# Center for Immersive and Simulation-based Learning (CISL)

## 2008 - 2009 Accomplishments Report

## CISL Mission

To improve patient safety, patient care, education, and research through innovations in immersive and simulation-based learning techniques and tools and through embedding them throughout Stanford Medical Center's education and training programs.

## Strategic Goals

The CISL continues to focus their activities around the ten strategic goals articulated since its inception in 2004, and revised in 2009 by the CISL Executive Committee:

1. Education and Training of Students and Clinical Trainees
2. Healthcare Systems Improvement
3. Assessment/Testing
4. Research
5. Provide ISL Learning to External Experienced Clinicians
6. Community Outreach
7. Leadership and Advocacy
8. Faculty Development
9. Sustainability
10. Management

**NOTE:** *Provided in this document are highlights of ISL activities throughout the Stanford community for the year 2008 and 2009. The focus is to highlight **NEW** Programs and Activities that occurred. The extent of activities of the CISL faculty and staff are continually expanding; thus this summary may not be inclusive of all activities.*

**Deployed Curricula Using Immersive and Simulation-based Learning by Target Population as of December 2009**

| Pre-Clerkship Med Students | Clerkship Med Students | Interns / Residents/ Fellows | | Combined Team (Housestaff, attendings, RNs, Allied Health) | CME or equivalent | | Nursing and Allied Health |
|---|---|---|---|---|---|---|---|
| Ongoing Courses | | | | | | | |
| Procedures Course - POM Q5 | ANEST 306A Adult Crit Care Sims (STARS) | Anesth Novice Resident Sims | EM CRM1 | IMPES - ICU Combined Team CRM Simulations | NeoSim | CISL CRM Instructor Training | RT student sims (Foothill College) |
| Intro to Mgmt of Ill Pt (IMIP) POM Q6 | Anesth Clkship Sims | ACRM I, II, III | EM CRM2 | Sim DR - Perinatal Combined Team Training | PediSim | CAPE Simulation Instructor | Sedation for Pediatrics |
| SURG 254 Operative analysis and techniques | PICU/NICU/CVICU Critical Care Clkshp | Pedi Sim I, II, III | EM CRM3 | Disclosure of Unanticipated consequences | Pedi ERSim | P.A.S.S. program as part of the Society of Pediatric Anesthesia | Defibrillator and CPR training for nurses |
| Mini-CPX (SP) | Neo Critical Care for NICU subinternship | NeoSim I, II & III | Adv Resus, Eval & Decision-making (SCARED) - Int Med | Mock Drills for Cardiac Arrests | OBSim | | Primary Certification in PALS |
| Suturing Skills | Compassionate Deliv of Bad News for Gen Ped Clkshp | Pedi ER Sim I, II, III | SCARED - Surgery | Mock Drills for medical emergency team | Sim DR - Perinatal Team Training | | Versant Nursing Program at LPCH |
| Anesthesia SIG | SURG 313 Emergency Sims | Sims for Card Surg fellows | SOS Int Med | Trauma Combined Team Training | ECMO Sim | | LifeFlight Skills and Simulation |
| | SURG 228 Intro to Vascular Disease and Rx | OB Sim I; SimDR I | Perinatal Counseling | OB - BLS (NEW) | Critical Care Transport | | |
| | Surgical Skills and SCRIPTS | Cardiac Surgery CRM (NEW) | Compass. Deliv. of Bad News | Management of emergencies in Radiology (in situ) | ACRM | | |
| | SURG 300A - Trauma Surgical Sims | Int Med Invasive (CVC) procedures | | Pedi Anesth Sims (in situ) | | | |
| | | ECMO Sim | Laprascopic Surgery Training for OB/GYN | SHC Recognition of Critical Events (in situ) | | | |
| | | Surgery Intern Boot Camp | Surgical Core Curriculum | Labor & Delivery (in situ) Sim Drills | | | |
| | | Surgical Safety Sims | | Pedi CVICU (in situ) Sim Drills | | | |

## From the Associate Dean for Immersive and Simulation-based Learning (ISL):

The academic year 2008-2009 was a successful one for the Center for Immersive and Simulation-based Learning (CISL) despite the vagaries of the world economy. This report provides details of the many projects and developments that increasingly make immersive and simulation-based learning a regular and crucial part of the Stanford School of Medicine and its affiliated hospitals. Our faculty, clinicians, researchers, and staff continue to be innovators of ISL and to play major roles in the national and international adoption of ISL techniques and applications to improve quality and patient safety.

