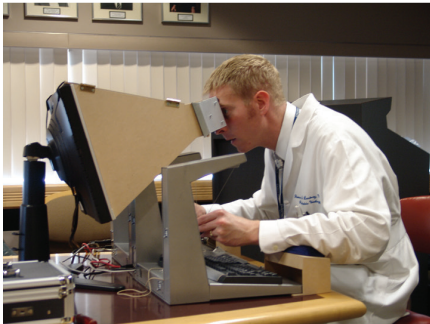


# 2008-2009 Annual Report



INSTITUTE FOR SIMULATION AND INTERPROFESSIONAL STUDIES  
AT THE UNIVERSITY OF WASHINGTON

<http://isis.washington.edu>



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

## Highlights from Fourth Year: July 1, 2008 – June 30, 2009

2008

**August** ISIS Presentation to UW Founders' Weekend

**September** ISIS Hosts 1st American College of Surgeons (ACS-AEI)  
Post Graduate Course  
ISIS Participates in UW Dawg Daze

**October** ISIS Hosts American Association of Medical College Deans' Council

**December** ISIS Annual Board and Corporate Council Meeting

2009

**January** ISIS featured on KPLU Program with Keith Seinfeld  
ISIS featured in Seattle PI News Article

**March** ISIS hosts Federal Relations and Congressional Staff Tour

**April** Presentation to Health Association of Medical Journalists  
Ninth and Jefferson Open House: Harborview Medical Center  
Tour for Namibia Delegates  
Visit from US Congressman, Jim McDermott, District 7

**May** Center for Clinical Excellence Presentation  
ISIS featured in Journal Newspaper  
Presentation at Inha Medical University (Incheon, South Korea)  
Presentation at Harbon University (Harbon, China)

**June** Harborview Community Internship Presentation  
ISIS Presentation to Dean's Circle Event  
ISIS Presentation to Nursing Faculty Workshop

The Institute for Simulation and Interprofessional Studies  
University of Washington

## Annual Report 2008 - 2009



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# Letter from the Chairman of the Board



**Carlos A. Pellegrini, M.D.**  
ISIS, Chairman of the Board

The Henry N. Harkins  
Professor and Chairman  
of Surgery

In the years prior to the formal establishment of the Institute for Simulation and Interprofessional Studies (ISIS), UW leadership saw simulation efforts being piloted in multiple departments across the School of Medicine. Their vision was to bring state-of-the-art technology and expertise, then scattered across departments and programs, under one roof. A single administrative body would bring about economies of scale, improve the quality of education, and standardize training across UW Medicine, in an effort to improve patient safety and in turn, decrease healthcare costs.

ISIS was established in response to the need for a centralized interdisciplinary center of simulation expertise at the University of Washington. The Dean of the School of Medicine, Dr. Paul Ramsey, approved the business plan defining ISIS in March 2005, and through his support, established the operational infrastructure of ISIS. The ISIS initiative was officially recognized as an Institute by the University of Washington School of Medicine in February 2006. Since that time, ISIS has gained the support of both hospital and School of Medicine leadership and was relocated to a new facility in the University of Washington Medical Center’s (UWMC) Surgery Pavilion in 2007.

The University of Washington School of Medicine has a well established reputation for excellence, ranking first among primary care medical schools in the country for the past 16 years (U.S. News and World Report, 2009). ISIS connects 29 departments and programs throughout UW Medicine, the

School of Medicine, the School of Nursing, the School of Pharmacy, Physician’s Assistant Training Program (MedEx), the Biorobotics Laboratory, and many others. ISIS offers educational opportunities across numerous specialties, providing the University of Washington with a truly interprofessional simulation training program.

ISIS will soon open its first affiliated site at Harborview Medical Center’s Ninth and Jefferson Building. With occupancy scheduled for January 2010, the second ISIS site will provide an increased focus on Neurosurgery, Trauma, Orthopaedics, Vascular Surgery, ENT, Cardiothoracic Surgery, Emergency Medicine, Paramedic, and Team Communication training.

In 2009, ISIS leaders established a new governance structure in anticipation of the expanding activities within the ISIS program. The new structure provides an increased emphasis on the area of Patient Safety and Quality. The newly formed committee, co-chaired by ISIS administrative faculty and the Associate Medical Director for Clinical Excellence, acts as a strategic link between ISIS operations, UW Medicine clinical entities, and the UW Medicine Quality Coordination Committee to provide guidance on the strategic and operational priorities of ISIS projects and programs as they relate to patient quality/safety priorities of UW Medicine. The ISIS Patient Safety and Quality Committee promotes and provides support to projects emphasizing improved patient safety outcomes. The committee will play a key role in the development of ISIS as a National TeamSTEPS training center and will continue to seek areas for continued improvement of practice throughout UW Medicine.

ISIS at the University of Washington, remains at the head of procedural, and soon, team training and reflects well on a school of medicine that already excels in patient care, teaching, and research.

## Letter from the Executive Director



**Brian Ross, Ph.D., M.D.**  
ISIS, Executive Director

Professor of Anesthesiology  
Adjunct Professor  
Medical Education and  
Bioinformatics

In its fourth year, ISIS continues to assert itself as an exemplar of simulation education. Expansion to the new ISIS-HMC site this winter will provide ISIS with much needed space and new course capabilities including a state-of-the-art cadaveric space for hands-on training.

From its inception, leaders in the School of Medicine, as well as those directing ISIS, recognized the growing role of simulation in healthcare education. This role is no more apparent than in the area of interprofessional teamwork and communication. With the reports of both the Institute of Medicine as well as the Joint Commission, which pointed out that over 70% of hospital associated deaths and sentinel events were associated with communication errors, ISIS began to shift its attention to curriculum development focused on interprofessional training. Appreciating the importance of emphasizing interprofessional education, and recognizing that an organization's name often reflects its mission, the Dean of the School of Medicine, in conjunction with the ISIS leadership re-titled the ISIS program in 2008 to the 'Institute for Simulation and Interprofessional Studies.'

This name change has facilitated several important partnerships over the past year. The most significant of these was in conjunction with the Schools of Nursing and Pharmacy, ISIS received grants from the Josiah Macy Jr. and Hearst Foundations (totaling over \$1 million) to develop an interprofessional curriculum for students based on the Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) models of effective communication.

TeamSTEPPS, a framework for ISIS training development, is a program developed by the Department of Defense and the AHRQ

(Agency for Healthcare Research & Quality), a branch of the U.S Department of Health & Human Services. This team training framework targets patient outcomes by improving communication and teamwork skills among healthcare professionals. The four dimensions of TeamSTEPPS teamwork skills and competencies include: 1) leadership; 2) situation monitoring; 3) mutual support; and 4) communication. By increasing interprofessional team awareness using the TeamSTEPPS tools, the goal is to target students' team performance, knowledge, and attitudes as outcome measures.

In 2008, several members of the ISIS team became national TeamSTEPPS trainers, and now with these faculty as a core, ISIS has taken a leadership role in moving an interprofessional TeamSTEPPS initiative forward within the UW Enterprise. ISIS looks forward to the continued expansion of its team training efforts by becoming a National TeamSTEPPS Training Center later this fall. As a TeamSTEPPS center, ISIS will provide skills training to visiting physicians and hospital personnel from around the country.

ISIS continues to advance in the development of new curriculum, the expansion of staff and the development of highly collaborative alliances with other educational and healthcare delivery systems at the local, national, and international levels. For example, this past spring, ISIS, along with the Department of OB/GYN, sponsored in-situ team training at the point of care for OB Nurses at University of Washington Medical Center. With a continuous focus on Patient Safety and Quality, ISIS plans to host further in-situ training sessions later this fall in other hospital based service areas such as the ICU, medical wards, and the operating rooms.

In addition to these efforts, ISIS hosted the first post-graduate course for the American College of Surgeons Accredited Educational Institutes (ACS-AEI), simulation centers certified as centers of excellence. ISIS is in the process of planning the second such course for the ACS to be held in September of 2009. This past spring, ISIS was awarded accreditation as a certified simulation center for the American Society of Anesthesiologists (ASA).

With a focus on interprofessional and collaborative research, ISIS recently learned of a directed funding opportunity which will advance further collaboration research with Madigan Army Medical Center.

