anonymity.
Matters of personal nature should be relayed directly to one of the course directors or to the Associate Dean for Students (Dr. Laura Kezar).

**Educational Settings and Activities:**

1. Students are expected to behave professionally in all educational settings, including any laboratory, simulation, clinical, and/or other educational experiences, within and outside the Volker Hall facilities. This includes student participation in the SOM Gross Anatomy Lab, the Anatomic Pathology Autopsy Facility, Microbiology and Histology laboratory experiences, and simulation-based activities. Each student is expected to conduct himself/herself in accordance with the [SOM Gross Anatomy Lab Guidelines](posted on the course website). The gross anatomy lab is closely monitored and failure to abide by these policies and procedures may result in dismissal from medical school.

2. Students are expected to attend all sessions on time and not be late. If you must be late for class, then please enter quietly and avoid disrupting the lecturer and your classmates.

3. **Computers/laptops are permitted for participating in course activities or taking notes**, but students should not browse the Internet outside of course-related activities, play computer games, or email during the instructional sessions as this is disrespectful to the lecturer and distracting to your classmates.

4. Use of earphones or cell phones (including text messaging) will not be allowed during any instructional activities. Electronic communication devices (cell phones, PDAs, etc.) should be turned off or silenced during class activities unless otherwise permitted (such as laptops).

5. Students should abide by the [Guidelines for Recording and Transcription of Educational Sessions](posted on the course website) below (p. 10).

6. Rude or disruptive behavior is not tolerated.

7. Cheating is not tolerated and may be punishable with dismissal from the UASOM.
Audience Response System (ARS)

Students are required to bring their personal audience response system (ARS) clickers to all activities where ARS is used in order to be able to participate in interactive ARS questions during an activity and to receive credit where there may be graded ARS quizzes in a course and team-based learning activities. Students should come prepared to use ARS clickers in those sessions. This includes Volker Hall lecture rooms and any Team-Based Learning sessions.

Students will need to set the channel of their clickers so that the channel matches the clicker channel for the room in which a particular session is held. It is the student’s responsibility to ensure his/her clicker is operational in advance of a session and that the clicker is set to the appropriate channel for the room in which the session is occurring. If a room changes, the student needs to change the channel on his/her clicker. If a student has a problem with his/her clicker, the student should contact the course director, module coordinator, and/or Dr. John Caldwell immediately.

ARS channels for the lecture rooms and team-based learning (TBL) lab rooms include the following:

<table>
<thead>
<tr>
<th>ROOM</th>
<th>CLICKER CHANNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>VH Lecture Room A</td>
<td>34</td>
</tr>
<tr>
<td>VH Lecture Room B</td>
<td>44</td>
</tr>
<tr>
<td>VH Lecture Room C</td>
<td>54</td>
</tr>
<tr>
<td>VH Lecture Room D</td>
<td>64</td>
</tr>
<tr>
<td>VH Lecture Room E</td>
<td>74</td>
</tr>
<tr>
<td>VH G126</td>
<td>10</td>
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<tr>
<td>VH G124</td>
<td>20</td>
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<tr>
<td>VH G131</td>
<td>30</td>
</tr>
<tr>
<td>VH G064</td>
<td>10</td>
</tr>
</tbody>
</table>

Typically, ARS will be utilized during each lecture/large group discussion for student participation and to provide valuable instructor feedback by querying students on fundamental concepts and to clarify concepts or understanding during a session. When ARS questions are not on a graded quiz, students will not be penalized for missing ARS questions and will not be awarded points for correct answers.

When ARS questions are used in class for a graded quiz, students will be notified in advance through the course website, module schedule, syllabus, or other communications. Any questions used in a graded ARS quiz contribute to a student’s grade. Students only receive credit for correct answers on graded ARS quizzes. Students who do not attend a session in which ARS is used for quiz will forfeit any ARS credit associated with that quiz. There are no make-up sessions for graded ARS quizzes.

The Honor Code is in effect as it pertains to the use of ARS clickers, and adherence to proper professional conduct will be expected at all times. Any student who violates any of the following or have similar infractions will receive a failing grade and their actions will be reported to Dr. Laura Kezar, Associate Dean of Students, and the SOM Honor Council. This inappropriate behavior includes but is not limited to…

1. having someone else use your “clicker” to answer ARS questions.
2. using someone else’s “clicker” to answer ARS questions.
3. standing outside the lecture room to “click-in” but not actually attending the lecture.
4. talking or in any way sharing answers to ARS questions among students.
5. observing someone else cheating on ARS and not reporting it to the module leader.
6. Transcribing / distributing ARS questions in any form, including verbal, print, and electronic, unless otherwise permitted by the course director(s).
Guidelines for Recording and Transcription of Educational Sessions

SOM recordings of educational sessions or materials are provided for students on password-protected websites (such as Echo and MEDMap). Additionally, lecture room computers used by instructors are considered “off-limits” for all students, including transcribers, proofers, and members of the Transcript Committee. It is an Honor Code violation to access the lecture room computers and/or any presentations or other files saved on the lecture room computers.

Audio recording of lectures and large group discussions and transcription of those activities is at the sole discretion of the instructor. The course director(s) and instructors do not review transcripts and are not accountable for any mistakes in transcribed content. An instructor may at any time request that the session not be recorded or transcribed. Individual instructors are not obligated to consent to recording. Any instructor may require that all recording equipment be turned off at any time.