While the report provides the details, let me summarize some of the big picture trends on a national and international basis. Simulation in healthcare is growing rapidly, based on foundations that in many cases were pioneered here at Stanford and its affiliates. Not only is simulation a part of academic training in medicine, nursing, and allied health, it is also becoming embedded into national initiatives in large hospital systems. In addition to continued development of technology and pedagogy, a key focus going forward is on creating the organizational infrastructures to sustain continued development of ISL techniques and technologies. Stanford is on the threshold of a new era in simulation with the impending activation of the Immersive Learning Center (ILC) in the Li Ka Shing Center for Learning and Knowledge (LKSC). To make the most of the opportunities afforded by the new facilities Stanford School of Medicine and its affiliates will be developing new practices and structures for the use of ISL.

After many years of planning, design, and oversight of construction, the ILC is rapidly approaching the transition from an idea to a place. We expect to have temporary occupancy of the building early in 2010, commencing a busy period of installation and testing of the extensive set of technology and equipment earmarked for the building. We will be hiring a permanent staff for the ILC; they must learn how to operate fully and support all the building technologies and the simulation devices we will install. We are particularly grateful for the generosity of Mr. Li Ka Shing, the naming donor of the LKSC, and of Joseph and Hon-Mai Goodman, the primary donors for the ILC (Immersive Learning Center) floor for providing the opportunity to create this world-class integrated center where all modalities of immersive and simulation-based learning can exist in one spot.

While organizational challenges remain, we have already achieved important milestones. CISL or its components have earned accreditation or endorsement status from the American College of Surgeons and the American Society of Anesthesiologists. A CISL component has been designated as one of two regional simulation centers in the nation for the American College of Obstetrics and Gynecology. Stanford is widely acknowledged as the founding home of many types of simulation in healthcare.

We continue to work with many others around the world of like mind and vision. Our goal is, as ever, to improve the efficiency, quality, and safety of care for all patients, while simultaneously improving the education, training, and assessment of the caregivers. This is a noble goal and we are pleased to once again present an update on our progress as pioneers of this effort.

David M. Gaba, MD
Associate Dean,
Immersive and Simulation-based Learning
gaba@stanford.edu

*This document is designed to highlight the new activities of the Center for Immersive and Simulation-based Learning (CISL) under the purview of the office of Associate Dean for ISL, for the time period of August 2008- September 2009. For the most part, previous activities continue and to a large extent have become regular components of teaching, learning, and research at Stanford School of Medicine and its affiliates.*

# CISL Strategic Goals

1. Education and Training of Students and Clinical Trainees

   Immersive and Simulation-based Learning (ISL) is used to improve the education and training of Stanford students (undergraduate, medical and graduate) and the Medical Center's trainees (residents, clinical fellows and postdoctoral scholars).

2. Healthcare Systems Improvement

   To improve care delivery and operational outcomes of Stanford Hospital and Clinics, Lucile Packard Children's Hospital, VA Palo Alto, (and in conjunction with the SHC/LPCH Insurance Company (SUMIT)), by improving the individual and teamwork skills of healthcare personnel.

3. Assessment/Testing

   To use ISL techniques for explicit assessment/testing of skills, knowledge, and performance of students, trainees, and experienced personnel (as distinct from assessments that are embedded in sessions conducted for "training").

4. Research

   To promote, support and conduct fundamental research and evaluation about ISL and to use the ISL techniques as a research tool.

5. Provide ISL Learning to External Experienced Clinicians

   Through ISL, improve the clinical skills (both "technical" and "non-technical") of healthcare personnel as individuals and in teams.

6. Community Outreach

   To develop and conduct outreach programs to expose local community and lay groups, as well as public safety and public health organizations, and healthcare providers to the benefits and potential of ISL.

7. Leadership and Advocacy

   To provide leadership in advocating the future vision of immersive and simulation-based learning in health care for the nation and the world.

8. Faculty Development

   To recruit, train and sustain faculty to become effective ISL educators.

9. Sustainability

   To provide financial and program planning and analysis of ISL programs, and to support the Office of the Medical Director fundraising and ensure long-term financial viability of ISL activities.

