



Athens University Medical School Medical Physics Department Simulation Center



We train better doctors!

Prof. Evangelos Georgiou M.D., Ph.D.

Simulation in Medical Education

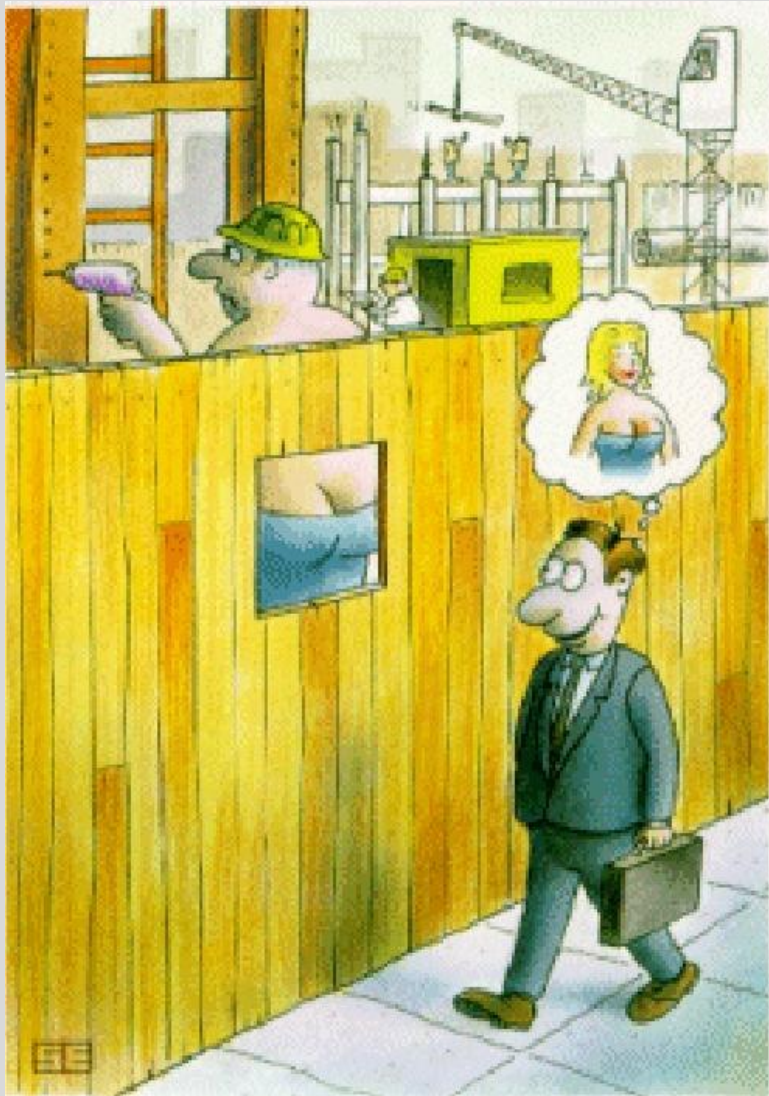


Why ?

Classic model of medical education



..but just observation can lead to erroneous results...



.. A strong portion of science is needed in order to approach the reality...

Technical dexterities...

There are knots
you wish they untie..



..but there are others you
want them firmly tied..



Old model: See one, do one, teach one



New model: See one, **practice many**, do one



Sur mesure...

Location- Infrastructure

- Space: ~200 m² Anatomy Bldg
- Multimedia lab
- Lecture hall
- 5 offices
- Simulation lab



