SURG 200: Emergency Medicine Research I
Fall 2013 (3 credits)

Class meeting times: Tuesdays and Thursdays 4-5:15 PM (Rowell Room 110)
Laboratory Emergency Department time: One 4-hour session per week

Instructors:

Kalev Freeman, M.D., Ph.D.
Department of Surgery
Office: Given Medical Complex Rm E301
Phone: 802-656-4216
Office hours by appointment.
Kalev.Freeman@uvm.edu

Mike O'Keefe MS, NREMT-P
Department of Surgery
Clinical Instructor
Office: Given Bldg Rm D311
Phone: 802-656-3689
Office hours by appointment.
mokeefe @uvm.edu

Abby Wager
Department of Surgery
Laboratory Manager/Clinical Coordinator
Office: Given Medical Complex Rm E301
Phone: (206) 390-7800
Office hours by appointment.
abigail.wager@uvm.edu
Curriculum Overview

This course is for pre-health professional students interested in learning clinical research skills. The class focuses on teaching the foundations of human subjects research, and is combined with a related “clinical research laboratory” experience. The first semester involves students in active projects while it defines research, introduces the ethics of clinical research and considers research design, basic analysis, recruitment, and informed consent process. Integral to the course is the four-hour weekly clinical research lab, working with investigators in the emergency department (ED) as Student Research Associates (SRAs). Students obtain hands-on experience evaluating patients and collecting data in the ED during rotating shifts arranged around individual student schedules.

Course Objectives
Upon completion of the course, the student will:
1. Be part of a research team
2. Gain an introduction to the art of patient care, humanism, and professionalism
3. Understand and practice the principles and regulations involving patient and data confidentiality
4. Participate in the informed consent and recruitment process
5. Contribute to the process of clinical research data collection

Textbook: Designing Clinical Research, by Stephen B. Hulley et al
Lippincott Williams & Wilkins; Third Edition (2007)
Text available at the UVM Bookstore

Clinical Research Laboratory
The lab provides students with a patient-oriented clinical experience by participation in hands-on clinical research in the hospital setting under direct supervision of on-duty attending physicians. Students are trained to serve as Student Research Associates (SRAs) as part of the Emergency Medicine Research Associate Program. As SRAs, students interact with patients and their providers, observing the practice of emergency medicine and learning some of the methodology of clinical research. All of the research projects in the program are aimed at improving patient outcomes. As such, SRAs participate daily in the innovation of emergency medical practice and actively work to improve patient care at FAHC.

Research Meetings
Discussions of all ongoing research studies will be held periodically during class time, and may include principal investigators. The goal of these meetings will be to update everyone on the state of affairs for all on-going projects.

Additional Course Requirements and Material
All required material is available on the Research Associate Program’s UVM Blackboard site or the shared drive (available in the ED). During orientation to the program, SRAs will receive an orientation manual outlining the responsibilities of the Student Research Associate position at Fletcher Allen Health Care. A research manual will also be distributed. Summaries of the research projects, with key references providing background information, are provided for each
of our ongoing clinical studies. The following is a sample of ongoing projects and is subject to change during the course of the semester:

1. Cognitive Behavioral Therapy for Chronic Pain (CBT)
2. Accuracy of Masimo Pronto 7 SpHb® in Emergency Department (PRONTO-7)
3. Activation of Coagulation and Inflammation in Trauma (ACIT) [formerly Coagulopathy in Trauma (COAG)]
4. Evaluation of Masimo Noninvasive Carboxyhemoglobin Testing in ED Patients with Suspected Carbon Monoxide Poisoning (COMET)
5. Does Pre-Hospital Stroke Education Improve Stroke Care Experience? (Stroke Education)

Examinations
Written midterm and final examinations focus on research methods and their relationship to current projects.

Grading
Student performance will be evaluated in three ways:

- 50% Attendance and participation, including quizzes on readings, projects, performance on ED recruitment and screening, and other topics as assigned in class.
- 25% Midterm examination
- 25% Final examination

Attendance is mandatory and missed lectures and emergency department shifts will negatively impact the student’s grade as detailed below.

Lecture Attendance (Rowell 110)
All lectures are mandatory and absences are detrimental to the student’s participation grade. In the case of an absence, the student is required to meet with the instructor and develop a plan to make up the material and missed time. Any student having more than one absence may be considered ineligible for course completion.

For most of the semester, there will be weekly quizzes. Quizzes will typically be announced, but students should always be up-to-date on basic study information, including inclusion and exclusion criteria, purpose and procedures for each study.

Occasionally, because of last minute changes in guest speakers’ schedules, the order of classes may change. Students will receive as much advance notice as possible, both in class and on BlackBoard.

Students are expected to refrain from the use of computers in the classroom. Texting during class is not allowed and cell phones should be silenced.
**Laboratory Attendance (Emergency Department)**

Students are responsible for attending their scheduled shifts as Students Research Associates, or for finding coverage. *There are no excuses ever for absence from a scheduled ED shift.* We consider the Research Associate position to be a critical part of patient care provided by the FAHC Emergency Department, and much like a surgeon or cardiologist, you are expected to be present when needed in the clinical setting. Points will be deducted from the student’s participation score for any absences. In the case of an absence, students are required to contact the instructor and will also be required to make-up the shift. Any student having more than one absence may be considered ineligible for course completion.
UVM Administrative Policies

**Student Learning Accommodations:** If you have a formal accommodation plan developed in conjunction with UVM’s ACCESS Office or would like to discuss the supports that you need in order to learn well in this class, please contact emsresearch@uvm.edu at the beginning of the semester. Adaptations and instructional support are available through consultation with the instructor(s) and the ACCESS Office.