10. Management

    To create management infrastructures and procedures that effectively coordinates and integrates the Center's priorities, activities and resources among its constituent units and


## Strategic Goal 1: Education and Training of Students and Clinical Trainees

Immersive and Simulation-based Learning (ISL) activities continue to expand at Stanford. The goal is to provide learners the opportunity to obtain, in a safe environment, the cognitive, technical and behavioral skills necessary for learning. Since the Center's inception in 2004, many programs have become fully embedded and some are still in the development phase. Below is a selected list of deployed and newly deployed activities.

*"We had a terrific 3-hour trauma simulation class as part of our General Surgery Clerkship. We simulated a tension pneumothorax, a neck trauma, and a pelvic trauma from a motor vehicle accident. Each case was very realistically simulated, and provided invaluable practice for us. We feel infinitely more comfortable starting to manage trauma injuries in real life after having mastered some of the main algorithms and challenges involved in common traumas."*

***3rd year medical student***

## Anesthesia and Critical Care

**ACRM: Anesthesia Crisis Resource Management I, II & III** - For anesthesia residents, ACRM is now entering its 20th year of activity! This course is under the direction of Drs. David Gaba and Steve Howard.

**ANEST 306N and ANES 306P: Critical Care Clerkship** - Under the direction of Dr. Sarah Kache, medical students at Stanford receive an immersive learning experience in pediatric and neonatal medicine while rotating on ANES 306.

**STARS (Simulation Training for Acute Resuscitation Skills) and BLAST** - Two popular simulation courses focusing on critical care. These courses are under the direction of Drs. Geoff Lighthall and Kyle Harrison and a variety of participating faculty from anesthesia and critical care.

**(NEW) Pilot Program for Cardiovascular Physiology** - Drs. Harrison and Goldhaber-Fiebert piloted a cardiovascular simulation experience for preclinical medical students taking the cardiovascular physiology course.

**Emergency Medicine** - Simulations across the life continuum are provided for medical students and residents. Courses offered are listed below:

- Introduction to the Management of the Ill Patient (IMIP) under the direction of Drs. Phil Harter and Rebecca Smith-Coggins and through the Practice of Medicine (POM) course.
- SURG 313A – Mannequin-based emergency room simulation for medical students, developed by Dr. Greg Gilbert.
- Pediatric ED Sim program held at CAPE Simulation Center - Emphasize emergency management of pediatric patients, developed by Dr. Bernard Danneberg.

*OB Life Support (OBLS)*

*In this program the staff take the HeartCode BLS and ACLS content on line then come to CAPE for skills review. We include OB specific tips for the skills review then run two scenarios (mega-codes) with OB patients that require delivery in five minutes of arrest. Both scenarios are followed by debriefing…*

*"Information was directly related to OB vs ACLS …in our own environment with colleagues we actually work with."*

***Participant***

**Neonatal/Perinatal Medicine** - All fellows in Neonatal-Perinatal Medicine receive a comprehensive annual immersive learning experience in three areas:

- ECMO Sim (management of extracorporeal membrane oxygenation emergencies)
- NeoSim (newborn resuscitation)
- Perinatal Counseling (counseling of the pregnant woman with a complicated pregnancy and/or anomalous fetus)

This suite of experiences is setting a new national standard for training neonatologists.

**Maternal-Fetal Medicine Fellows** - Starting in 2009, fellows in Maternal-Fetal Medicine are invited to attend Perinatal Counseling simulations with the Neonatal-Perinatal fellows.

**PEDS 313A: Neonatal Intensive Care Unit Sub-internship** - Medical students selecting Neonatal Intensive Care Unit sub-internship participated in a full-day NeoSim program at CAPE emphasizing resuscitation and intensive care of the newborn.

**Pediatric Housestaff** - All residents in General Pediatrics take part in a combined three-day NeoSim (Neonatal Resuscitation Program or NRP) and Pediatric Advanced Life Support (PALS) program prior to beginning their residency at Lucile Packard Children's Hospital (LPCH). All residents return to PALS and NeoSim in their third year of residency to renew card status with the AHA and AAP.