Infrastructure



Lecture hall



Multimedia Lab





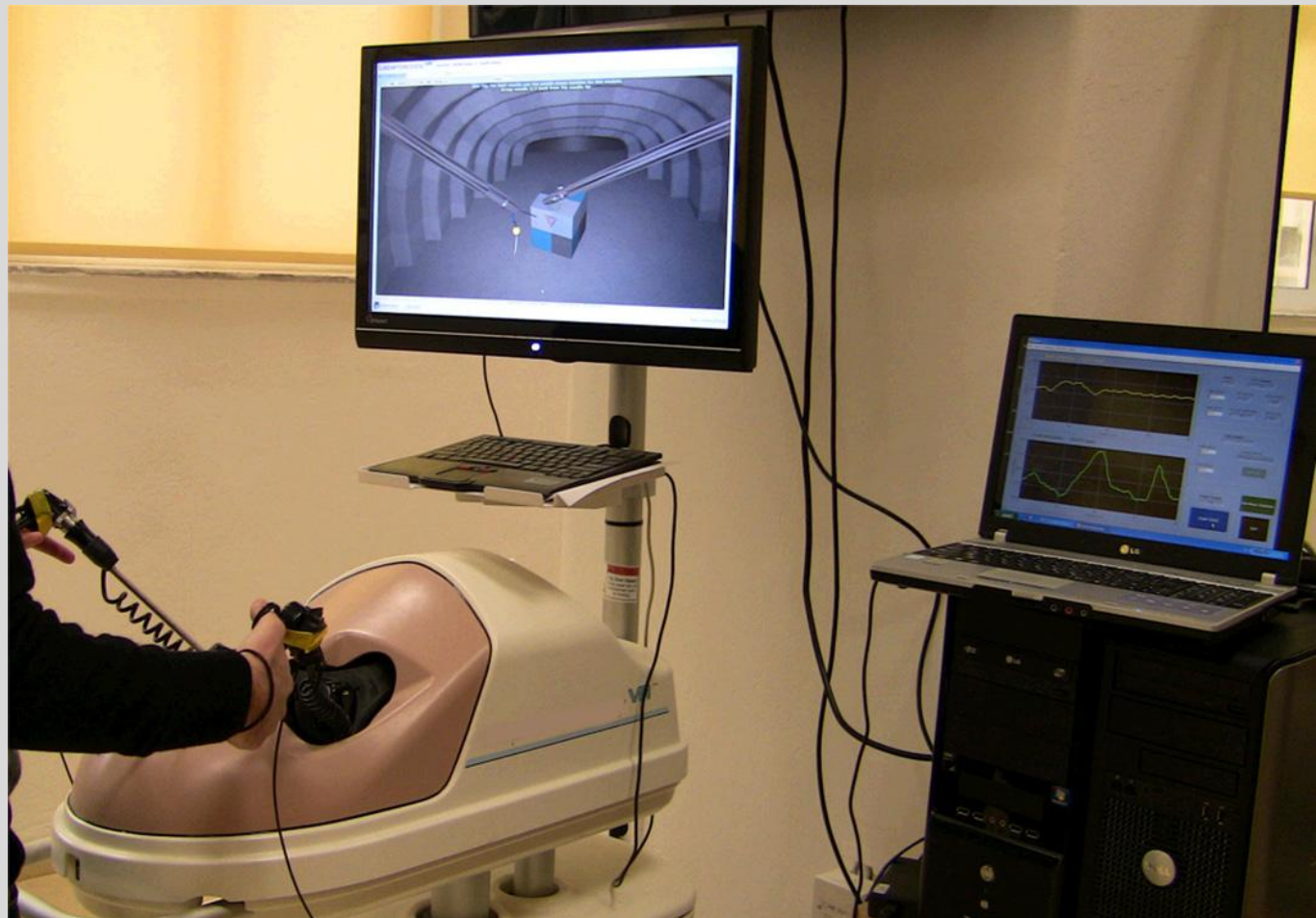
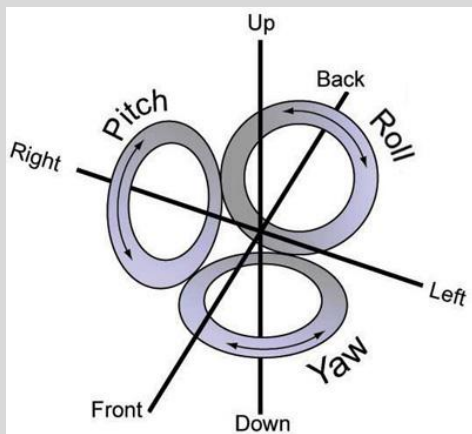