Unless otherwise indicated/permited by the course director(s):

- Questions asked via the Audience Response System (ARS) are not to be transcribed.
- Patient presentations are not to be transcribed. Any recording of patient presentations is at the discretion of the course director.
- Pre-exam review sessions in the module are not to be recorded or transcribed.
- Post-exam reviews, small group and lab sessions are not to be recorded or transcribed.
- Also included are any other sessions in which you are notified that should not be recorded or transcribed within a module.

To do any of the above is a violation of the Honor Code.

Additionally, it is inappropriate for individual students to take pictures or make recordings of any and all School of Medicine educational activities and educational settings (including lectures or other large groups, small group sessions, simulations, laboratory sessions) and any activities within a clinical or hospital setting.

Student recordings of educational sessions are strictly prohibited unless there has been permission obtained through the office of the Associate Dean for Undergraduate Medical Education (Dr. Craig Hoesley). If the request is approved, the student must obtain consent from appropriate parties.

Students who engage in inappropriate conduct such as taking pictures and/or recording sessions will be reported to the Associate Dean for Students (Dr. Laura Kezar); appropriate action will be taken per the SOM Non-academic Conduct Policy: [https://www.uab.edu/medicine/home/current-students/policies-procedures/non-academic-conduct](https://www.uab.edu/medicine/home/current-students/policies-procedures/non-academic-conduct).
Echo Recording System

Echo is used to record presentations for sessions held in Volker Hall Lecture Rooms A and E only. There will be no Echo session recordings available for simulations, laboratory sessions, small group rooms, or other Volker Hall lecture room facilities.

Echo recordings permit students to view a recorded PowerPoint presentation or other materials projected on screen in the lecture room, synced to the audio recording from the session. Sessions that are recorded on Echo become available to students following the lecture (e.g., within 2 hours).

Echo recordings do not substitute for attendance in class. Lecture attendance is strongly encouraged and recommended.

Additionally, there may be sessions in a course that are not recorded on Echo. This includes any sessions in which there are post-exam reviews, ARS graded quizzes or other assessments, given patient presentations, or other instances in which the session is not to be recorded – at the discretion of SOM, course directors and faculty, or otherwise (including situations in which recording may not be possible at a given date/time).

Any ARS questions used in a recorded session and available online on Echo and/or MEDMap after the session should only be used by the students enrolled in that given course and not transcribed or distributed by students (unless otherwise specifically released by the course director for that course).

Students are permitted to download recordings from Echo and/or MEDMap. However, students should only use these recordings for their educational benefit and are prohibited from distributing these recordings to other parties outside the medical school class or to other medical school classes.

You may log in directly to a module Echo page using your BlazerID and password. A link to the module Echo site is also available on the homepage of the MEDMap course website. If you have difficulty accessing or viewing sessions on the Echo system, then please contact the MEIS Help Desk at 934.6620 (meis@uab.edu).

2014-2015 Fundamentals I ECHO Recordings:

http://echo.medicine.uab.edu:8080/ess/portal/section/dd7bc374-6b5e-4e9c-8b2d-0efd449559cb

2013-2014 Fundamentals I ECHO Recordings: (Archived Prior Year Recordings)

http://echo.medicine.uab.edu:8080/ess/portal/section/1c862af6-8119-478f-b420-02894148cec8
MEDMap Course Website

Students are expected to come prepared to class, labs, and all group activities. Lectures and course activities will convey learning objectives, highlight course material, and provide exercises in knowledge, application, and relevance.

Beginning the 2014-2015 academic year, all course materials for MS-1s and MS-2s will be posted to MEDMap, including schedules, syllabi, PowerPoint presentations and other relevant course documents, announcements, and links to additional resources (such as Echo).

MEDMap is the new curriculum management system for the School of Medicine and has been developed by MEIS to streamline calendaring and portfolio functions, mobile device accessibility, course delivery, and course mapping at the School of Medicine. MEDMap was designed and developed in response to, and in conjunction with, feedback from the student focus groups and the LCME student self-study, course directors, teaching faculty, staff, and the MEC MEDMap task force.

Students should check MEDMap, calendars, and email routinely for announcements, updates, or other communications for a course. It is the responsibility of the student to review material posted on the MEDMap course website. Materials will be posted to the MEDMap by course directors and/or module coordinators as these materials become available in a module, and materials may be updated as necessary.

How to access MEDMap:

Log into MEDMap with your BlazerID to access course materials as they become available.

MEDMap has a web browser view, mobile device view, and calendar subscription feed available:

- **MEDMap:** [https://services.medicine.uab.edu/medmap](https://services.medicine.uab.edu/medmap)
- **MEDMap Mobile View:** [https://services.medicine.uab.edu/medmap/mobile](https://services.medicine.uab.edu/medmap/mobile)
- **MEDMap base URL for an individual student iCalendar feed** (for Google, Outlook, etc.): [https://services.medicine.uab.edu/medmap/mobile/ical_student.asp?Blazerid=xxxxxxxx](https://services.medicine.uab.edu/medmap/mobile/ical_student.asp?Blazerid=xxxxxxxx)

(where “xxxxxxxx” = your BlazerID, see the **MEDMap Student Manual** on the course website for optional parameters for the calendar subscription feed)

MEDMap and other SOM Technologies:

KnowledgeMap: MEDMap will be used for all MS-1 and MS-2 required courses in place of KnowledgeMap. KnowledgeMap is still available ([http://km.uasom.uab.edu](http://km.uasom.uab.edu)) for upper classes on clerkships as the school transitions to MEDMap and for MS-2s to access prior year’s materials on KnowledgeMap (MS-2’s Year 1 materials on KnowledgeMap also have been copied into MEDMap).