## Surgery

**Cardiac & Thoracic Surgery** - James Fann, M.D. continues to provide training in cardiac and thoracic surgery for CT surgery residents at the CT Surgery Sim Center at VAPAHCS. The focus of this simulation learning is on coronary artery anastomosis and valve surgery. There is also ongoing work with the mannequin-based Simulation Center at VAPAHCS conducting combined team cardiac surgery simulations – a pilot program designed for cardiac surgery team training simulates a problematic cardiac cath lab case needing emergency cardiac surgery that involves cardiac anesthesia, cardiac nursing, perfusionist, and the cardiac surgeons.

The center has been supported by the Doty Award from the Western Thoracic Surgical Association and a Simulation Grant from the Thoracic Surgery Foundation for Research and Education.

**General Surgery Intern & Lab Resident Boot Camp** - In its third year, this successful boot camp teaches surgical skills that the interns will need as they continue their education in surgery. The boot camp is the precursor to Surgical Core Curriculum, which follow the ACS curriculum guidelines.

**(NEW) S-C-R-I-P-T-S (Student-Chief Resident Instruction, Participation and Teaching in Simulation)** - This *NEW* program developed by Dr. Ralph Greco, is designed to create a special learning between a clinical clerk and a chief resident. One hour a week the surgery chief and the clerk from the Gold, White and Red surgery teams at Stanford work together in the Goodman Center to recreate and teach the basic elements of a surgical procedure chosen specifically for that student by the chief resident.

**SURG 254** - Drs. James Fann and Peter Johannet (Plastic Surgery) direct the Operative Anatomy and Techniques for 2nd year preclinical students interested in learning the surgeons approach to anatomy. The course provides an opportunity for students to understand the goals of a given surgical procedure (translating pathophysiology to surgical decision making to actual incision). In the anatomy laboratory and using wet-lab simulation, the students learn surgical skills and perform the dissection of a number of commonly performed operations. Taught by faculty in Cardiothoracic Surgery, Vascular Surgery, and Orthopedic Surgery, the course emphasizes direct hands on participation.

**SURG 300A** - Surgical Trauma for surgical clerkship. The surgical education fellows run these sessions several times per month.

## Nursing

**Life Flight** - Twice a year, the nurses who are part of Stanford Hospital's Life Flight helicopter rescue team practice in the Goodman Simulation Center for a variety of simulation activities. See an article about this activity at the website: **Stanford's Life Flight helicopter rescue team readies to expect the unexpected:** http://med.stanford.edu/ism/2009/july/life-flight-0715.html

**Lucile Packard Children's Hospital (LPCH)** - LPCH General Nursing Orientation began a new program in 2009 for experienced nurses going through orientation. These nurses have the opportunity to simulate "a day in the life of a nurse at LPCH".

## Standardized Patient Program (SPP)

**Standardized Patient Program** - Standardized patient actors are used in a variety of training activities from POM courses to "delivering bad news" scenarios in both adult and pediatric environments. Medical Students experience the following SP activities:

- CPX (Clinical Performance Exam)
- Mini-CPX
- CPX- R (all described in the CISL 2008 Accomplishments report at http://cisl.stanford.edu/organization/accomplishments.html

## Education Technology

**Virtual Microscopy** - Based on recommendations from a joint Educational Technology (EdTech) and faculty committee, EdTech began supporting virtual microscopy (web-viewable "virtual slides") in the preclinical curriculum using Aperio Image Scope software. Additionally, there was collaboration with UC Davis, UCSF, and UC San Diego for sharing virtual slide resources.

## Strategic Goal 2: Healthcare Systems Improvement

**Critical Events Drill at SHC** - Dr. Geoff Lighthall, in collaboration with Stanford's Risk Management Department, under the direction of Jeff Driver, completed work, which began in 2007 on the Critical Events Simulation Scenario Project for Observation-Oriented Learning (CEP). Recommendations for improving systems at Stanford Hospital were sent to Risk Management and the SUMIT Group.

**(NEW) The Pediatric Anesthesia Department** - Lucile Packard Children's Hospital has expanded their in-situ drills; with a particular emphasis on workflow issues for the entire Operating Room team as they moved into their new OR spaces in late 2008. This program is under the direction of Drs. Anita

Honkanen and Michael Chen.