ISIS and the University of Washington continue to establish themselves as leaders in medical education.

## Executive Summary

### Mission Statement

The primary goal of the Institute for Simulation and Interprofessional Studies is to provide leadership in the use of simulation technologies to improve the quality of health care education and improve patient safety and outcomes. ISIS will seek highly collaborative alliances in selected projects with other educational and healthcare delivery systems with similar interests in simulation. The primary impact of ISIS will be upon the citizens of the State of Washington and the greater WWAMI region. Through its research and education efforts and publication of results, ISIS will also have a strong influence and potential impact upon providers and patients in a global fashion.

### Training

ISIS seeks a reputation for excellence in curriculum delivery and research and development. ISIS serves dual roles: as a training center for a wide spectrum of skills including procedural and management skills and as a simulation resource center for the School of Medicine by providing simulation expertise and managing simulation assets. Since 2006, ISIS has completed over 450 training courses, reaching nearly 4,000 participants across all courses (2,819 individuals). As of July 1, 2009, physicians, residents, allied health professionals (MedEx, nurses, EMTs), medical students, and community education outreach sessions have logged a total of 8,450 learner hours.

#### Resident and Physician Training

There are regularly scheduled skills-based classes for Residents from Surgery, Anesthesiology, Obstetrics and Gynecology, Orthopaedics and Sports Medicine, and Medicine. In addition, faculty and other practicing physicians who wish to refine skills or learn new ones are provided access to ISIS resources.

#### Medical Student Training

ISIS provides training to Medical Students during their rotations and in their "Transition to Clerkship" and "Transition to Residency" capstone classes (skill stations include: Basic Airway Management, Intubation, EKG, etc.). Rotation classes vary by department but have included Introduction to Anesthesiology, OB/GYN Dry Lab, and Internal Medicine Basic Airway courses.

#### Healthcare Professional Training

ISIS trains nurses, respiratory therapists, pharmacy students, physician assistant students, midwives, paramedics, EMTs,

and other healthcare professionals from the University of Washington Medical Center, surrounding hospitals, and from throughout the region.

#### Community Outreach

ISIS supports a robust outreach program to middle and high school students interested in the health sciences.

### Accreditation

In 2008, ISIS gained its second accreditation, this one by the American Society of Anesthesiologist (ASA). The ASA maintains an online database of simulation resources for its members, providing links to ISIS and other simulation centers and vendors.

Since its 2006 Level I Comprehensive Education Institute accreditation by the American College of Surgeons (ACS), ISIS has partnered with ACS to host the first Accredited Education Institutes' Post Graduate Course in September of 2008. Over 100 members of ACS Accredited Education Institutes traveled from around the globe to participate in the two-day symposium.

ISIS is currently progressing towards completion of its 3-year, re-accreditation by the ACS, and looks forward to hosting the College's second Post graduate course this fall.



UNIVERSITY OF WASHINGTON ROTC STUDENTS TAKING PART IN AN ISIS COMMUNITY OUTREACH SESSION.

## Affiliated Organizations

In addition to collaborating with UW Medicine affiliated institutions (Harborview Medical Center, Seattle Children's, Boise VA Medical Center, and the University of Washington Medical Center), ISIS has a signed Memorandum of Understanding (MOU) with the Centre of Excellence for Surgical Education and Innovation (CESEI) at the University of British Columbia (Vancouver, BC), the Simulation and Clinical Learning Center at Oregon Health & Science University (Portland, OR), and with the Andersen Simulation Center at Madigan Army Medical Center (Tacoma, WA).

ISIS is working to develop a Northwest Medical Simulation Roundtable with members of simulation centers from throughout the Puget Sound Area.

## Staffing

ISIS is diligently served by its remarkable and hard-working staff. In addition to the Executive Director, ISIS front-office operations are supported by a full-time dedicated Administrator, programs operations specialist, and IT specialist, while a lab director and two full-time lab technicians support the simulation lab operations. This core staff is augmented by an hourly part-time technician and student volunteers.

## Governance

### Board of Directors

ISIS is governed by a Board of Directors appointed by Paul Ramsey, M.D., CEO, UW Medicine, Executive Vice President for Medical Affairs, and Dean of the School of Medicine, University of Washington. The Board is comprised of select members who represent all areas of UW Medicine and are advocates for the mission and goals of ISIS. Members of the Board of Directors are:

**Carlos Pellegrini**, M.D., ISIS Board Chair

**Thomas Benedetti**, M.D., M.H.A., ISIS Chair, Patient Safety and Quality Committee

**William Bremner** M.D., Chair, Department of Medicine

**John Clark**, M.D., Chair, Department of Biological Structure

**Richard Ellenbogen**, M.D., Chair, Department of Neurological Surgery

**David Fisher**, M.D., ISIS Seattle Children's Executive Representative

**Cindy Hecker**, BSN, ISIS HMC Executive Representative

**Sara Kim**, Ph.D., ISIS Chair, Interprofessional Education and Practice Committee

**Avalon Lance**, BSN, M.H.A, ISIS Administrative Director

**Tom Norris**, M.D., Vice Dean for Academic Affairs

**Paul Ramsey**, M.D., Dean, UW School of Medicine, CEO, UW Medicine

**Larry Robinson**, M.D., Chair, UW Medicine Safety and Coordination Committee, Executive Vice President for Medical Affairs

**Brian Ross**, Ph.D., M.D., ISIS Executive Director

**Richard Satava**, M.D., F.A.C.S, ISIS Senior Executive Advisor

**Debra Schwinn**, M.D., Chair, Department of Anesthesiology

**Mika Sinanan**, Ph.D., M.D., ISIS Chair, Research and Development Committee

**Johnese Spisso**, M.P.A., Vice President of Medical Affairs (VPMA) UW, COO, UW Medicine

**F. Bruder Stapleton**, M.D., Chair, Department of Pediatrics

**Eileen Whalen**, ISIS HMC Executive Representative

**Frederick Wolf**, Ph.D., Professor and Chair, Medical Education & Biomedical Informatics

**Stephen Zieniewicz**, FACHE, ISIS UWMC Executive Representative

**Brenda Zierler**, BSN, Ph.D., Associate Dean of Technology Initiative, Biobehavioral Nursing and Health Systems

### Executive Committee

**Carlos A. Pellegrini, M.D., Chairman**

Dean Ramsey has appointed Dr. Pellegrini to serve as Chair of the ISIS Board. As part of this commitment he also chairs the ISIS Executive Committee. Dr. Pellegrini has been a long-standing advocate and champion of simulation training. Early on, Dr. Pellegrini saw the potential benefits of training via simulation and has been involved with the ISIS concept from its inception. Dr. Pellegrini is professor of surgery, Chair of the Department of Surgery, and holder of the Henry N. Harkins Endowed Chair in Surgery at the University of Washington.

He received his M.D. in 1971 from the University of Rosario Medical School in Argentina. After training in general surgery in Argentina, he completed a second residency at the University of Chicago.

In 1979, he was appointed to the faculty of the University of California, San Francisco, where he developed and directed the Center for GI Motility. As an active gastrointestinal surgeon at UCSF, he was recognized on several occasions by residents and students for his teaching. In 1993, he became chair of the Department of Surgery at the University of Washington in Seattle. A world leader in minimally invasive gastrointestinal surgery, Dr. Pellegrini is a pioneer in the development of video endoscopy for the surgical treatment of gastro esophageal reflux disease and esophageal motility disorders, particularly achalasia.

At the University of Washington he developed two major clinical research programs: the Center for Videoendoscopic Surgery and the Swallowing Center.

Dr. Pellegrini has been a leader in medical education and was a major contributor to the fundamental reform of residency work hours. In 1996, in recognition of his role in the strengthening of all clinical, teaching, and research programs of the Department of Surgery, he became the first holder of the Henry N. Harkins Endowed Chair in Surgery, named for the first chairman of the UW Department of Surgery.

Dr. Pellegrini is currently a regent of the American College of Surgeons and past president of the American Surgical Association. He has also recently completed a six-year term as a director of the American Board of Surgery.

