

## 615A MEDICAL SIMULATION

This course is available to UC Irvine 4th year students only

Students must obtain permission from the course coordinator who will obtain faculty approval based on availability prior to enrollment in this course

**Course Description:** This medical simulation experience allows students to gain experience in curriculum development in medical simulation under the guidance of a faculty simulation instructor. Students will observe simulations, perform literature review, develop a unique simulation course, and teach using simulation technology.

**Department:** Office of Medical Education

**Prerequisites:** Successful completion of 1st, 2nd and 3rd year curriculum.

**Restrictions:** Pre-Approval by Keith Beaulieu [kbeaulie@uci.edu](mailto:kbeaulie@uci.edu)

**Elective Director:** Cameron Ricks, MD

**Instructing Faculty:** Cameron Ricks, MD

**Course Website:** [www.medsim.uci.edu](http://www.medsim.uci.edu)

**Who to Report to First Day:** Keith Beaulieu

**Location to Report on First Day:** Medical Education Simulation Center, room 2118, 2nd floor Building 836

**Time to Report on First Day:** 8:30

**Site Coordinator:** Keith Beaulieu [kbeaulie@uci.edu](mailto:kbeaulie@uci.edu)

**Site:** UC Irvine SOM

**Periods Available:** January-December

**Duration:** 4 weeks

**Number of Students:** 1 per month

**Scheduling Coordinator:** UC Irvine students please call (714) 456-8462 to make a scheduling appointment

### Course Objectives:

- The student will be able to gain knowledge on the role of medical simulation technology in graduate medical education as well as undergraduate medical education.
- The student will be able to understand how to develop new educational curricula.
- The student will understand how to teach colleagues using simulation technology.
- The student will gain exposure to research studies and literature in medical simulation.

### Key Topics:

- Medical simulation
- simulation technology
- medical education
- crisis resource management

### Competencies:

- Student as educator
- Curriculum design

**Attitudes and Commitments:** Students will gain an appreciation of the role of simulation in medical education and contribute to the development and enhancement of simulation programs at UC Irvine.

**Educational Activities:** Medical students will have the opportunity to observe and/or participate in all simulation program activities at the UC Irvine Medical Education Simulation Center. Medical students will be involved with creating and developing new simulation curricula or programs. Medical students will work closely with the Director, Associate Director and simulation faculty to integrate simulation into various pre-clinical courses and clinical courses. Medical students will also have the opportunity to teach using simulation technology either in community outreach programs or other activities in the UC Irvine Medical Education Simulation Center.

**What Students Should do to Prepare for the Rotation:** Students will need to read the required articles for the rotation in advance.

**Clinical Responsibilities of the Student:** This is not a clinical rotation

**Patient Care Responsibilities:** This is not a clinical rotation

**Call Schedule of the Student:** None, however students will be expected to teach in occasional evening or weekend simulation programs.

**Procedures to be Learned by the Student:** This is not a clinical rotation

**Percentage of Time Student will Participate in Ambulatory Setting:** This is not a clinical rotation

**Conference/Lecture/Small Group Sessions:**

History of Medical Simulation	Lecture	1 hour
Debriefing	Lecture	1 hour
Educational Theories	Lecture	1 hour
Cognitive Errors	Lecture	1 hour
Contingency Planning	Lecture	1 hour

**Course Hours Summary:**

40	Small Groups (Simulation)
120	Other (Developing curricula)
160	Total

**Required Reading:**

- Croskerry P. The importance of cognitive errors in diagnosis and strategies to minimize them. *Acad Med.* 2003 Aug;78(8):775-80.
- Rudolph JW, Simon R, Rivard P, Dufresne RL, Raemer DB. Debriefing with good judgment: combining rigorous feedback with genuine inquiry. *Anesthesiol Clin.* 2007 Jun;25(2):361-76.
- Gordon JA, Hayden EM, Ahmed RA et al. Early Bedside Care During Preclinical Medical Education: Can Technology-Enhanced Patient Simulation Advance the Flexnerian Ideal? *Academic Medicine* 2010; 85 (2): 370-377.
- McGaghie WC, Issenberg SB, Petrusa ER et al. A critical review of simulation-based medical education research: 2003-2009. *Medical Education* 2010; 44: 50-63.