ACCESS Office: [www.uvm.edu/~access/](http://www.uvm.edu/~access/)

UVM’s policy on disability certification and support: [www.uvm.edu/~uvmpg/ppg/student/disability.pdf](http://www.uvm.edu/~uvmpg/ppg/student/disability.pdf)

**Religious Holidays:** Students have the right to practice the religion of their choice. If you need to miss class to observe a religious holiday, please submit the dates of your absence in writing by the end of the second full week of class. You will be permitted to make up work within a mutually agreed-upon time.

**Academic Integrity:** The policy addresses plagiarism, fabrication, collusion, and cheating. [www.uvm.edu/policies/student/acadintegrity.pdf](http://www.uvm.edu/policies/student/acadintegrity.pdf)

**Grade Appeals:** If you would like to contest a grade, please follow the procedures outlined in: [www.uvm.edu/~uvmpg/ppg/student/gradeappeals.pdf](http://www.uvm.edu/~uvmpg/ppg/student/gradeappeals.pdf)

**Grading:** For information on grading and GPA calculation, please go to [www.uvm.edu/academics/catalogue](http://www.uvm.edu/academics/catalogue) and click on Policies for an A-Z listing.

**Code of Student Rights and Responsibilities:** [www.uvm.edu/~uvmpg/ppg/student/studentcode.pdf](http://www.uvm.edu/~uvmpg/ppg/student/studentcode.pdf)

**FERPA Rights of Disclosure:** The purpose of this policy is to communicate the rights of students regarding access to, and privacy of their student educational records as provided for in the Family Education Rights and Privacy Act (FERPA) of 1974. [http://uvm.edu/~uvmpg/ppg/student/ferpa.pdf](http://uvm.edu/~uvmpg/ppg/student/ferpa.pdf)

NOTE: In lieu of a lab the first week, the first class meets from 4:00 p.m. to 7:00 p.m. Pizza will be provided.

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<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Assigned Reading</th>
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<tbody>
<tr>
<td>Tu</td>
<td>8/27/13</td>
<td>Orientation to Projects and Procedures</td>
<td>Orientation Manual</td>
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<tr>
<td>Th</td>
<td>8/29/13</td>
<td>Course Introduction &amp; Emergency Department Tour</td>
<td>Orientation Manual</td>
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<td>Th</td>
<td>9/5/13</td>
<td>Research Ethics I</td>
<td>Text, Chapter 1</td>
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<td>Tu</td>
<td>9/10/13</td>
<td>Research Ethics II/Vulnerable Subjects</td>
<td>Text, Chapter 14</td>
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<td>Th</td>
<td>9/12/13</td>
<td>Trauma Physiology - Head Injury/Concussion</td>
<td>Posted on Blackboard</td>
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<td>Th</td>
<td>9/19/13</td>
<td>Informed Consent Workshop</td>
<td>Research Manual</td>
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<td>Tu</td>
<td>9/24/13</td>
<td>Professionalism</td>
<td>TBA</td>
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<td>Th</td>
<td>9/26/13</td>
<td>Research Update</td>
<td>None</td>
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<td>Tu</td>
<td>10/1/13</td>
<td>The Research Question: FINER Criteria</td>
<td>Text, Chapter 2</td>
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<td>Th</td>
<td>10/3/13</td>
<td>Study Design I: Cohort, Cross-Sectional, Case Control, Observational</td>
<td>Text, Ch 7 (pp 97-100, 103-107), Ch 8, and Ch 9 (not including the appendices in either chapter)</td>
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<td>Tu</td>
<td>10/8/13</td>
<td>Truth, Noise and Bias</td>
<td>Assigned Reading: Text Chapters 4, 5</td>
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<td>10/10/13</td>
<td>Reading an Article Critically; State of EMS Research</td>
<td>Posted on Blackboard</td>
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<td>10/15/13</td>
<td>Midterm Exam</td>
<td>No new reading</td>
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<td>Th</td>
<td>10/17/13</td>
<td>Study Design II: Randomized Controlled Trials, Studies of Medical Tests, Sensitivity, Specificity</td>
<td>Text, Chapter 10 (pp. 147-161), Chapter 12 (pp. 183-186, 188-190, 199-200)</td>
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<td>Tu</td>
<td>10/22/13</td>
<td>Prehospital Care of Chest Pain</td>
<td>Posted on Blackboard</td>
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<td>Th</td>
<td>10/24/13</td>
<td>Statistical Methods I: Power, Sample Size, Clinical vs. Statistical Significance, Confidence Intervals</td>
<td>Text, Chapter 5, Chapter 6 (pp. 76 – 81)</td>
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<td>Tu</td>
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<td>Humanism</td>
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<td>Th</td>
<td>10/31/13</td>
<td>Statistical Methods II: Graphical Presentation of Data, Introduction to ROC Curves</td>
<td>Posted on Blackboard</td>
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<tr>
<td>Tu</td>
<td>11/5/13</td>
<td>Journal Club</td>
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<td>Th</td>
<td>11/7/13</td>
<td>Clinical Topic TBA</td>
<td>None</td>
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<td>Tu</td>
<td>11/12/13</td>
<td>Insulin - Example of Clinical Research</td>
<td>Posted on Blackboard</td>
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<td>Th</td>
<td>11/14/13</td>
<td>Coagulopathy in Trauma</td>
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<td>Tu</td>
<td>11/19/13</td>
<td>Research Update, Part 1</td>
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<td>Th</td>
<td>11/21/13</td>
<td>Research Update, Part 2</td>
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<td><strong>Thanksgiving Recess</strong></td>
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<td>Tu</td>
<td>12/3/13</td>
<td>Applying to School of Medicine or Allied Health</td>
<td>None</td>
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<tr>
<td>Tu</td>
<td>12/10/13</td>
<td><strong>Final Exam</strong></td>
<td>4:30 – 7:15</td>
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