**Committee for the Utilization of Simulation at Packard (CUSP)** - An established committee formed in FY07 to guide and support the use of simulation at LPCH. CUSP's pilot project in the LPCH Labor & Delivery is now an on-going program that has served as a template for other patient care areas and programs. In the upcoming year the L&D drills will include team leaders from the Neonatal Intensive Care Unit to expand the multidisciplinary focus of the in-house simulations. Slated to convert to a simulation based training format in the upcoming year are Maternity, Hematology/ Oncology and the Pediatric ICU.

**(NEW) The Cardiovascular Intensive Care Unit Simulation Program at LPCH** - The CVICU Simulation Program provides high-fidelity team training on the management of crisis events under the leadership of Dr. Andrew Shin, Lori Bizell, RN, and Winnie Yung, RN, CNS (Division of Pediatric Cardiology, Lucile Packard Children's Hospital). Participants are multidisciplinary and include the core team of nurses, respiratory therapists, nurse practitioners, cardiology fellows, hospitalists, critical care fellows and attendings within the CVICU at LPCH. The curriculum involves a team approach to managing crisis events unique to a pediatric CVICU focusing on the physiologies of the single-ventricle and post-operative patients in addition to adults with congenital heart disease and patients in need of emergent bedside sternotomy and ECMO cannulation. The course emphasizes hands-on exercises.

**(NEW) Redwood City Surgery Center** - Drs. Harrison and Fanning used in situ simulation as a systems probe at the new Stanford outpatient surgery center in Redwood City prior to the opening of the center.

**(NEW) Emergency Medicine Combined Team Training for the VA Palo Alto Health Care System Emergency Department** was created by Drs. Stephen Scherr & Geoffrey Lighthall to teach Emergency Medicine doctors and nurses to work collectively to manage challenging situations.

## Strategic Goal 3: Simulation for Performance Assessment

**(NEW) Collaborative Healthcare Immersive Learning Dynamic (CHILD) Program** has trained over 150 multidisciplinary LPCH pediatric staff at CAPE this year. Cassandra Bergero, CNS, Linda Hargreaves, CNS and Amy Nichols, EdD developed CHILD as an alternative to unit-based skills fairs as a means to validate annual competencies, which is required by regulatory agencies. CHILD presents two scenarios in each session and includes deteriorating pediatric patients who require immediate intervention with one progressing to a code. Acute care RNs, PICU RNs, PICU fellows; Pharmacists, Residents and Respiratory Care Providers participate in the sessions. Guided debriefing emphasizes the teaching points. SBAR (Situation, Background, Assessment and Recommendation) was taught and utilized as the communication standard and reinforced throughout the debriefings. Observation data on the acute care units show that when compared to the didactic control group, the CHILD trained RNs verbalize the situation first, give less background information, increase assessment information and make recommendations more frequently when reporting to the physician or charge nurse.

*"Faculty member Dr. Patricia Cross taught parts of cell histology to first-year medical students using the prototype DisplayWall."*

**Endovascular Surgery** - A major aim of Dr. Jason Lee's work is to determine if a simulation-based endovascular surgery curriculum will improve trainee performance measured by technical skill, didactic knowledge, and learner satisfaction. He will assess in this project endovascular simulation as a tool to promote procedural efficiency in the endovascular suite and reduce procedural errors. Finally, he will create a Vascular Surgery Registry at Stanford to determine if the implementation of a structured educational program translates into improved patient outcomes and patient safety. To accomplish these aims a multi-center national trial of surgical resident randomization of their educational curriculum will be organized through Stanford, with collaboration with experts in the School of Education, and mentors in multiple disciplines expert at simulation-based assessment. Dr. Lee hopes that this project will lead to development of a nationally adopted endovascular curriculum and assessment tool to determine fundamentals of endovascular surgery.

## Strategic Goal 4: Research

CISL members collectively participate in research activities that relate to immersive learning. Additionally CISL funds several mini-grants annually to increase the use of ISL throughout the Stanford community. This year the focus was on medical student training. The following mini-grants were awarded:

| Title | Faculty | Target Audience |
|---|---|---|
| Preparing Medical Students for the Hospitalized Patient | D. Johnson, MD,<br>L. Osterberg, MD,<br>P. Rudd, MD,<br>I. Tong, MD | 2nd Year Medical Students |
| Bedside Enhanced Auscultation Teaching (BEAT) | D. Johnson, MD,<br>L. Osterberg, MD,<br>P. Rudd, MD,<br>I. Tong, MD | 2nd Year Medical Students |
| Bedside Enhanced Auscultation Teaching – 1 (BEAT 1) | I. Tong, MD,<br>P. Basaviah, MD,<br>A. Nevins, MD,<br>E. Schillinger, MD | 1st Year Medical Students |
| CPR Training using the traditional "See one, do one, teach one" in a model of group learning | J. Peirog, DO,<br>G. Gilbert, MD | Anyone performing CPR (clinicians in all phases) |
| A Novel Instructional Model to Prepare Pre-Clerkship Medical Students to Perform Peripheral Joint Soft-tissue Injection and Aspiration | S. Campea, MD,<br>M. Fredericson, MD | Preclinical Medical Students |

## Other Research Highlights

CISL (Dr. David Gaba, Principal Investigator) completed data collection on its AHRQ-funded research project "Preparing Rural and Urban Hospitals to Improve Safety Culture Through Simulation." While funding for the project has ceased the investigators continue to analyze the data and write manuscripts.

Dr. Anand Rajani (Neonatal Fellow, CAPE Fellow) was the recipient of a grant from the NRP Young Investigator Award. Dr. Rajani will be studying different methods of venous access in the newborn.

Drs. Kay Daniels, Steve Lipman, Lou Halamek, Maurice Druzin and Julie Arafeh, RN, MSN (Obstetric Simulation Specialist at CAPE), Katherine Helder, RN and Ann Marie Oakeson, RN, MSN, were awarded an Innovations in Patient Care grant to begin a new program for obstetrical providers called OB Life Support (OBLS).

Dr. Ritu Chitkara has decided to designate CAPE as her area of research interest as she starts her fellowship in Neonatal-Perinatal Medicine. Dr. Chitkara plans to research aspects of neonatal assessment in the delivery room.

Surgical Education Fellows, Drs. Richard Parent and Eliza Long used surgical simulation as a nexus for their research activities. Highlights of their papers and presentations in conjunction with their colleagues are listed below:

Parent R, Morton J, Davidson H, Grewal D, Taylor D, Purtill M, Broussard T, Mohr C, Reyes R, Feaster S, Krummel T, Dutta S.
A pilot study of simulation versus lecture for training surgical residents in peri-operative patient safety.
2009 Surgical Education Week, ASE-APDS. Salt Lake City, UT

Long E, Balise R, Correll S, Mohr C, Parent R, Dutta S.
Gender differences in confidence levels of general surgery residents.
2009 Surgical Education Week, ASE-APDS. Salt Lake City, UT

Raghavan S, Teshome M, Qiu M, Parent R, Long E, Song T, Haukoos J, Lee J
Reliability of grading utilizing a structured global assessment scale for the evaluation of performance on an endovascular simulator: Does experience matter?
2009 International Meeting for Simulation in Healthcare. Orlando, FL

Qiu M, Teshome M, Peterson D, Raghavanv S, Tedesco MM, Rarent R, Song TK, Lee JT
Endovascular simulation as a tool to improve medical student performance and interest level in vascular surgery.
2009 International Meeting for Simulation in Healthcare. Orlando, FL

Parent R, Purtill M, Curet M, Mohr C, Krummel T, Dutta S
Initial experience with a simulation-based surgical skills "boot camp" for interns.
Royal College of Physicians & Surgeons of Canada. Ottawa, ON, Canada - 2009

Parent R, Morton J, Davidson H, Grewal D, Taylor D, Purtill M, Broussard T, Mohr C, Reyes R, Feaster S, Krummel T, Dutta S
A pilot study of simulation versus lecture for training surgical residents in peri-operative patient safety. 2009 Surgical Education Week, ASE-APDS. Salt Lake City, UT

Long E, Balise R, Correll S, Mohr C, Parent R, Dutta S
Gender differences in confidence levels of general surgery residents.
2009 Surgical Education Week, ASE-APDS. Salt Lake City, UT

Parent R, Long E, Zimmer D, Teshome M, Ly D, Mohr C, Hernandex-Boussard T, Curet M, Dutta S
Early and intermediate effects of a surgical skills "boot camp" on an objective structured assessment of technical skills: A randomized controlled study.
4th Annual Academic Surgical Congress, AAS-SUS. Fort Myers, FL

Tedesco MM, Peterson D, Song TK, Parent R, Qiu M, Lee JT
Simulation based training improves medical student performance on an endovascular simulator. American College of Surgeons 94th Annual Clinical Congress. San Francisco, CA

## Strategic Goal 5: Provide ISL Learning to External Populations

**CME Accredited Courses** -
The Stanford Office of CME is applying for several grants that would enable a significant thrust on implementing ISL-based CME curricula.