Dr. Pellegrini serves on several editorial boards and publishes regularly in the field of minimally invasive surgery for upper gastrointestinal diseases, esophageal cancer, and related areas. He also publishes extensively in the area of training and new technologies for preparing surgeons in his specialty areas. His bibliography lists more than 300 articles, chapters, editorials, and books, as well as 11 surgical videos and movies.

**Brian K. Ross, Ph.D., M.D., Executive Director**

Dr. Ross is the energy behind the advancement of medical simulation within UW Medicine. His vision has been instrumental in shaping what ISIS is today, and based on his vision and expertise in medical simulation, Dr. Ross was appointed by the dean of the School of Medicine to serve as the first executive director of ISIS. In this role, he serves on the ISIS

Board and the ISIS Executive Committee.

Dr. Ross is a UW Medicine professor of anesthesiology. He received his Ph.D. in physiology/pharmacology from the University of North Dakota in 1975 and completed his postdoctoral research in respiratory diseases at the University of Washington in 1979. He earned his M.D. from the University of Washington Medical School in 1983. In 1986, Dr. Ross completed a research fellowship in Obstetrical Anesthesia from the University of California at San Francisco, and his residency in anesthesiology at the University of Washington in 1987.

Dr. Ross has been a member of the UW School of Medicine faculty since 1987; and in 2003, he was promoted to full professor. In 2007, Dr. Ross was appointed Adjunct Professor to the Department of Medical Education and Biomedical Informatics.

Dr. Ross has been involved in medical simulation at the UW since 1996 when he developed the initial simulation training curriculum for the Department of Anesthesiology. Since then, he has developed over 20 anesthesia simulation courses for medical students, residents and nurses.

**Sara Kim, Ph.D., Chair, Interprofessional Education and Practice Committee**

Dr. Kim serves as the Chair of Interprofessional Education and Practice Committee at the Institute for Simulation and Interprofessional Studies. Dr. Kim also serves on the ISIS Board of Directors, the ISIS Executive Committees, and is an integral member on the Research and Development Committee. She received her Ph.D. in medical education in 1999 from the University of Washington. With her training in educational technology, Dr. Kim has implemented and evaluated numerous web-based distance education tools for training medical students and residents. Her work has been published in major journals in medical education such as Academic Medicine, Medical Education, and Teaching and Learning in Medicine. She is currently Associate Professor in the Department of Medical Education and Biomedical Informatics.

Her primary role in ISIS involves developing and expanding the ISIS educational infrastructure including co-chairing the Faculty Development group, curriculum development, internal and national peer-review of curricular materials, faculty mentoring in manuscript and grant writing, and eLearning content development in patient safety and quality.

### **Mika N. Sinanan, M.D., Ph.D., Chair, Research and Development Committee**

Dr. Sinanan's primary role within ISIS is Chair of Research and Development. In addition, he serves on the ISIS Board of Directors and as a member of the ISIS Executive Committee.

Dr. Sinanan is a professor of Surgery and an adjunct associate professor of Electrical Engineering at the University of Washington School of Medicine. He received his M.D. from Johns Hopkins University in 1980 and completed his residency at University of Washington in 1988. Following residency, he joined the faculty of the University of Washington Department of Surgery. He received his Ph.D. in gastrointestinal physiology in 1991 from the University of British Columbia.

Widely published and recognized as a leader in minimally invasive gastrointestinal surgery, Dr. Sinanan served as co-director of the Center for Videoendoscopic Surgery at the UW School of Medicine from 1993-2004. Dr. Sinanan is committed to the advancement of robotic surgery and was the co-investigator of a grant from the Department of Defense, "Studying Mini Robot Design for Military Telesurgery in the Battlefield."

As chair of the Surgery Pavilion Project Management Committee, Dr. Sinanan was instrumental in the design and planning of the Surgery Pavilion, which houses ISIS UWMC.

Dr. Sinanan's current positions include Medical Director of the Surgical Specialties Center, and President of University of Washington Physicians. His commitment to quality improvement has led to a number of patient safety initiatives within the hospital setting. This vision has helped ISIS focus on the mission of patient safety. Dr. Sinanan is currently a leader in the development of ISIS' simulation curriculum for Central Venous Line Placement, used for training all UW Medicine clinicians in standardized safety procedures.

### **Thomas J. Benedetti, M.D., M.H.A., Chair, Patient Safety and Quality Committee**

Dr. Benedetti currently serves as ISIS Chair for the Patient Safety and Quality Committee; a member of the Board of Directors; and a member of the Executive Committee of ISIS.

Dr. Benedetti has been recognized throughout his academic career by residents and peers for his teaching as well as excellence in research at both the University of Southern California and the University of Washington. His main clinical

research interest has been in birth trauma. Dr. Benedetti has spent time in Bristol, England studying at the Bristol Simulation Center and Southmead Hospital. He has adapted a prototype Birthing Trainer simulator to assist in training for shoulder dystocia and other obstetric emergencies for use at the University of Washington (initially developed in Bristol by the Limbs and Things Corporation). Dr. Benedetti serves on the Editorial Board of the Society for Simulation in Healthcare; the University of Washington School of Medicine Admissions Committee; is a frequent presenter at simulation conferences; and has been a guest faculty at other simulation centers, including the University of California, Davis.

Dr. Benedetti is Professor and Vice Chairman of the Department of Obstetrics and Gynecology at the University of Washington. He received his M.D. in 1973 from the University of Washington in Seattle and completed his obstetrics and gynecology residency and maternal fetal medicine fellowship at the University of Southern California in Los Angeles. Dr. Benedetti joined the faculty at the University of Washington in 1979, serving as Director of the Maternal Fetal Medicine Division, Department of OB/GYN from 1983-2002. He received his masters in health administration from the University of Washington in 2000. He presently serves as the Director of Education for the Department of Obstetrics and Gynecology at the University of Washington.

### **Richard M. Satava, M.D., Senior Executive Advisor**

Dr. Satava serves on the ISIS Board of Directors, and the ISIS Executive Committee.

Dr. Satava is a professor of surgery at the University of Washington. In addition to his role as senior executive advisor for ISIS, Dr. Satava is also the UW Medical Science Consultant at the U.S. Army Medical Research and Materiel Command in Ft. Detrick, Maryland.

Previous positions include professor of surgery at Yale University and a military appointment as professor of surgery (USUHS) in the Army Medical Corps assigned to general surgery at Walter Reed Army Medical Center.

Dr. Satava completed his undergraduate training at Johns Hopkins University. He attended medical school at Hahnemann University of Philadelphia with an internship at the Cleveland Clinic. His surgical residency was completed at the Mayo Clinic, culminating with a fellowship of surgical research at the Mayo Clinic.

Dr. Satava has served on the White House Office of Science and Technology Policy Committee on Health, Food and Safety. He is currently a member of the Emerging Technologies and Resident Education Committee and the Informatics Committee of the American College of Surgeons. He is past president of the Society of American Gastrointestinal Endoscopic Surgeons, past president of the Society of Laparoendoscopic Surgeons, and is on the Board of Governors of the National Board of Medical Examiners.

He participates in a number of surgical and engineering societies and is on the editorial board of numerous surgical and scientific journals. He has been continuously active in surgical education and surgical research, with more than 200 publications and book chapters in diverse areas of advanced surgical technology, including Surgery in the Space Environment, Video and 3-D Imaging, Telepresence Surgery, Virtual Reality Surgical Simulation, and Objective Assessment of Surgical Competence and Training.

During his 23 years of military surgery he has been an active flight surgeon, an Army astronaut candidate, M.A.S.H. surgeon for the Grenada invasion, and a hospital commander during Desert Storm. With all of these other responsibilities, he has never given up his clinical surgical practice. While striving to practice the complete discipline of surgery, he is aggressively pursuing the leading edge of advanced technologies to formulate the architecture for the next generation of medicine.

## **Status of Fourth Year Goals**

### **Integrate Patient Safety and Quality**

1. Establish mechanism whereby ISIS is integrated into the UW Medicine Patient Safety/Quality initiatives.
  - a. ISIS Representative on the UW Medicine Safety and Coordination Committee  
**STATUS:** Thomas Benedetti and Gene Peterson, Chair and Co-Chair of ISIS Patient Safety and Quality Committee serve on the UW Medicine Safety and Coordination Committee.
  - b. ISIS Representative on the Medical Emergency Response Committee (MERC)  
**STATUS:** Brian Ross, Executive Director of ISIS serves on the Medical Emergency Response Committee (MERC)
2. Initiate two funded Patient Safety/Quality cross-organizational curriculum development/implementation/evaluation projects as identified by UW Medicine Committees and ISIS Patient Safety/Quality Committee as UW Medicine priorities.