**Learning Portfolio:** MEDMap has incorporated the SOM Learning Portfolio as one of its components (now listed as “Assignments” in MEDMap). Students will use MEDMap in place of the Learning Portfolio for any preclinical courses, including Introduction to Clinical Medicine (ICM).

**Echo recordings:** Echo recordings are available from the module Echo site posted on the course homepage in MEDMap, so students have access to Echo recordings for the current and prior year. The Echo recording for a given presentation also will automatically appear under the Materials tab in conjunction with that given session on the MEDMap course website, provided the session was to be recorded and once the recording has been processed by the Echo server. In some cases, archived Echo links or other recordings selected by course directors for self-study may be manually linked into MEDMap under the Materials tab for a session.
**MEDMap and Student Schedules:**

Because MEDMap includes a calendar feed, student groups will be scheduled in MEDMap as students are assigned. Student group listings will continue to be posted on each course website in MEDMap with the course schedule, syllabus, and other guidelines on the course homepages. The student group listings will be used to schedule students in a module for their activities. At the beginning of a module or prior to a module, a student may see all sessions for a course, irrespective of their student group assignment, until the student assignments can be scheduled in MEDMap. As students are assigned to specific locations, activities, groups, and session times for group activities in a module on the MEDMap course website, each student’s calendar and MEDMap course website will be individually customized show those sessions to which a student has been assigned.

It is the responsibility of the student to review the module schedule, syllabus, and student group listing posted on the course homepage in the event there is a discrepancy in MEDMap, since the schedule and student group listing documents are used to assign students to given sessions in MEDMap. If there is a discrepancy, please contact the module coordinator (Ms. Carolyn Tuma, ctuma@uab.edu) as soon as possible for additional assistance.

It is the responsibility of the student to keep up with any changes in their schedule or assigned groups. Students must have course director approval to changes to their group assignments or to the day and/or time they are assigned to an activity and must provide appropriate documentation for any excused absences in a course. If a student has an approved change in his/her assigned group or schedule for an activity, students should note the change and are responsible for their new assignment. The student’s calendar in MEDMap likely will not reflect this change.

**SOM Calendars and the SOM Website**

The SOM calendars page at [http://www.uab.edu/medicine/home/current-students/calendars/](http://www.uab.edu/medicine/home/current-students/calendars/) has scheduling and contact information available to students, faculty, and staff for the SOM curriculum.

**Examination Dates:**
[http://www.uab.edu/medicine/home/current-students/calendars/exam-dates](http://www.uab.edu/medicine/home/current-students/calendars/exam-dates)

**First-Year Schedules and Contact Information:**
[https://www.uab.edu/medicine/home/current-students/calendars/first-year-schedule](https://www.uab.edu/medicine/home/current-students/calendars/first-year-schedule)

**Second-Year Schedules and Contact Information:**
[https://www.uab.edu/medicine/home/current-students/calendars/second-year-schedule](https://www.uab.edu/medicine/home/current-students/calendars/second-year-schedule)

In addition, the Academic Calendar, Curriculum Schematics, Graduation Requirements, and a number of other resources are also available to you from this page or the Current Students tab on the SOM website.

**2014-2015 Academic Calendar:**

**2015-2016 Academic Calendar (tentative):**

**Curriculum Schematics Years 1-4:**
[http://www.uab.edu/medicine/home/images/current_students/SOM_Curriculum_Years1-4_Schematic.pdf](http://www.uab.edu/medicine/home/images/current_students/SOM_Curriculum_Years1-4_Schematic.pdf)

**Graduation Requirements:**
Examinations and Quizzes

Refer to the “General Guidelines for Examinations” (Appendix A, pp. 21-22) and “Examinations Guidelines for NBME Standardized Examinations” (Appendix B, p. 23) provided at the end of the syllabus as to expectations and behavior for all examinations. These guidelines are also provided with the Examination Groups and testing times posted on the course website on MEDMap.

Computer Testing Systems:

You will receive information for how to log in to the testing software from the testing administrator (Dr. John Caldwell, jcaldwel@uab.edu, 975-2479).

- NBME standardized examinations will be administered on the NBME testing system in the VH G077 Computer Lab for NBME examinations on assigned exam days and times.

- Non-NBME examinations and quizzes restricted to the VH G077 Computer lab will be administered on the ExamSoft testing system during assigned times.

- Other quizzes or take-home examinations that may be taken on-or-off campus may be administered on the Perception testing system, unless otherwise notified (http://perception.medicine.uab.edu/perception5/perception.php)

Exam Scheduling and Excused Absences:

Exams will be held in the Volker Hall G077 Computer Lab and taken on the computers available in that room, unless otherwise notified. Anatomy lab practicals will be held in the VH G089 Anatomy Lab.

Students are expected to be ON TIME for their assigned examinations on examination day.

Students are assigned to examination groups for most examinations across the preclinical curriculum and should consult the course website on MEDMap for assigned exam times on examination days.

In general, students are NOT permitted to switch their assigned examination times for a given examination with another student and MUST take their examination at the time they are assigned.