daVinci Robotic System



Hands movement analysis: Inclination Trackers



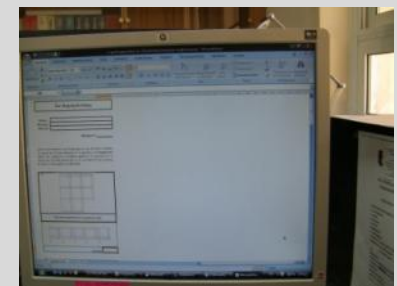
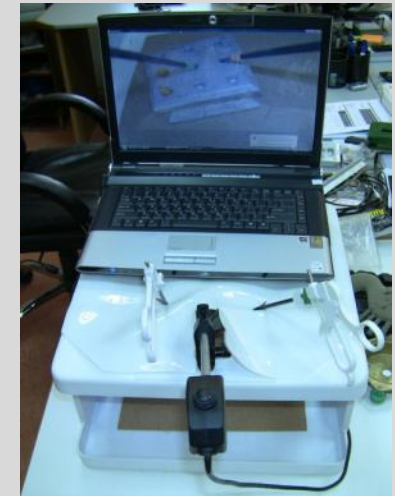
Surgical instruments tip tracking

© MPLSC, Athens University

The screenshot displays a software application for surgical instrument tip tracking. The interface is divided into several sections:

- Control Panel (Left):**
 - Source AV path: `F:\m... 255`
 - Progress bar: 0 to 1600 (17)
 - Buttons: Play, Stop, Pause
 - Tracking?? Off On
 - Save in File?? Off On
 - Group Samples:
 - Learn Grip 1, Load Grip 1, Save Grip 1
 - Learn Grip 2, Load Grip 2, Save Grip 2
 - Learn and Match Parameters:
 - Learn/Match Mode: Start Invariant
 - Learn/Match Feature Mode: Color and Shape
 - Color Similarity: Match as Similarity
 - Sample 1: (Green)
 - Sample 2: (Pink)
 - Both Learned?? (Red)
 - Quit (Red Button)
 - Minimum Score: 70.00
 - Minimum Contrast: 0
 - Color Score Weight: 50.00
 - Search Strategy: Very Aggressive
- Video Feed (Right):** Shows a top-down view of two surgical instruments with green and pink tips on a metallic surface.
- Output Panels (Bottom):** Two empty grids labeled "Left Surgical Instrument Tip" and "Right Surgical Instrument Tip".

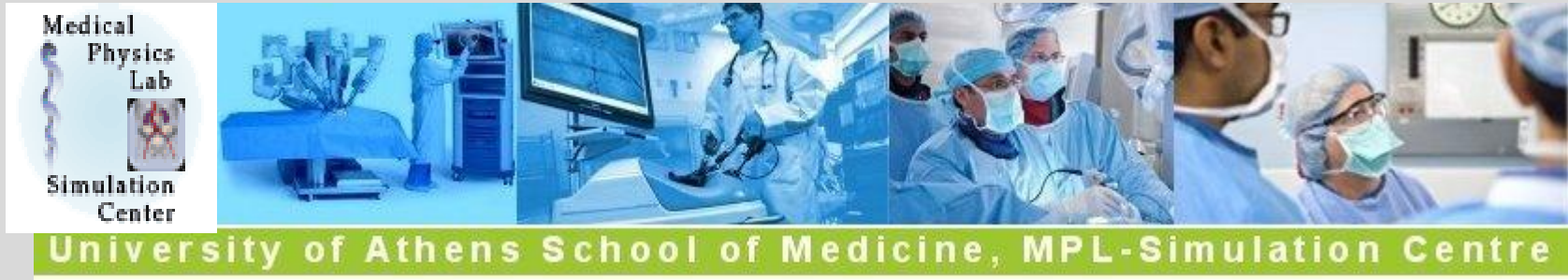
Our OSATS Stations



OSATS: Objective structured assessment of technical skills

MPL-Simulation Center

We train better doctors!