### **STATUS:**

- ISIS certification of CVC training has been mandated by both hospitals for all incoming Residents (2008, 2009). Specialties: Anesthesiology, Family Medicine, Internal Medicine, Interventional Radiology, Surgery. (Unfunded, expect funding September 2009).
  - Provides Code training for hospital based programs (OR Nurses). (Unfunded).
  - ISIS sponsored in situ training with OB Nurses (UWMC 6th Floor, Labor and Delivery). (Unfunded).
  - Developed code training program for UWMC. (Unfunded).
3. Complete established progress expectations on the following projects:
    - a. Central Venous Catheter Initiative  
**STATUS:** The CVC project has implemented training and certification through ISIS. The catheter tracking system is currently being rolled out at UWMC.
    - b. Interprofessional Training (MACY) Initiative  
**STATUS:** Progress on the Macy/Hearst project is on track with the stated milestones and deliverables.

### **Strengthen ISIS Cross-Institutional Involvement**

1. Expand ISIS Facility:
    - a. ISIS-HMC Center  
**STATUS:** ISIS-HMC continues to be in the build-out phase, construction is scheduled to finish December 31, 2009
    - b. Establish the Administrative Structure and Planning of ISIS-SC  
**STATUS:** Established relationship with Seattle Children's Neonatal Resuscitation Certificate Program to deliver all NRP certification workshops through ISIS-UWMC.
    - c. Initiate Planning for one WWAMI distant site  
**STATUS:**
  - ISIS is in discussion with the Spokane Riverpoint Campus (UW, WSU, Eastern) to develop a distant-WWAMI site for use within the MedEx, Nursing, and Medical School training programs.
  - Boise continues to strengthen its simulation training program.
2. Add Targeted Personnel
    - a. Dedicated ISIS Fellow  
**STATUS:** Discussions with a potential fellow
    - b. ISIS Core Faculty  
**STATUS:** Added 2 Core Faculty (for a total of 12).
    - c. ISIS Adjunct Faculty  
**STATUS:** Added 7 Adjunct Faculty (for a total of 23) and 3 Research Faculty (for a total of 7).

## Facilities

Located on the first floor of the University of Washington Medical Center Surgery Pavilion, the ISIS-UWMC facility celebrated its ribbon cutting ceremony in August of 2007.

Comprised of ten training areas totaling 1,875 square feet, the facility is versatile and allows for easy re-configuration for various types of simulation training. Its versatility is enhanced by wall-mounted storage, improving access and maximizing work space.

The ISIS facility has a virtual operating room that is fully outfitted with a range of surgical towers, booms, lighting, and anesthesia equipment. The virtual OR is an optimal environment for team training exercises. Adjacent areas include space for storage and scenario preparation, as well as a control room that houses AV equipment and the computer systems controlling the high fidelity manikins.

In addition to a comprehensive training area, ISIS also provides access to specialty-specific training tools. For instance, trainees have access to areas specifically dedicated to surgical skills training with an emphasis on laparoscopic procedures. When not in use, the laparoscopic trainers can be moved and further flexibility is provided through reconfigurable walls to accommodate a variety of courses and group sizes.

The ISIS area main conference room serves a multipurpose role. Equipped with white-out glass, “Smart Board™,” Live OR feed, and AV equipment, the room’s technological capabilities make it ideal for conducting didactic sessions, scenario viewing, debriefing exercises, and staff meetings. The area also doubles as the University of Washington Medical Center’s backup Emergency Command Center. Both private and common staff areas round out the facility.

UWMC ISIS training is supplemented by the Center for Videoendoscopic Surgery (CVES). Housed in the Health Sciences Center on the 6th floor, the 950 sq. ft. experimental laboratory supports the training of medical students, residents in surgical disciplines, including General Surgery, Cardiothoracic Surgery, Urologic Surgery, OB/GYN Surgery, and Orthopaedics. It supports an extensive array of community-based educational programs in open and minimally-invasive surgical techniques. A variety of basic and applied research projects through the Department of Surgery and other departments in the School of Medicine, and in the School of Engineering, through the Bioengineering and Biorobotics program, are also supported. The state-of-the-art laboratory is comprised of four fully outfitted minimally-invasive surgical stations. Each station has

anesthesia equipment, videoendoscopic equipment, insufflation, gas evacuation, and audio and video data links to other stations and outside of the surgical laboratory. The laboratory is linked through dedicated coaxial lines to the surgical department conference room for training exercises, and to the operating room at the University of Washington Medical Center for coordination of training programs, with live operating room video presentations, conference format presentations, and experimental surgical procedures.

A full supply of disposable and reusable laparoscopic instruments is available to perform a wide array of surgical procedures, encompassing thoracic, cardiac, abdominal, and pelvic minimally invasive and open surgical operations.

The laboratory in the Center for Videoendoscopic Surgery is supported by a director and co-director, Drs. Carlos Pellegrini and Brant Oelschlager, surgeons in the Department of Surgery, and is linked to a fellowship training program in videoendoscopic surgery which trains two fellows per academic year.

ISIS continues to expand its reach across the UW Medicine enterprise, with the opening of its first affiliated site at Harborview Medical Center’s Ninth and Jefferson Building.

Construction on the 8,000 sq ft. ISIS HMC site is currently underway with occupancy estimated for early 2010. This brand new facility will supplement the training efforts of ISIS UWMC by offering focused training in the areas of neurosurgery, orthopaedics, ENT, vascular surgery, paramedics, trauma, and emergency medicine. The facility, accessed via shuttle bus from UWMC, will house a virtual operating room, conference and classroom space, several dry lab areas and a convertible eight station cadaveric wet lab facility. The entire space has been built for multi-use, in order to accommodate a number of different groups and courses.

The transition into the new HMC facility will bring with it more involvement of programs within UW Medicine and a new focus on simulation as a vital training tool. As the expansion of ISIS continues to develop, the interest and involvement within the University community continues to grow.

d. Key Interprofessional Training personnel.

**STATUS:** Several ISIS faculty members have core responsibilities in the Macy/Hearst interprofessional training grants. ISIS faculty members are core members of the UWMC/HMC Enterprise-wide TeamSTEPPS initiative.

3. Initiate at least one ISIS directed simulation education opportunity into Medical School Curriculum.

**STATUS:**

- Completed R1-R3 cross-discipline questionnaire for medical students skills need assessment.
- The Macy/Hearst Project is currently developing 4th year curriculum for Medical, Nursing, Pharmacy, and MedEx students.
- ISIS continues to participate in 2nd and 4th year Capstone.
- ISIS provides Triple I and MSRTP student support for 1st and 2nd year Medical Students.

4. Establish at least one interprofessional education program

**STATUS:** 4th Year curriculum, being developed through the Macy and Hearst grants.

### Strengthen ISIS Financial Position

1. Increase extramural funding.

**STATUS:**

- Awarded Macy Grant.
- Awarded Hearst Gift.
- SAGES grant which includes ISIS support.
- Applied to become National TeamSTEPPS Training Center.
- Finalized FY09 Congressional Directed Appropriation proposal.
- Submitted pre-proposal for FY10 Congressional Directed Appropriation funding.

2. Increase cultivation of strong relationships with potential donors.

**STATUS:**

- Hosted UW Medicine – Strategic Initiatives Tour.
- Presented at the Dean’s Circle.
- Meeting with industry donors for possible donations to ISIS-HMC facility.
- Visits by Congressmen Norm Dicks and staff members.
- Visit by Congressman Adam Smith’s staff members.
- Visit by Congressman Jim McDermott and staff members.
- Visit by Congressional staff members.
- Multiple media coverage.