Changes in a student’s examination time are only permitted in the case of illness or other extenuating circumstances deemed acceptable by the Module Director/Clinical Co-Director, in which case the student needs to obtain prior approval from the Module Director to switch times with another student and may be asked to provide documentation of the reason for the change in examination time. If approved, then any examination switches will be confirmed and scheduled by the Module Coordinator.

The Honor Code is in effect for all examinations and quizzes. Examinations or quizzes may not be taken outside of designated locations or assigned times without course director approval and is a violation of the Honor Code. Any student who duplicates or distributes examination or quiz questions, and anyone who knowingly receives and uses these duplicated items will receive a failing grade in the module and will be reported to the Associate Dean of Students (Dr. Laura Kezar) and Honor Council.

Students should contact the Module Director (Dr. Cotlin, lcotlin@uab.edu) and Module Coordinator (Ms. Carolyn Tuma, ctuma@uab.edu) prior to absences from any examination, and also Dr. William S. Brooks (wbrooks@uab.edu) prior to any absence from the Anatomy Practical. Refer to “Attendance and Excused Absences,” pp. 5-6, for guidelines and required documentation.
Exam Feedback:

Students may discuss examinations or questions they have with course directors. There may be review sessions or information provided by course directors following an examination to the class. All examinations will be closed and exam questions are unavailable for review or challenge. Course directors and exam administrators will review the exam and exam statistics and make adjustments if needed.

You will have ample opportunity to review your performance and discuss any concerns with the faculty in the module. Review sessions may be conducted during or outside of regular class hours, the dates and times of which will be announced during a course should a formal in-class review session be held.

Students may set up appointments with the course directors to review questions they may have about exams or to discuss their performance in the course.

Students can direct questions about anatomy practicals to Dr. William Brooks (wbrooks@uab.edu).

Advising and learning resources are also available through the SOM Office of Academic Success: http://www.uab.edu/medicine/home/current-students/medical-student-services/academic-success-resources

In addition, after each non-NBME computerized examination, you receive an email with feedback for that examination – the actual examination question is not released, but you are provided with feedback related to the USMLE Content Areas covered by the items you miss. A listing of all USMLE Content Areas will be available on the course website in MEDMap as a reference. Exam feedback on NBME standardized examinations will be provided by the NBME.

Module Evaluations

Student evaluation of the course and its instructors and directors is extremely important. The data are used annually to address any weaknesses or challenges with the module. You will receive evaluation forms to complete for lecturers and preceptors during the course as well as an overall course evaluation to complete at the end of the course. Evaluation forms will be available via a link you will receive in your email through the E*Value system.

**Evaluations are required.**

If you are assigned to evaluate a certain lecture/r, you must attend that lecture.

Student assignments for completing evaluations are posted on the MEDMap course website. If you have questions or need assistance with evaluations, contact Mike Belue (mbelue@uab.edu).

Students must submit all Fundamentals I Module evaluations in E*Value by Monday, October 27, 2014, by 12:00 pm NOON.

Students are strongly encouraged to complete all evaluations of the course as soon as possible once the course ends!

Students not completing any assigned evaluations by the evaluation submission deadline will automatically have TWO POINTS DEDUCTED from his/her final grade in the course (and will forfeit the opportunity to complete any outstanding evaluations after the evaluation deadline to make up for this point deduction).
Module Grading
There are two components that will comprise your final grade: Knowledge Performance (“Knowledge” score) and Individual/Group Performance (“Participation” score). You must pass BOTH the Knowledge Performance and Individual/Group Performance components of the module (i.e., achieve ≥70% on each component) in order to pass the module.

In the Fundamentals I Module, specifically:

1. **Knowledge Performance (“Knowledge” score)** is based on five computer-based examinations and a combined histology/anatomy practical examination. To pass the Knowledge component, the student must achieve at least a cumulative 70% Knowledge Performance score (“Knowledge” score).

2. **Individual/Group Performance (“Participation” score)** is based on laboratory quizzes, nutrition assignment, small groups, genetics assignment, TBL activities, and human nature essay. To pass the Participation component, the student must achieve at least a cumulative 70% Individual/Group Performance score (“Participation” score).

### Knowledge Performance (“Knowledge” Score): 75%

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<tr>
<td>Exam I</td>
<td>120 points</td>
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<td>Exam II</td>
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<td>Exam III</td>
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<td>Exam IV</td>
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<td>NBME Final Exam</td>
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<td><strong>Total Knowledge Performance</strong></td>
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### Individual/Group Performance (“Participation” Score): 25%

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<tr>
<td>Histology Lab Quizzes</td>
<td>30 points</td>
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<tr>
<td>Anatomy TBL Groups</td>
<td>70 points</td>
</tr>
<tr>
<td>Sickle Cell Disease Small Groups</td>
<td>20 points</td>
</tr>
<tr>
<td>Metabolic Diseases Small Groups</td>
<td>20 points</td>
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<tr>
<td>Physiology Small Groups</td>
<td>20 points</td>
</tr>
<tr>
<td>Genetics Large Group Discussion/Assignment</td>
<td>30 points</td>
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<tr>
<td>Nutrition Assignment</td>
<td>40 points</td>
</tr>
<tr>
<td>Human Nature Essay</td>
<td>20 points</td>
</tr>
<tr>
<td><strong>Total Individual/Group Performance</strong></td>
<td>250 points</td>
</tr>
</tbody>
</table>

**Combined Total for Overall Module** 1000 points 100%

**Students are required to attend all Fundamentals I activities:**

1. Unexcused absences from an examination, large/small group activity, or student presentation will result in loss of total points for the given activity.
2. Unexcused absences from any patient presentation will result in a 1 % point deduction with each absence from the Individual and Group Performance total points.