<http://mplsc.med.uoa.gr/>

An American College of Surgeons (ACS) accredited center

<http://www.facs.org/education/accreditationprogram/list.html>

One of the 4 ACS accredited Centers in Europe



AMERICAN COLLEGE OF SURGEONS • DIVISION OF EDUCATION
ACCREDITED EDUCATION INSTITUTES™
ENHANCING PATIENT SAFETY THROUGH SIMULATION

*In fulfillment of the accreditation requirements set forth by the American College of Surgeons
Program for Accreditation of Education Institutes*

***MEDICAL PHYSICS LABORATORY,
MEDICAL SCHOOL, UNIVERSITY OF ATHENS
Athens, Greece***

*is hereby accredited as a Level I, ACS Level 1-Comprehensive Education Institute from
June 24, 2009 through June 29, 2012.*

Ajit K. Sachdeva, MD, FACS, FRCSC
Director, Division of Education

MEMORANDUM OF UNDERSTANDING

Between

Medical Physics Laboratory Simulation Center (MPLSC)
Athens University Medical School, Athens, Greece

And

The Centre of Excellence for Simulation Education and Innovation (CESEI)
University of British Columbia, Vancouver, Canada

To promote academic and research cooperation between the Medical Physics Laboratory Simulation Center (MPLSC) and The Centre of Excellence for Simulation Education and Innovation (CESEI).

1. The partnership will focus on simulation-based education, including curriculum development, exchange of curricula, training of technical personnel in simulation, teacher training, and other academic activities related to education based on simulation.
2. In the Memorandum of Understanding CESEI will support the MPLSC with educational technology and improvements of the technology provided.
3. The MPLSC and CESEI will design and conduct research projects related to simulation, education, and technology.
4. The two institutions will extend invitations to attend meetings of experts and academics and help make arrangements to attend national and international conferences.
5. The credits and logos of both institutions are the intellectual property of institutions, and cannot be used without the expressed written permission of the institution.
6. This Memorandum of Understanding may be amended by mutual written consent and will be in effect from the date of signature for a period of one year. The Memorandum of Understanding will be reviewed and may be extended by mutual agreement. The Memorandum of Understanding may be terminated with six weeks written notice.



Dr. Evangelos Georgiou, Director
Medical Physics Laboratory Simulation Center



Dr. Karim Qayumi, Director
The Centre of Excellence for
Simulation Education and Innovation

October, 7th, 2011

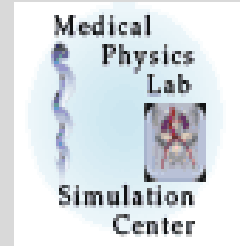
October, 7th, 2011



THE
UNIVERSITY OF
BRITISH
COLUMBIA



Courses offered:



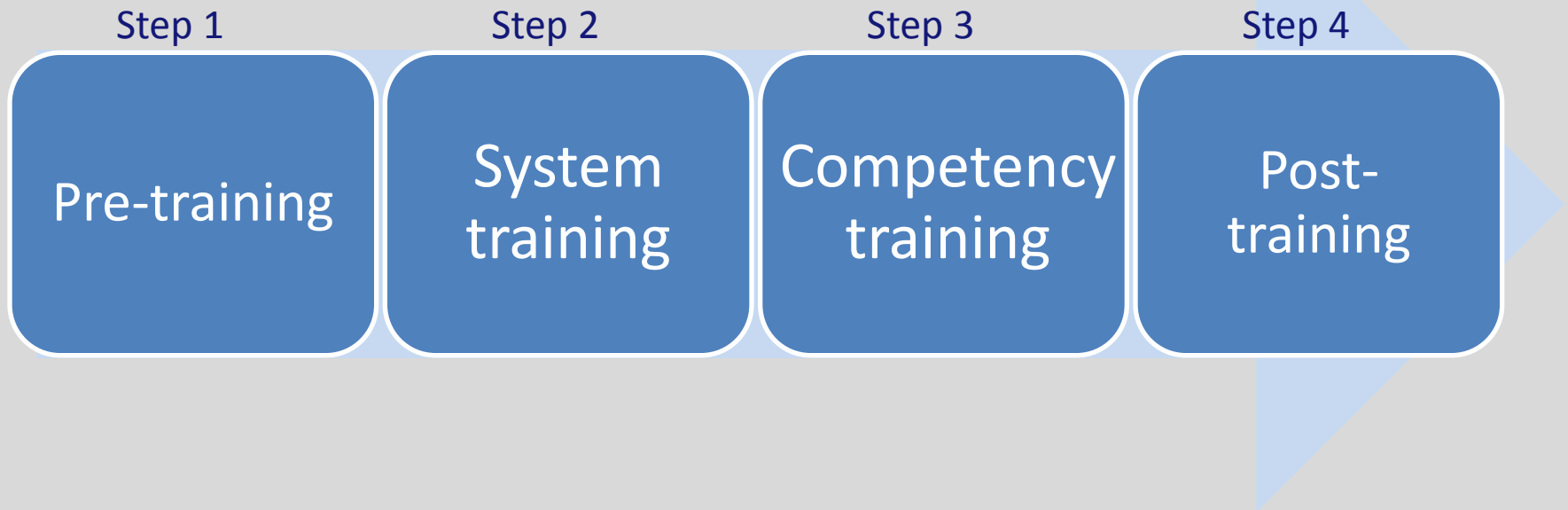
- Vascular Access
- Laparoscopy
- Endoscopy
- Robotic Surgery
- Endovascular (TBA)
- Arthroscopy (TBA)
- e-learning courses

Quality Management System (ISO certification)



Educational programs infrastructure

- 4 educational “ingredients” in common

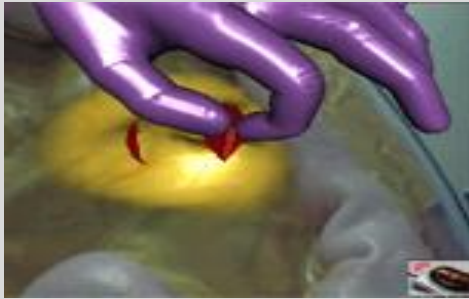


A combination of cognitive & skill dexterities in order to achieve the goals & the objectives of each program

List of Activities Offered in 2011

Name of Course	Date of Course	Number of Hours for the Course	Type of Learners (<u>P</u>hysician, <u>R</u>esident, <u>M</u>ed Student, <u>N</u>urse)	Total Number of Learners	Were Outcomes Measured?
IV catheterization (theory & practical training)	Runs recurrently throughout the acad. year	10	M/N/A	200	Yes
Phlebotomy (theory & practical training)	Runs recurrently throughout the acad. year	10	M/N/A	200	Yes
Basic skills training in Laparoscopic Surgery	Runs recurrently throughout the acad. year	10	R	20	Yes
PG course in minimally invasive surgery & robotic surgery	Both semesters	144/semester	R	20	Yes
Intern'l Workshop in Robotic Surgery for Southeastern Europe	02-05/5/ 2011 23-27 /5/2011 07-10/11/2011	45	P	31	Yes

Our vision for the future



1. Show

- AR/VR reality
- Graphics
- Video Games
- Instructions, Education



2. Practice

- Haptic feed-back
- Real Instruments



3. Measurements

- Objective measurements
- Professional competence indices
- Self validation
- Data base

Incorporation of simulators into teaching & the development of medical procedures' curriculum in our Medical School

<http://mplsc.med.uoa.gr>