**Recommended Reading:**

- Blum RH, Raemer DB, Carroll JS, Sunder N, Felstein DM, Cooper JB. Crisis resource management training for an anaesthesia faculty: a new approach to continuing education. *Med Educ.* 2004 Jan;38(1):45-55.
- Bond WF, Deitrick LM, Eberhardt M, Barr GC, Kane BG, WorriLOW CC, Arnold DC. Cognitive versus technical debriefing after simulation training. *Acad Emerg Med.* 2006 Mar;13(3):276-83.
- Eason MP. Simulation devices in cardiothoracic and vascular anesthesia. *Semin Cardiothorac Vasc Anesth.* 2005 Dec;9(4):309-23.
- Epstein RM, Siegel DJ, Silberman J. Self-monitoring in clinical practice: a challenge for medical educators. *J Contin Educ Health Prof.* 2008 Winter;28(1):5-13.
- Epstein RM. Mindful practice. *JAMA.* 1999 Sep 1;282(9):833-9.
- Halamek LP; Association of Medical School Pediatric Department Chairs, Inc. Teaching versus learning and the role of simulation-based training in pediatrics. *J Pediatr.* 2007 Oct;151(4):329-30.
- Lake CL. Simulation in cardiothoracic and vascular anesthesia education: tool or toy? *Semin Cardiothorac Vasc Anesth.* 2005 Dec;9(4):265-73.
- Lockyer J, Gondocz ST, Thivierge RL. Knowledge translation: the role and place of practice reflection. *J Contin Educ Health Prof.* 2004 Winter;24(1):50-6.
- Savoldelli GL, Naik VN, Park J, Joo HS, Chow R, Hamstra SJ. Value of debriefing during simulated crisis management: oral versus video-assisted oral feedback. *Anesthesiology.* 2006 Aug;105(2):279-85.
- Sinz E. Simulation-based education for cardiac, thoracic, and vascular anesthesiology. *Semin Cardiothorac Vasc Anesth.* 2005 Dec;9(4):291-307.
- Steadman RH. The American Society of Anesthesiologists' national endorsement program for simulation centers. *J Crit Care.* 2008 Jun;23(2):203-6.
- Yee B, Naik VN, Joo HS, Savoldelli GL, Chung DY, Houston PL, Karatzoglou BJ, Hamstra SJ. Nontechnical skills in anesthesia crisis management with repeated exposure to simulation-based education. *Anesthesiology.* 2005 Aug;103(2):241-8.
- The American Board of Anesthesiology Maintenance of Certification in Anesthesiology website: <http://www.theaba.org/anesthesiology-maintenance.shtml>
- The American Society of Anesthesiologists simulation education website: <http://www.asahq.org/SIM/homepage.html>
- Gordon JA, Oriol NE, Cooper JB. Bringing good teaching cases "to life": A simulator-based medical education service. *Acad Med* 2004;79:23-27.
- Gordon JA, Brown DF, Armstrong EG. Can a simulated critical care encounter accelerate basic science learning among preclinical medical students? A pilot study. *Simul Healthc* 2006;1:13-17.
- Gordon JA, Wilkerson WM, Shaffer DW, Armstrong EG. "Practicing" medicine without risk: Students' and educators' responses to high-fidelity patient simulation. *Acad Med.* 2001;76:469 - 472.
- Gordon JA, Oriol NE. Perspective: Fostering biomedical literacy among America's youth: How medical simulation reshapes the strategy. *Acad Med.* 2008;83:521-523.

**Official Grading Policy:** The student will receive a grade of Honors, Pass or Fail.

Students will be given a grade of Pass in medical simulation if the following requirements are fulfilled:

1. Observe and assist in teaching at least 40 hours of simulation courses during the month in a variety of specialties (at least 2 resident simulations or high-fidelity team training simulations).
2. Develop a new educational program utilizing simulation technology to contribute to the at UC Irvine School of Medicine curriculum. The course may be a new course involving simulation or may integrate simulation into an existing course in the medical school curriculum. Effort spent in developing and writing the curriculum should involve at least 120 hours of the month, or the remaining hours in the month, assuming 8 hour days.

The student will receive an Honors grade if the following requirements are fulfilled:

1. Prepare a manuscript, scenario or abstract to submit for publication or presentation at a regional or national scientific meeting (e.g. MedEd Portal, Simulation in Healthcare, AAMC, or other simulation or

medical education meetings).

2. Acceptance of the presentation at a scientific meeting is not a requirement for the Honors grade, however, the final project must be finalized and ready for submission in the format required by the specific meeting or journal. The final product must be of publication quality. The faculty mentor will be available to review the student's writing and provide input throughout the rotation as needed to assist the student with accomplishing this project.