Your final module grade will be determined by dividing your total points achieved by 1000. Remember, **students must achieve a score of ≥ 70% in each of the two components (i.e. ≥ 588 Knowledge Points and ≥ 112 Participation points) to pass the module.** Overall module grades will be reported as a % and the UASOM will use a Pass (P) – Fail (F) grading system. A final grade of “Fail” in the module can be remediated by repeating the module in its entirety or by completing assignments and/or exams approved by the course directors and UASOM Student Academic Standing Committee. Students in the “Fail” category will be evaluated on a case-by-case basis.

**The Fundamentals I module must be successfully passed / remediated in order to begin the Organ-based System Modules in the winter of the first year of the medical curriculum.**
Knowledge Performance Activities

Examinations I-V:

Five computer-based examinations will be administered. The first four examinations will use the ExamSoft testing system and the fifth will be a cumulative NBME standardized exam on the NBME testing system.

All exams will be administered on computers in the VH G077 Computer Lab.

Exam groups and testing times will be assigned and posted on the course website on MEDMap, and students are responsible for confirming their scheduled testing times.

The Honor Code is in effect. It is a violation of the Honor Code to discuss any aspect of an exam until all students have completed the exam.

Each exam is comprised of multiple-choice questions, closed book, and timed (~2-hour time limit).

Examination I (120 points): Thursday, August 28
Examination II (120 points): Tuesday, September 9
Examination III (120 points): Thursday, September 25
Examination IV (120 points): Monday, October 13
Examination V (120 points): Thursday, October 16 (NBME) -- Examination V will be a cumulative NBME standardized final examination and will cover material presented during the entire module. NBME standardized examinations are administered in accordance with NBME testing guidelines. See “Examinations Guidelines for NBME Standardized Examinations” (Appendix B, p. 24).

Laboratory Practical Examinations:

There will be two laboratory practical examinations in the Fundamentals I Module.

Laboratory practical exam groups and testing times will be posted on the MEDMap course website, and students are responsible for confirming their scheduled testing times.

The Honor Code is in effect. It is a violation of the Honor Code to discuss any aspect of an exam until all students have completed the exam

Combined Histology / Anatomy Practical (150 points): Monday, October 6:

(1) The Histology Practical will be a closed book, computerized exam timed for 45 minutes. The histology practical will be held in the VH G077 Computer Lab and cover the microscopic anatomy and histology of basic tissues.

(2) The Anatomy Practical will be a closed book, paper-and-pen, fill-in-the-blank identification style exam with 1 minute allotted for each question in a 60-minute practical session. The anatomy practical will be held in the VH G089 Anatomy Lab and will cover gross anatomy and radiology.
Individual and Group Performance Activities
Refer to the Student Groups posted on the Fundamentals I MEDMap website during the module for meeting room locations and assigned session groups/times.

1. **Histology Laboratory Quizzes (30 points)** – There will be a short quiz at the end of each histology lab session based on the material covered each session. Lab assignments will be posted on the Fundamentals I MEDMap website during the module.

2. **Anatomy Team-Based Learning (TBL) Groups (70 points)** – In the context of the TBL sessions, students will be assessed by individual quiz responses, group quiz responses, and peer evaluation. Group assignments and details will be discussed in class and posted on the Fundamentals I MEDMap website during the module.

3. **Sickle Cell Disease Small Groups (20 points)** – You will attend a small group meeting to discuss sickle cell disease, from molecular genetics to clinical considerations. Cases and problem sets will be posted on the Fundamentals I MEDMap website prior to group meetings.

4. **Metabolic Diseases Small Groups (20 points)** – You will attend a small group meeting to review and discuss metabolic diseases, addressing biochemical concepts and clinical presentation. Cases and problem sets will be posted on the Fundamentals I MEDMap website for these sessions prior to the group meetings.

5. **Physiology Small Groups (20 points)** – You will attend a small group meeting to review, discuss and apply physiological concepts in relation to clinical medicine. Cases and problem sets will be posted on the Fundamentals I MEDMap website prior to the group meetings.

6. **Genetics Large Group Discussion and Assignment (30 points)** – You will complete this assignment with your assigned core group. You will be given a series of questions/problems regarding the medical application of Whole Genome Sequencing. Each group will research the problems and as a group submit the answers/responses as well as appropriate references used in your research. Deadlines and specific details for this activity will be discussed in class and posted on the Fundamentals I MEDMap website during the module.

7. **Nutrition Assignment (40 points)** – This nutrition assignment will require you to monitor your dietary input for a week, analyze the data, and be prepared to discuss your results in class. Specific details regarding this assignment will be provided during the first week of the module and posted on the Fundamentals I MEDMap website during the module.

8. **Human Nature Essay (20 points)** – You will write an essay on a topic related to the thread of themes, including evolution, genetics, human nature and ethics. Specific details regarding this assignment will be discussed in class and posted on the Fundamentals I MEDMap website during the module.

**Student Performance Deductions for Failure of Professional Conduct:**
Students are expected to adhere to the “Honor Code, Professionalism, and Student Behavior” guidelines in the syllabus (pp. 7-8) and the SOM policies. Evaluations of student performance at the School of Medicine include an assessment of professional conduct, and course directors will assess professional conduct when evaluating student performance in a module.