**Experienced Clinicians** - CISL members participate as keynote speakers, seminar leaders, panelist, etc. in national and international conferences and courses. Stanford is well recognized for its leadership in simulation throughout the world.

**Instructor Course** - CISL teams continue to offer instructor courses for external clinicians wishing to improve their skills in developing, delivering and debriefing simulation scenarios across the patient age and illness continuum. The CISL CRM Instructor Course has been accredited for CME.

**CISL Website** - The CISL website (http://cisl.stanford.edu) is a wealth of information for both internal and external viewers. The website in FY09 had close to 3,000 visits and has been viewed by 118 countries since 2008. Additionally, it is the linkage to simulation activities and centers at Stanford.

## Strategic Goal 6: Community Outreach

CISL members regularly participate in community outreach programs. Presentations and tours for K-12 students as well as college students interested in careers in medicine provide these young people with an opportunity for "hands-on medicine". Additionally, the semi-annual Packard 101 and the newly created SHC Community Fellows program highlight simulation as part of the day-long tour. The Stanford

Medical Alumni also visited both The Goodman Simulation Center and CAPE for a simulation demonstration. This is always a highlight of this group.

The American Academy of Pediatrics visited CAPE twice in 2009 to film the Instructor Training DVD and the DVD to accompany the 2010 NRP Manual. CAPE also supports teleconference activities between LPCH physicians and the local, regional, national and international communities through the Mid-Coastal California Perinatal Outreach Program (MCCPOP) International Perinatal Teleconference with eight hospitals in Hong Kong.

## Strategic Goal 7: Leadership & Advocacy

**Endorsements** - The OB Sim Team, under the direction of Drs. Kay Daniels and Steve Lipman were chosen from a national pool of academic centers to be the West Coast Simulation Center for the American College of Obstetrics and Gynecology (ACOG). Only 9 centers were selected across the country. This will help shape the face of obstetrical training nationwide.

CISL has been recognized by the American Society of Anesthesia (ASA) as an Endorsed Simulation Program from 2008-2010.

The Goodman Simulation Center is a LEVEL I ACS accredited Education Institute.

The VAPA team collaborated with the VA National Center for Patient Safety to train and help establish a program for in situ simulations around the country as a follow up to the NCPS team-training program.

*Congresswoman Jackie Speier visited the Goodman Simulation Center and tried her hand at Laprascopic "simulated" surgery.*

## Extramural Activities

Dr. David Gaba, Associate Dean for Immersive and Simulation-based Learning continues his work as Editor-in-Chief of the only indexed peer-reviewed journal in simulation – *SIMULATION IN HEALTHCARE*. Dr. Gaba continues to be a popular and sought after speaker world-wide on safety and simulation. Dr. Gaba continues to serve as a member of the Board of Directors of the Society for Simulation in Healthcare (SSH) and is the Treasurer of the Advanced Initiatives in Medical Simulation (AIMS).

Dr. James Fann has assisted in the organization of the small and large vessel anastomosis session for the TSDA Boot Camp in 2008 and 2009 for approximately one-third of the first-year cardiothoracic surgery residents in the United States.

Dr. Lou Halamek continues to serve as co-chairman of the Neonatal Resuscitation Program Steering Committee of the American Academy of Pediatrics. He is also a member of the Neonatal Delegation to the International Liaison Committee on Resuscitation Consequences Industries Organization was established to promote exchange of ideas and effective practices in industries where the risk to human life is high. Dr. Halamek is a member of the Executive Committee.

Julie Arafeh RN, MSN, is a member of the Editorial Board for the *Journal of Perinatal and Neonatal Nursing* and was nominated as Drills and Simulation Expert for the CMQCC Hemorrhage Education and Learning Program Collaborative.