3. Demonstrate organizational value to hospital partners that result in hospital funding

**STATUS:**

- The CVC certification project provides proper training and tracking for all lines placed at UWMC and HMC (Unfunded, expect funding September 2009).
- OB in situ training in 2008 and 2009 exposed several system errors within UWMC. These errors were identified and corrected (Unfunded).
- ISIS joined the UW-HMC TeamSTEPPS enterprise to develop cross-enterprise training.

4. Establish ISIS facility capacity financial/production model with learner hours as basis

- a. Rates for non-UW utilization of ISIS
- b. Design and market two ISIS education programs for non-UW Medicine organization use (using existing ISIS programs)
- c. Establish cost for UW utilization of ISIS.

**STATUS:** The ISIS facility capacity has been established with learner hours as a basis. For the cost and rate of UW Medicine and non-UW Medicine use is dependent on each individual course. The capacity financial/production model can be used to determine these rates once the course needs have been identified.



THE ISIS HMC FACILITY WILL HOUSE A FULLY-OUTFITTED 8 STATION WET-LAB.

## Corporate Council



Richard Satava, M.D., F.A.C.S.  
Senior Executive Advisor  
  
Professor, Surgery

### Overview

The Corporate Council is comprised of members who are affiliated with a wide range of corporations or businesses that have interest or involvement with simulation training in the medical environment. Members include representatives from Anesthesia Equipment Supply (AES), Medical Education Technologies, Inc. (METI), Microsoft, Premera Blue Cross, Simulab, and Stryker. These members play an important role in providing information to ISIS on external developments that may affect the work and goals of ISIS. Additionally, these members provide a conduit of information about ISIS to their constituencies, and assist ISIS in cultivating and building appropriate relationships with industry, donors, community members, and other external bodies interested in ISIS.

The corporate council meets at least annually to discuss ways in which its members can work to assist ISIS gain a national and international reputation. The council works with the UW Medicine Development Office to assist in fundraising efforts; it provides possible collaborations on ISIS projects and may serve as a testing platform for members' products.

### Congressional Support

In the federal fiscal year 2009 (FY09), ISIS received a congressional special interest funding in the amount of \$3.852 million. This was for specific research projects, a number of which are in collaboration with the Madigan Army Medical Center, which is one of the partners in the ISIS Enterprise. This funding will allow ISIS to develop a robust research program in medical simulation and training.

## Visitors: Businesses and Organizations

Given the unique focus of ISIS and support within the University of Washington, ISIS has been fortunate to have been visited by a number of individuals, business and organizations. The following is a sample of the organizations and businesses that have visited ISIS within the past year.

- Aesculap
- Anesthesia Equipment Supply\* (AES)
- Codman (Johnson and Johnson)
- Cook Medical
- Covidien
- Frazier Healthcare
- The Hearst Foundation
- Laerdal Medical
- METI\*
- Mimic Technologies
- Microsoft
- The Macy Foundation
- Red Llama, Incorporated
- Simulab Corporation \*
- Stryker Corporation\*

*\*Denotes Corporate Council affiliation*



CONGRESSMAN JIM McDERMOTT  
VISITED ISIS IN APRIL 2009.

## Interprofessional Education and Practice



Sara Kim, Ph. D.  
Chair, ISIS Interprofessional  
Education and Practice

Associate Professor,  
Medical Education and  
Biomedical Informatics

### Overview

The Interprofessional Education and Practice (IPEP) Committee, serves as executive administrator for all educational activities within ISIS. The Committee is chaired by Dr. Sara Kim, Ph.D., and Dr. Brenda Zierler, Ph.D.

### Mission

The Interprofessional Education and Practice Committee promotes excellence in education via:

1. Integration of standard curriculum development in all simulation training.
2. Development and validation of education measures.
3. Expansion of distance learning using cutting-edge technologies.
4. Faculty development targeting skills and expertise required of competent simulation educators.

The committee seeks to achieve its mission through an active collaboration within the School of Medicine and beyond, including Schools of Nursing and Pharmacy.

The importance of effective interprofessional communication and teamwork has become a central focus of the IPEP Committee, which oversees the development of curricula and learner training within ISIS.

Highlighting the interprofessional nature of the ISIS program, ISIS along with the Schools of Nursing and Pharmacy, have recently begun collaboration in the development of cross-disciplinary team training curriculum. With funding from the Josiah Macy Jr. Foundation and William Randolph Hearst Foundation (over \$1 million, combined), a new interprofessional training model is being piloted which partners

students and faculty mentors in the development of team training, evaluation, and research.

ISIS continues to provide assistance to faculty members as they develop curricula and scholarly products. Assistance is offered in a number of ways. First, the IPEP Committee assists faculty in determining potential areas in which to develop curricula for simulation training. The Committee uses multiple needs assessment methods and an evaluation system for identifying training priorities (e.g., Patient Safety Net Data and Residency Requirement Committee guidelines).

Second, the Committee reviews proposed curriculum and prepares materials for submission to the Association of American Medical Colleges (AAMC) MedEdPORTAL. MedEdPORTAL provides electronic, web-based access to peer-reviewed educational materials. Launched in 2006, the centralized repository houses informational material including curricula, presentations, and tools for faculty development. It promotes collaboration between academic institutions both nationally and internationally. Currently, ISIS has 2 curricula formally accepted by MedEdPORTAL with more under review or prepared for submission.

## Formal Curriculum Under Development

Using a standardized curriculum template, Educational materials currently under development include:

### Anesthesiology

1. Anaphylaxis
2. Fundamentals of BasicUltrasound
3. Difficult Airway Management\*\*
4. OB Bleeding Emergency
5. O2 Line Failure
6. Medical Error Disclosure
7. Venous Air Embolism\*\*

### Internal Medicine

1. Code Blue Medical Emergency Management
2. Lumbar Puncture
3. Thoracentesis

### OB/GYN

1. Basic OB/GYN Technical Skills
2. Basic OB Ultrasound
3. Breach
4. Hemorrhage Management



5. Hypertensive Management
6. Shoulder Dystocia
7. Trans-vaginal Tape

#### Pediatric Dentistry

1. Conscious Oral Sedation

#### Pediatric Urology

1. Suprapubic Catheter Placement \*\*\*

#### Surgery

1. Suturing/Wound Management
2. Laparoscopic Cholecystectomy

#### Interprofessional

1. Basic Ultrasound Competency
2. Central Venous Catheter Placement
3. Flexible Brinchoscopy\*
4. Medical Student Elective
5. Team Training

\*Submitted to MedEd Portal;

\*\* Accepted by and Available on MedEdPortal

\*\*\*Under Internal Review

## ISIS Educational Database

The development of the ISIS database has been a major focus this past year. ISIS received IRB approval for the Repository ISIS Educational Database in the summer of 2008 and as the database continues to expand and improve, trainees and faculty members are able to log their courses, time-spent, and evaluations within the system. The database provides ISIS faculty and researchers with extensive reports on trainee courses, faculty hours, trainee and instructor evaluations and facility usage. This repository data is available to researchers for future research via formal request and hopes to encourage research in all project categories.

#### Faculty Development

Under the direction of ISIS Executive Director Brian Ross, and IPEP Chair, Dr. Sara Kim, the ISIS faculty community continues to expand across UW Medicine.

ISIS enrolls faculty and staff members from over twenty departments and programs through a formal review process.

Faculty and staff members either contact ISIS directly for involvement or are approached by way of department recommendation. In addition, ISIS actively recruits residents,

who have interests in implementing educational research projects, generating scenarios for curriculum, or serving as instructors.

The faculty is affiliated in one of the following three categories: (a) core faculty; (b) adjunct faculty; and (c) research faculty.

## Membership Requirements

### Core Faculty (15 current members)

Membership requirements and expectations for Core Faculty

Members include:

1. Proposal by Departmental Chair;
2. ISIS Administrative Faculty (IAF) Review of the candidate's departmental teaching evaluations;
3. Dedication of 10% non-clinical time to the ISIS Program with work to be performed in ISIS;
4. Four, half-day dedicated time spent in the ISIS faculty workroom (with focus on ISIS and home department's curriculum efforts);
5. First author a minimum of one ISIS course curriculum, yearly;
6. Service as ISIS peer reviewer for at least two other curricula, yearly;
7. Attendance at monthly Faculty Development Group Meetings;
8. Participation in annual ISIS faculty review (by Faculty Evaluations Committee).