Specific failures of professional conduct will be documented and may, at the course directors’ discretion, lead to adjustments to the students evaluation and/or overall grade. The points deducted and the reasons for those deductions are at the discretion of the course director. Examples include, but are not limited to...

- Unexplained or unexcused absences
- Failure to respect personal and professional boundaries
- Rude or offensive behavior in any form
- Misleading preceptors or team members
- Signing attendance at events not attended

The student has the right to appeal to the Associate Dean for Undergraduate Medical Education.
Module Contact Information and Resources in MEIS and UME

Faculty and staff in MEIS and the Undergraduate Medical Education office (UME) are available to assist if you have specific questions or need additional assistance in the areas below:

**Medical Education Information Services:**

**MEIS Help Desk**
Technical assistance:
Computer Lab, SOM Servers, Lecture Room Facilities, Echo Lecture Capture System, MEDMap
Phone: 934-6620, Email: meis@uab.edu

**Undergraduate Medical Education:**

**Kristina T. C. Panizzi Woodley, Ph.D.**
Program Director, Curriculum Development and Accreditation Management, Academic Calendar
Volker Hall 201J, Phone: 975-0834, Email: kristina@uab.edu

**Sharon Noser**
Module Coordinator
Volker Hall 201H, Phone: 934-5118, Email: snoser@uab.edu

**Carolyn Tuma**
Module Coordinator
Volker Hall 213, Phone: 934-4754, Email: ctuma@uab.edu

**Ann Lee**
Introduction to Clinical Medicine (ICM) Coordinator
Volker 3rd Floor, ICM Office/Clinical Skills Lab, Phone: 934-4473, Email: annlee@uab.edu

**Tiffany Henderson**
VH SOM Room Reservations Scheduler
Volker Hall 225, Phone: 934-5296, Email: thenders@uab.edu

**Kenneth Hurd**
Audience Response System – Faculty Help
UME Audiovisual Support Specialist and Module Support
Volker Hall 201K, Phone: 934-2246, Email: ken84@uab.edu

**John Caldwell, Ph.D.**
Testing Administrator (Perception/ ExamSoft / NBME)
Audience Response System - Student “Clicker” Help
Student Grades
Volker Hall 201F, Phone: 975-2479, E-mail: jcaldwel@uab.edu

**Mike Belue**
Evaluation Administrator (E*Value) and Module Evaluations
Special Topics, Co-enrolled Electives
Volker Hall 201D, Phone: 934-3872; Email: mbelue@uab.edu
Module Faculty
Students will be fortunate to learn from and interact with outstanding faculty from both the Joint Health Science and Clinical Departments at UAB. Contact information for faculty is provided below. ***