Sandra Feaster, RN, MS, MBA Program Director for CISL and the Goodman Simulation Center has continued her work with the Public Affairs and Government Relations Committee (PAGR) for the SSH (www.ssih.org) and AIMS (www.aims.org). This work has included hosting Congresswoman Jackie Speier at Stanford leading to endorsement of the simulation bill HR 855 and working with Stanford's legislative advocates to help create the awareness of simulation on Capitol Hill.

Dr. Gaba and Ms. Feaster have hosted a number of legislative and executive branch VIPs and/or their staff, including:

- Eric Shinseki, Secretary, Department of Veterans Affairs
- Staff of Senator Barbara Boxer, California
- Staff of Representative Anna Eshoo, California
- Representative (and Staff of) Jackie Speier, California
- Staff of Representative Mike Honda, California

The Simulation Center at VA Palo Alto HCS has been a major advisor to the VA's National Simulation Planning Group that is preparing to implement a national simulation program in VA. VAPHCS and CISL have hosted two site visits from representatives of the Planning Group. VAPAHCS and CISL are planning to play a major role in this new program as it evolves.

## Strategic Goal 8: Faculty Development

Dr. Jason Lee assumed the role of Associate Program Director for the ACGME accredited Vascular Fellowship/Integrated Residency Training Program and Principal Investigator on multiple clinical trials examining new therapeutic strategies for management of cerebrovascular disease, claudication and limb salvage, renovascular hypertension, and aortic aneurysm disease. Dr. Lee has become particularly interested in innovative methods of teaching endovascular skills via the use of high-fidelity simulation in the treatment of these complex clinical problems. He has been recognized locally and nationally for his contributions to surgical education and simulation.

CISL continues to host an annual symposium, now in its third year, detailing the interesting projects underway by CISL faculty and affiliates.

## Awards and Grants

Drs. Kay Daniels and Steve Lipman received the Henry J Kaiser Foundation Award for Innovation in Medical Education.

Dr. Jason Lee was awarded a Robert Wood Johnson Faculty Scholars Grant, for which Dr. Gaba is the official Mentor.

**Faculty Publications** (NOTE: This is not an exhaustive list, but examples of recent work)


Cooper JB, Blum RH, Carroll JS, Dershwitz M, Feinstein DM, **Gaba DM**, Morey JC, Singla. Differences in safety climate among hospital anesthesia departments and the effect of a realistic simulation-based training program. AK. Anesth Analg. 2008; 106: 574-84.

**Fann, J**, Caffarelli A, Georgette G, **Howard S**, **Gaba DM**, Youngblood P, Mitchell R. Burdon T. Improvement in coronary anastomosis with cardiac surgery simulation. J Thor Cardiovasc Surg, 2008; 136:1486-1491.

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## Strategic Goal 9: Sustainability of Finances of Simulation

This current fiscal year has been faced with financial challenges. Many programs were required to tighten their budget and in some cases eliminate positions. The situation has forced us to think differently about innovation and offering education in unique and cost-effective ways. The Education Technology team has explored various ways of assessing and adapting existing and emerging technologies.

On the other hand, we are excited by the prospect of occupying our new Immersive Learning Center in the Li Ka Shing Center for Learning and Knowledge. Despite the challenging economy, the opening of the new building brings with it appropriate additional resources and a new operating model of simulation as a core resource of the School of Medicine.

## Strategic Goal 10: Management

As the Li Ka Shing Center for Learning and Knowledge (http://lksc.stanford.edu) rapidly takes shape, EdTech along with CISL formed a unit called SET (Simulation and Education Technology) to address staffing, and operations for opening and running the LKSC. This team, along with others from the CISL family, has worked on classroom design and technology, simulation and standardized patient activities as well as skill needs. The team has also focused on future opportunities for using virtual worlds for education, training and assessment.

## CISL Executive Committee

David Gaba, MD
Associate Dean, ISL
gaba@stanford.edu

Sandra Feaster, RN
Program Director
sfeaster@stanford.edu

Julie Arafeh, RN

Clarence Braddock, MD

Sanjeev Dutta, MD

Michael Farrugia, RN

Neil Gesundheit, MD

Ralph Greco, MD

Lou Halamek, MD

Phil Harter, MD

Leroy Heinrichs, MD

Steve Howard, MD

Cynthia Irvine

Thomas Krummel, MD

Geoff Lighthall, MD

Amy Nichols, RN

Sakti Srivastava, MD

Jim Stotts, RN

Jenn Stringer


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