### Adjunct Faculty (17 current members)

Membership requirements and expectations for Adjunct Faculty Members include:

1. Proposal by Department Chair;
2. IAF Review of candidate's departmental teaching evaluations;
3. Submission of one-page curriculum proposal for existing ISIS course the member would like to teach;
4. IAF review of completed curriculum;
5. Attendance at monthly Faculty Development Group Meetings;
6. Participation in annual evaluation/ISIS activities review (by faculty Evaluations Committee).

### Research Faculty (6 current members)

Membership requirements and expectations for Research

Faculty Members include:

1. Proposal by Department Chair;
2. IAF Review of candidate's departmental research credentials;
3. Submission of one-page proposal for research the member would like to conduct;
4. Completion of IAF and IRB project review;

5. Attendance at monthly ISIS Research and Development Meetings;

6. Participation in annual status review of research project (by R&D Committee).

## Faculty Members

### Core Faculty Members

|                    |   |
|--------------------|---|
| Anesthesiology     | Stefan Lombaard, M.D.<br>Julia Metzner, FACS<br>Karen Souter, FACS<br>Alexander Vitin, M.D. |
| Dentistry          | Simon Lin, M.D.   |
| Emergency Medicine | Adeyinka Adedipe, M.D.<br>William Hurley, M.D.  |
| MedEx              | Grace Landel, MEDEX   |
| Medicine           | Karen McDonough, M.D.   |
| OB/GYN             | Michael Fialkow, M.D.   |
| Ophthalmology      | Michael Wu, M.D.  |
| Orthopaedics       | Lisa Taitsman, M.D.   |
| Pathology          | Corinne Fligner, M.D.   |
| Surgery            | Andrew Wright, M.D.<br>Thomas Varghese, M.D.  |

### Adjunct Faculty Members

|                    |   |
|--------------------|---|
| Anesthesiology     | Gregory Dembo, M.D.<br>Thomas Edwards, M.D.<br>Christopher Kent, M.D.<br>Gene Peterson, M.D.<br>Kenneth Plitt, CRNA<br>Irene Rozet, M.D.<br>Gouri Sivarajan, FACS<br>Murali Sivarajan, M.D.<br>Youri Vater M.D. |
| Family Medicine    | Mark Beard, M.D.  |
| Emergency Medicine | Kris Benvenuto, M.D.<br>Jennifer Reid, M.D.   |

|                   |  |
|-------------------|--|
| Internal Medicine | Melissa (Moe) Hagman, M.D.                                     |
| Medical Education | David Masuda, M.D.   |
| Nursing           | Cindy Sayre, R.N.<br>Juvann Wolff, MN, ARNP                    |
| OB/GYN            | Anne Marie<br>Aimes-Oelschlager, M.D.<br>Kathy O'Connell, R.N. |
| Otolaryngology    | Robert Stanley, M.D.   |
| Pediatrics        | Thomas Strandjord, M.D.  |
| Surgery           | Jeff Friedrich, M.D.   |

## Research Faculty Members

|                   |                       |
|-------------------|-----------------------|
| Anesthesiology    | Ryan Jense, M.D.      |
| Family Medicine   | Frederick Chen, M.D.  |
| Internal Medicine | Tom Gallagher, M.D.   |
| Nursing           | Brenda Zierler, Ph.D. |
| Pediatric Urology | Thomas Lendvay, M.D.  |
| Otolaryngology    | Mark Whipple, M.D.    |

## CVES Faculty Member

|         |                         |
|---------|-------------------------|
| Surgery | Brant Oelschlager, M.D. |
|---------|-------------------------|

## Current Courses

In addition to the 24 curricula currently in development, ISIS offers the following courses which have been taught to over 2,000 trainees:

### Anesthesiology

#### Advanced ACLS for Anesthesia

These courses are comprised of a number of short ACLS sessions for fourth year Anesthesia residents. The residents must thoroughly interpret the monitors and lab results to correctly identify and treat the arrhythmias, which include bradycardia, PEA, and asystole.

### **Anaphylaxis**

This course teaches Anesthesiology residents the appropriate management of an anaphylactic drug response. The patient first reacts with a bronchospasm followed by profound hypotension and an elevated pulse. Following treatment of the anaphylaxis, the residents must correctly identify and treat a tension pneumothorax that ultimately causes the patient's condition to deteriorate once again.

### **Basics of Airway Management**

This course teaches the basic principles of airway management. Students first attend a lecture, followed by hands on training on airway simulators. Students will learn about the anatomy of the airway, proper management before, during and after surgical procedures and emergency management. A number of different airway courses are offered and include courses for Anesthesiology residents, Family Medicine residents, Surgery residents, Otolaryngology residents, and medical students.

### **Difficult Airway Management**

This course teaches the principles of airway management on a patient with a difficult airway. The steps involved are assessing and recognizing a potential difficult airway, selecting the proper equipment and then performing the intubation on the patient. Separate courses with the same course content are offered for anesthesiology residents, family practice residents, surgery residents, otolaryngology residents, and medical students

### **O2 Line Failure**

This course teaches emergency patient management skills in a scenario where an oxygen line fails during a procedure. The course is designed for Anesthesiology residents.

### **Anesthesia Machine Failure**

This course teaches emergency patient management skills in a scenario where a power outage occurs and the anesthesia machine fails to work. The course is designed for Anesthesiology residents.

### **Intra-Op Courses**

These situational courses familiarize the students with the correct way to handle complications during an operation. The courses include Intra-Op Bronchospasms, MI, Embolisms, and hypotension.

### **Conscious Sedation**

This course is taught two to four times per year and is for nurses. This review class covers a number of important scenarios and emphasizes teamwork and communication skills.

### **Fiber Optic Dexterity**

This course teaches Anesthesia residents appropriate methods for using a fiberoptic scope. The course utilizes an airway simulator that is internally comprised of a series of branching passageways and pictures that can be reconfigured however the instructor sees fit. The residents are taught how to manipulate the scope and navigate the simulated airway passages while maintaining the appropriate orientation and correctly identifying the images.

### **Medical Error Disclosure**

This course is designed for fourth year Anesthesia residents and ties in directly with another Anesthesia course. After assisting either R2s or R3s with one of a small subset of Anesthesia simulations, the R4 will be given a script detailing that it had been a specific error on their part that caused the complication that was managed in the preceding simulation. The R4 must then go in and disclose their error to an actor who is playing the role of a close family member of the patient.

### **Obstetric Bleeding**

This course teaches how to manage a bleeding emergency in labor and delivery. Opening with a spinal anesthetic for the woman in labor, this scenario proceeds to a management of uterine atony and acute post-partum hemorrhaging. Focus is given to administration of appropriate drugs, management of hypotension, identification of bleeding emergency and, ultimately, the necessity of a hysterectomy. This course is designed specifically for Anesthesia residents.

### **Venous Air Embolism**

This course is designed to teach proficiency with complex and invasive monitor systems, recognition of a venous air embolism as well as appropriate management and leadership of the OR



STUDENTS FROM THE SCHOOLS OF MEDICINE, NURSING AND PHARMACY WORK TOGETHER AS PART OF A PROJECT FUNDED BY THE JOSIAH MACY JR. FOUNDATION.

team during its treatment. Anesthesia residents will take over a case where the patient is already anesthetized, surgery is already underway, and then recognize and respond appropriately to the clinical presentation of the embolism.

### **Basics of Interventional Ultrasound**

This course teaches basic ultrasound principles with a specific focus on identification of different forms in a tissue block and accurate needle placement. An introductory lecture is given and followed by a practical session with a simulated block of tissue that has a number of foreign bodies of different shapes and material compositions. One of the foreign bodies uses a novel method of determining accurate 3D placement of a needle in the tissue block for interventional training. This course was designed to train Anesthesia residents and will be extended to other specialties (e.g. Surgery, OB/GYN, etc.) in the future.

### **Malignant Hyperthermia**

This course teaches identification and management of MH. Anesthesia residents must accurately diagnose the problem and perform steps unique to resolving a case of MH as well as appropriate management and leadership of the OR team during its treatment. This course is designed for Anesthesia residents.