***Please feel free to contact course faculty directly if you have specific questions regarding their lecture material. Please be thoughtful and concise in your questions, and refrain from asking questions until you have consulted the required readings and attempted to answer the questions on your own. Finding an answer for yourself (rather than being told the answer) will most likely result in you learning the material and retaining the knowledge in a meaningful way.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Department</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tika Benveniste, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:tika@uab.edu">tika@uab.edu</a></td>
</tr>
<tr>
<td>William Brooks, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:wbrooks@uab.edu">wbrooks@uab.edu</a></td>
</tr>
<tr>
<td>Chenbei Chang, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:cchang@uab.edu">cchang@uab.edu</a></td>
</tr>
<tr>
<td>Ching-Yi Chen, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:cchen@uab.edu">cchen@uab.edu</a></td>
</tr>
<tr>
<td>Jim Collawn, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:jcollawn@uab.edu">jcollawn@uab.edu</a></td>
</tr>
<tr>
<td>Laura Cotlin, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:lcotlin@uab.edu">lcotlin@uab.edu</a></td>
</tr>
<tr>
<td>Pete Detloff, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:detloff@uab.edu">detloff@uab.edu</a></td>
</tr>
<tr>
<td>Andrew Duxbury, MD</td>
<td>Medicine – Gerontology/Geriatrics</td>
<td><a href="mailto:aduxbury@uab.edu">aduxbury@uab.edu</a></td>
</tr>
<tr>
<td>Charles Falany, PhD</td>
<td>Pharmacology and Toxicology</td>
<td><a href="mailto:cfalany@uab.edu">cfalany@uab.edu</a></td>
</tr>
<tr>
<td>Zdenek Hel, PhD</td>
<td>Pathology</td>
<td><a href="mailto:zhel@uab.edu">zhel@uab.edu</a></td>
</tr>
<tr>
<td>Natalia Kedishvili, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:nkedishvili@uab.edu">nkedishvili@uab.edu</a></td>
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<tr>
<td>Kevin Kirk, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:kikirk@uab.edu">kikirk@uab.edu</a></td>
</tr>
<tr>
<td>Bruce Korf, MD, PhD</td>
<td>Genetics</td>
<td><a href="mailto:bkorf@uab.edu">bkorf@uab.edu</a></td>
</tr>
<tr>
<td>Edward Lose, MD</td>
<td>Clinical Genetics</td>
<td><a href="mailto:elose@uab.edu">elose@uab.edu</a></td>
</tr>
<tr>
<td>Susan Nozell, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:snozell@uab.edu">snozell@uab.edu</a></td>
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<td>William Placzek, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:placzek@uab.edu">placzek@uab.edu</a></td>
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<tr>
<td>Kirill Popov, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:kpopov@uab.edu">kpopov@uab.edu</a></td>
</tr>
<tr>
<td>John Porterfield, MD</td>
<td>Surgery – General Surgery</td>
<td><a href="mailto:jporterfield@uabmc.edu">jporterfield@uabmc.edu</a></td>
</tr>
<tr>
<td>Matt Renfrow, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:renfrow@uab.edu">renfrow@uab.edu</a></td>
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<tr>
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<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:resuehr@uab.edu">resuehr@uab.edu</a></td>
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<tr>
<td>Nathaniel Robin, MD</td>
<td>Genetics</td>
<td><a href="mailto:nrobin@uab.edu">nrobin@uab.edu</a></td>
</tr>
<tr>
<td>Eben Rosenthal, MD</td>
<td>Surgery - Otolaryngology</td>
<td><a href="mailto:erosenthal@uabmc.edu">erosenthal@uabmc.edu</a></td>
</tr>
<tr>
<td>Lane Rutledge, MD</td>
<td>Clinical Genetics</td>
<td><a href="mailto:rutledge@uab.edu">rutledge@uab.edu</a></td>
</tr>
<tr>
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</tr>
<tr>
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<td>Cell, Developmental &amp; Integrative Biology</td>
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</tr>
<tr>
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<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:prsmith@uab.edu">prsmith@uab.edu</a></td>
</tr>
<tr>
<td>Taraneh Soleymani, MD</td>
<td>Nutrition Sciences</td>
<td><a href="mailto:soltar@uab.edu">soltar@uab.edu</a></td>
</tr>
<tr>
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<td>Radiology</td>
<td><a href="mailto:ssonavane@uabmc.edu">ssonavane@uabmc.edu</a></td>
</tr>
<tr>
<td>Eric Sorscher, MD</td>
<td>Medicine - Hematology/Oncology</td>
<td><a href="mailto:sorscher@uab.edu">sorscher@uab.edu</a></td>
</tr>
<tr>
<td>Theresa Strong, PhD</td>
<td>Medicine - Hematology/Oncology</td>
<td><a href="mailto:tvstrong@uab.edu">tvstrong@uab.edu</a></td>
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<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:esztul@uab.edu">esztul@uab.edu</a></td>
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<tr>
<td>Amy Theos, MD</td>
<td>Dermatology</td>
<td><a href="mailto:Amy.Theos@chsys.org">Amy.Theos@chsys.org</a></td>
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<td>Tim Townes, PhD</td>
<td>Biochemistry &amp; Molecular Biology</td>
<td><a href="mailto:ttownes@uab.edu">ttownes@uab.edu</a></td>
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<td>Teresa Wilborn, PhD</td>
<td>Pharmacology and Toxicology</td>
<td><a href="mailto:twilborn@uab.edu">twilborn@uab.edu</a></td>
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<tr>
<td>Martin Young, PhD</td>
<td>Medicine - Cardiovascular Disease</td>
<td><a href="mailto:meyoung@uab.edu">meyoung@uab.edu</a></td>
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<tr>
<td>Steve Zehren, PhD</td>
<td>Cell, Developmental &amp; Integrative Biology</td>
<td><a href="mailto:szehren@uab.edu">szehren@uab.edu</a></td>
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Course Assistance:
Questions regarding the Fundamentals I module may be directed to Dr. Cotlin (Fundamentals I Module Director, lcotin@uab.edu), Dr. Nat Robin (Fundamentals I Clinical Co-Director, nrobin@uab.edu), Ms. Carolyn Tuma (Fundamentals I Module Coordinator, ctuma@uab.edu), or the Fundamentals I course representatives.
APPENDIX A: General Guidelines for Examinations

1. Honor Code and Academic/Professional Behavior:

The Honor Code is in effect, and professional behavior and academic integrity is expected.

All examinations are restricted to the assigned rooms, groups, and testing times. Cell phones, digital cameras, PDAs, laptops, and other recording / listening devices are to be turned off during all examinations.

**Students may not copy, write down, distribute, or share examination questions, answers, or content, in any form, including print, verbal, or electronic.**

**Students may not discuss examination content or questions with each other during an examination, between exam testing times, or after an exam (unless permitted by the course director once students have taken the examination).**

2. Assigned Examination Groups:

**Students are assigned to Examination Groups 1, 2, or 3.** Each examination group is scheduled to take their examination at a designated time. Testing time slots for these examination groups are rotated for each examination so no group is always testing in the same time slot across modules during the academic year.

**In general, students are NOT permitted to switch their assigned examination times for a given examination with another student and MUST take their examination at the time they are assigned.**

Changes in a student’s examination time are only permitted in the case of illness or other extenuating circumstances deemed acceptable by the Module Director, in which case the student needs to obtain prior approval from the Module Director to switch times with another student and may be asked to provide documentation of the reason for the change in examination time. If approved, then any examination switches will be confirmed and scheduled by the Module Coordinator.

3. Exam Location and Times:

Computerized examinations are typically RESTRICTED to the Volker Hall G077 Computer Lab during assigned shifts. Any other types of examinations (e.g., paper-based practicals) or testing locations will be indicated, where applicable, for a given module.

Examinations may NOT be taken outside the VH G077 Computer Lab or designated testing location and/or at times outside of a student’s assigned examination time. For computerized examinations, students will log in to the exam system on examination day at their assigned examination time using their exam logins.