## **Emergency Medicine**

### **Emergency Medicine Procedures & Resuscitation**

These courses teach the basics for performing a lumbar puncture and managing a few different ACLS situations, including PEA, bradycardia, asystole, and ventricular fibrillation. An instructional lecture is given prior to any of the practical portions and ACLS reference handouts are given to aid the ACLS scenarios that are run in the virtual OR. This course has been used to teach both medical students and Emergency Medicine residents.

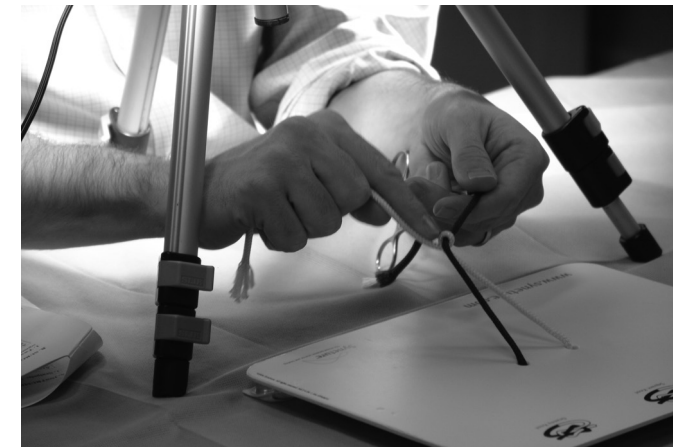
## **Internal Medicine**

### **Airway Skills**

This course teaches the basics of performing intubations and cricothyrotomies. The class starts with a short overview of the procedures including an introduction to the anatomy, tools used and technique, followed by hands on training. Intubation and cricothyrotomy mannequin simulators are used to provide lifelike anatomy and feel.

### **Lumbar Puncture**

This course teaches the basic principles and techniques behind a lumbar puncture. Students attend a lecture, review situations



in which a lumbar puncture is performed and then perform a lumbar puncture on a mannequin.

### **Thoracentesis**

This course teaches the basic principles and techniques behind thoracentesis. Students attend a lecture, review situations in which a thoracentesis is performed, and then perform the skill on a mannequin.

## **Medical Student Training**

### **Anesthesia Medical Student Skills Training**

This course is designed to teach basic airway principles and give an introduction to managing both a general anesthetic and code situation. Students begin the day with a lecture followed by instruction in airway management and an introduction to the operating room equipment and anesthesia machine. The students move into the OR where they are guided through a general anesthetic on a human patient simulator and then allowed to go through it again on their own. The final simulated anesthetic will also include a code situation that will have to be managed appropriately.

### **Basic OB/GYN Skills**

This course is designed for medical students beginning their OB/GYN clerkship. The class introduces them to instrumentation, anatomy, terminology and basic techniques and procedures including pelvic exam, standard vaginal delivery, and episiotomy.

### **Capstone 1**

ISIS provides procedural training in a variety of specialties for 2nd year medical students as part of the year-end practicum. Each grouping reviews essential skills learned throughout medical school training as they make their transition to wards.

## Capstone 2

Much like Capstone 1, ISIS provides procedural training in a variety of specialties for 4th year medical students as part of the year-end practicum. Students review essential skills learned throughout medical school and clinic based training as they make their transition to residency.

## Suturing and Wound Management for Medical Students

This course teaches the essential elements of suturing. The student will learn a variety of suturing techniques and practice on a variety of artificial tissues that provide realistic texture and suture support.

## SVT to VFib Simulation

This course provides instruction on how to manage unstable SVT and Ventricular Fibrillation events. Geared towards team training, a number of different groups have trained with this course, but it was initially designed as a review for medical students at the conclusion of their 4th year.

## Nursing

### Obstetrical Bleeding & Neonatal Resuscitation for Nursing

These courses separately teach team communication in management of an OB bleeding emergency, and appropriate techniques for neonatal resuscitation. The bleeding emergency takes place in the real ORs in labor and delivery where a large group of OR nurses are given different roles and focus on teamwork, communication, and following appropriate hospital pathways as they resolve the emergency. The neonatal resuscitation utilizes a mannequin that turns blue with hypoxia and will only revert once appropriate techniques are used.

## Ob/Gyn

### OB/GYN Dry Lab

This course is comprised of a number of procedural and skills based stations. Simulators are set up for practicing episiotomy repair, hysteroscopy, and urethral sling procedures. Additionally, laparoscopic workstations are set up that allow for practice on a wide variety of general surgical skills. This course is designed for OB/GYN residents.

### Hysteroscopy

This course is designed for OB/GYN residents and shows the proper use of a hysteroscope during a hysteroscopy. The class runs for four hours and is attended by residents in all four years of training.

## Shoulder Dystocia

This course demonstrates the proper way to deal with shoulder dystocia during delivery. The class is attended by residents in all four years of training.

## Ophthalmology

### Microsuturing Skills

This course teaches Ophthalmology residents skills and principles specific to microsuturing. Using a microscope the residents get to spend one-on-one time with the instructor to develop their skills.

## Pediatrics

### NRP Certification

This course provides instruction and (re)certification for Neonatal Resuscitation Program providers in the Northwest. Detailed instruction sessions are alternated with simulations that use a newborn mannequin and focus on both the resuscitation procedures and the equipment involved. This course is designed for NRP providers from all throughout the community.

### Neonatal Mock Resuscitation

This course provides instruction in the management of neonatal respiration and resuscitation. Designed for pediatric residents, the course provides detailed instruction sessions, alternated with simulations that use a newborn manikin and focus on both the resuscitation procedures and the equipment involved.

## Physician Assistant Training

### PA MEDEX Suture & Procedures Workshop

This course is for teaching the MEDEX Northwest division of Physician Assistant Studies students a variety of different suturing skills. They practice their suturing on foam tissue pads that were specifically designed to meet the needs of this course.

## Surgery

### CVES Courses

The CVES (Center for Videoendoscopic Surgery) lab trains residents in a number of laparoscopic and endoscopic procedures. The classes offered cover a variety of surgeries including laparoscopic chole procedures and Hernia repair. Courses in electro-surgery safety and wound closure are also offered. The CVES is a valuable resource available to ISIS under the leadership of Dr. Brant Oelschlager.

## Electrosurgery Safety for Residents

This course teaches the basic physics principles for practical safety in OR electrocautery and other operating equipment.

## Fundamentals of Laparoscopic Surgery

Using the laparoscopic trainers mentioned above, students do a wide variety of exercises ranging from using the mirror trainers, which help the user with spatial recognition, instrument dexterity and improved motor control, to advanced computer simulators which simulate surgical procedures.

## Laparoscopic Cholecystectomy

This course covers work-up and indications for cholecystectomy, surgical anatomy, routine versus selective cholangiography (interpretation), risk areas and pitfalls, recovery and long term outcome, and troubleshooting.

## Suturing and Wound Management for Surgery Residents

This course teaches the essential elements of surgical suturing. The student will learn a variety of suturing techniques and practice on a variety of artificial tissues that provide realistic texture and suture support.

## Wound Vacuum Principles

This course, designed for R1s, teaches the principles of wound management with vacuum technology.

## Urology

### MIMIC DaVinci Simulation

Designed for residents, fellows and attendings, this course provides training on the virtual reality MIMIC DaVinci robot simulator with haptic feedback.

### Suprapubic Catheter Placement

This course covers all of the steps involved in the insertion of a suprapubic catheter. Urological residents fill out pre- and post-tests around a lecture, and run through the placement of a suprapubic tube on a simulator that inserts into the lower abdomen of a full patient simulator.

## Interdisciplinary Offerings

### Central Venous Catheter Placement

This course teaches the basic principles and techniques for placing a central venous line into a patient. Students first complete an E-Learning cognitive training module and training with a mannequin before attending the certification testing

session. At each skills session, learners review situations in which a central line would be used, are instructed in ultrasound use and finally, practice central line placement using the Simulab's Central LineMan™. UWMC has mandated CVC certification for all incoming residents placing lines in the hospital by 2010.

## Code Blue

Medical Emergency Response Teams will be taught principles in interdisciplinary team communication and function in simulated full scale patient emergency scenarios.