**NBME Computerized Examinations:** In general, each module will have at least one NBME computerized examination. NBME computerized examinations will be indicated in the examination schedule and are administered on the NBME testing system (This is typically the final examination but could be any examination in a given module, such as a midterm). Calculators are NOT permitted on NBME examinations.

**Non-NBME Computerized Examinations:** All other non-NBME computerized examinations in a module will be administered on a non-NBME testing system (e.g., ExamSoft/Perception). In general, you are permitted to bring a calculator for non-NBME examinations, unless otherwise indicated by the course director or exam administrators.
4. **Expectations for Students on Examination Days:**

**Students are expected to be ON TIME for all assigned examinations.**

Students are expected to arrive outside the testing location (e.g., VH G077 Computer Lab) 10-15 minutes prior to the beginning time of their assigned examination shift. Students will be permitted to enter the testing location once the previous examination shift has ended. Students must be present and seated in the testing location at the start time of their assigned examination shift.

All computerized examinations must conclude no later than 10 minutes after the examination shift has ended for a given examination group, irrespective of the examination time remaining on a student's computer (i.e., examination timer), unless otherwise permitted by the examination administrator due to extenuating circumstances. This also means that students who enter the testing facility late for an examination and do not begin their examination on time enter the risk of not completing the examination in the allotted time and may be required to submit their examination before the time limit on the computer ends (if the examination shift has ended), regardless of whether or not the examination is complete.

**ATTENTION:** In addition, refer to the “Guidelines for NBME Standardized Examinations” (SEE NEXT SECTION BELOW) in advance of a NBME examination, as there are specific NBME testing guidelines and procedures in effect for all the NBME examinations.

5. **Tardiness on Examination Days:**

Students who are late for an examination run the risk of NOT being permitted to take the examination and may be referred to the Module Director and Dr. Laura Kezar, Associate Dean of Students. Additionally, students who are late for an examination risk forfeiting points associated with that examination unless the tardiness is excused and the student is permitted to take the examination.

6. **Excused Examinations:**

Absences from examinations must be excused by the Module Director and Dr. Laura Kezar, Associate Dean of Students, with appropriate written documentation prior to the examination. In addition, unexcused absences from any examination will be reported to Dr. Laura Kezar and appropriate SOM administration.

Any student who misses an examination for any reason will be required to provide appropriate documentation (such as a Physician’s note) in order to obtain an excused absence from an examination.

A student who is excused from an examination will be expected to make up the examination in a timely fashion as indicated by the Module Director.

7. **Examination Feedback:**

Students may discuss examinations or questions they have with course directors. There may be review sessions or information provided by course directors following an examination to the class. After each non-NBME computerized examination, you receive an email with feedback for that examination – the actual examination question is not released, but you are provided with feedback related to the USMLE Content Areas covered by the items you miss. A listing of all USMLE Content Areas will be available on the course website in MEDMap as a reference. Exam feedback on NBME standardized examinations will be provided by the NBME.


APPENDIX B: Guidelines for NBME Standardized Examinations

It is the responsibility of each student to show up for the testing slot to which you have signed up or have been assigned. **There will be no rescheduling or swapping of testing times as the roster for the examination is loaded in advance of the examination in order to provide students with access to the examination.**

Your exam proctors have agreed to implement the electronic NBME examinations according to the NBME requirements. The requirements below are taken from the NBME proctor's manual. You should read these in advance so you are aware of the instructions you will hear on examination day. Thank you.

1. On examination day, each student **must show up on time for his/her examination time slot.** This is non-negotiable as the test is delivered by the NBME through a secured browser.
2. You should **not** enter the lab until the Chief Proctor (or one of the assistant proctors) has opened the door to the lab and permits you entrance. You should quietly wait in the hall until you are admitted entrance. However, you will be required to have your student identification/access card.
3. You should sit quietly at your workstation until you receive further instructions from the Chief Proctor as to how to access the examination screen and log in to the examination.
4. You will be provided with one blank sheet of scratch paper during the examination. If needed, pencils will be provided.
5. Once you have finished the exam please **exit quietly through the proctor control room exit.** All paper (used or unused and pencils (if borrowed) will be collected as you exit the exam.
6. When you enter the lab, you should not have any of the electronics, food/beverage, or personal items (more detailed list below). NOTE: Because of a previous incident of theft, none of your belongings should be brought to the exam. Please put all of your belongings in your locker as we are unable to receive, store or watch them for you.

These items include, but are not limited to the following:

- Cell phones
- iPods/ iPads
- Watches with alarms, computer or memory capability
- Calculators
- Paging devices
- Recording/filming devices
- Reference materials (book, notes, papers)
- Backpacks, briefcases, or luggage
- Beverages or food of any type
- Coats, outer jackets, or headwear - please dress in such a way that you do not need a coat/jacket to be comfortable.

**Scratch Paper:** You will be provided with one piece of scratch paper and a pencil. You are permitted to make calculations or notes only on the scratch paper once the exam begins. The question content or answer choices are not permitted to be copied on your scratch paper. You can use both sides. If you need additional space for making notes/calculations, a proctor will collect the "filled" scratch paper and replace it with a new one. Scratch paper will be collected at the end of the examination session as you exit the room.

**Restroom Breaks:** If you need to take a restroom break, quietly walk to the proctors control room and a proctor will escort you. Before taking a restroom break and leaving your workstation, you should click the PAUSE button on the screen to pause your examination (**timer will continue to run**).

**Technical Issues:** If you need technical assistance i.e. your screen freezes etc., please walk quietly to inform a proctor of your issue.