## Team Training

This course teaches the principles of crew resource management during a critical event in any medical setting. The class focuses on the development of communication skills, the prioritization of tasks, leadership skills, and task assignments during the critical event. The class is taught with at least two, but preferably more, disciplines present so as to create a more realistic interaction environment. All are done in the Virtual Operating Room using the SimMan and/or the METI HPS.

## Future

Major efforts for this coming year include:

1. The submission of at least four new curricula to the AAMC MedEdPortal.
2. The further development and implementation of web-based E-learning software for curriculum development.
3. Strengthening of infrastructure for collecting and maintaining course evaluation data, including completion and implementation of a web-based data collection tool.
4. Developing (e-learning modules) Simulation 101 course for educators new to simulation across the WWAMI region.

Under Dr. Kim's leadership, the IPEP committee will continue to provide guidance and support for faculty wishing to develop educational materials with ISIS. There will be added emphasis on identifying and developing interprofessional curriculum that can serve multiple specialties as ISIS continues to expand upon its mission to provide standardized simulation education both locally and nationally.

With faculty development opportunities, curricula support, and formalization of faculty commitments to ISIS, the IPEP committee continues to be a valuable resource for faculty at all levels.

# Research and Development Committee



**Mika Sinanan, M.D., Ph. D.**  
Chair, ISIS Research and Development Committee

Professor, Surgery

## Overview

The ISIS Research and Development Committee works in collaboration with the ISIS IPEP and Patient Safety and Quality Committees, the Biorobotics Lab (BRL), and the Human Interface Technology lab (HIT Lab). The R&D Committee includes over 30 members from a variety of departments and programs at the University of Washington and is headed by Dr. Mika Sinanan, M.D., Ph.D., Chair, ISIS R&D and President of UW Physicians.

## Mission

The Research and Development Committee will:

1. Advise the ISIS Executive Committee on research, validation and development that will implement ISIS strategic plans.
2. Oversee research and development activities within ISIS.
3. Develop research proposals for ISIS.
4. Interface/partner with industry and others to establish research and development platforms.

The R&D Committee works on a wide array of projects, each project falling into one of four categories: 1) simulator and curriculum validation studies; 2) skills and technology assessment; 3) surgical robotics; or 4) training via telemedicine and virtual environments.

## Simulator and Curriculum Validation Studies

### Disclosure of Simulated Adverse Events in Obstetrics

PIs: Dr. Thomas Benedetti, Ms. Carolyn Prouty, Dr. Tom Gallagher, Dr. Leslie Carranza, Dr. Sara Kim, Dr. Karen Souter, Dr. Sarah Waller  
*STATUS: Ongoing*

### Face and Content Validity of a Mannequin Simulator for Suprapubic Catheter Placement

PI: Dr. Thomas Lendvay  
*STATUS: Ongoing*

### ISIS Educational Database

PIs: Dr. Brian Ross  
*STATUS: Ongoing*

### Skills Acquisition in Single Incision Laparoscopic Surgery (SILS)

PIs: Dr. Andrew Wright, Dr. Carlos Pellegrini, Dr. Renato Soares, Dr. Saurabh Khandelwal, Dr. Brant Oelschlager, Dr. Roger Tatum  
*STATUS: Ongoing*

### Survey for Medical Student Skills Curriculum

PIs: Dr. Brian Ross, Dr. Sara Kim, Dr. Julia Metzner  
*STATUS: Ongoing*

### Survey for Resident interest in Global Health Rotations

PI: Dr. Ryan Jense  
*STATUS: Ongoing*

### Transfer of Simulation Based Skills to Patients

PIs: Dr. Julia Metzner, Dr. Brian Ross, Dr. Stefan Lombaard, Dr. Todd Cannon, Dr. Karen Souter, Dr. Sally Barlow, Dr. Alec Rooke, Dr. Chris Kent, Dr. Krishna Natrajan  
*STATUS: Ongoing*

### Validation Study of Simpraxis Laparoscopic Cholecystectomy Surgical Trainer

PIs: Dr. Mika Sinanan, Dr. Brian Ross, Dr. Andrew Wright, Dr. Sara Kim  
*STATUS: Ongoing*

## Skills and Technology Assessment

### Feasibility of Web-based Assessment of Physicians' Communication Skills: A Pilot Study

PIs: Dr. Sara Kim, Dr. Tom Gallagher, Dr. Doug Brock, Ms. Carolyn Prouty, Ms. Odawni Palmer, Dr. Alan Gojdics, Dr. Eric Holmboe, Dr. Brian Hess, Ms. Kate Ross, Dr. Rebecca Lipner  
*STATUS: Ongoing*

### High-Definition Video-endoscopy: An Assessment of Image Characteristics and Validated Laparoscopic Skills Curriculum Performance

PIs: Dr. Michael Wu, Mr. Paul Doetsch  
*STATUS: Pilot Completed, Second phase: In Development*

## OB Emergency Team Communication and Community Management

PIs: Dr. Brian Ross, Dr. Thomas Benedetti, Ms. Kathy O'Connell, Dr. Gene Peterson  
*STATUS: Ongoing*

## Validation Assessment metrics for Basic Surgical Skills

PIs: Dr. Andrew Wright, Dr. Sara Kim, Dr. Karen Horvath, Dr. Lisa McIntyre, Dr. Kristine Calhoun, Dr. Aaron Jensen, Mr. Samuel Park  
*STATUS: Ongoing*

## Virtual Reality Warm-Up for Robotic Surgery Skills Training

PIs: Dr. Thomas Lendvay, Dr. Rick Satava, Ms. Monkia Kasina, Dr. Timothy Brand  
*STATUS: Ongoing*



THE CENTRAL VENOUS CATHETER PROJECT IS ONE OF MANY ISIS RESEARCH AND DEVELOPMENT ENDEAVORS.

## Training via Telemedicine and Virtual Environments

### Telemedicine Xbox Project in Conjunction with Microsoft Health Sciences (Technology Development):

PI: Dr. Brian Ross

STATUS: *In Development*

### Virtual Worlds “Second Life” Project:

PI: Dr. Brian Ross

STATUS: *Ongoing*

## Project Highlight: Simpraxis Lap Cholecystectomy Validation

Historically and by tradition, surgical training has followed an apprenticeship approach where surgical trainees are placed on a clinical service and work with faculty. Junior residents and senior residents, together with medical students form one of several teams that assist the attending surgeon in outpatient clinic evaluation of patients, then admit, provide surgical care, and provide both inpatient and outpatient aftercare. Depending on the nature of the clinical service, the residents learn focused aspects of surgical treatment within the specialty focus of the service, for example, dealing with cancer patients requiring surgical treatment on the surgical oncology service.

During the operative portion of this training, surgical trainees learn while observing, assisting, and then performing portions of procedures. Through all parts of this process, they are under supervision by an attending surgeon. The basis of training is actual clinical care on real patients. Residents graduate to greater responsibility as they ascend the ranks of surgical residency and gain increased experience and skills, but their training is based on the availability of clinical situations appropriate for their skill and experience level. This apprenticeship model of training derives from a landmark Carnegie Foundation report by Abraham Flexner directed at Medical Education in the United States and Canada. In 1910, this was a major improvement in medical education but the model has not changed in the last 98 years.

Our current era of medical education is on the verge of a radical restructuring. Societal pressure has focused attention to minimize medical errors and assure requisite skill and competency for trainees before they treat patients. There is also wide acknowledgement that a learner-based education must

necessarily separate much of the educational experience from direct clinical encounters to give trainees a chance to learn at their own pace, experiment, and to fail without consequence beyond the learning experience. Coincident with these national trends has been the rise in desktop computing power that offers a training platform that satisfies many of the requirements for learner-based training while also objectively measuring performance and offering immediate feedback. In this study, we propose to study the utility of such a trainer for a specific surgical procedure, laparoscopic cholecystectomy.

The SimPraxis Laparoscopic Cholecystectomy Trainer is a commercial product created at the University of Washington in a partnership between the UW Institute for Simulation and Interprofessional Studies (ISIS) and a commercial educational software company, Red Llama. The technical procedure for laparoscopic cholecystectomy was initially deconstructed into component parts and used to develop a curriculum structure, which was then populated with anatomic drawings, video screen captures from blinded clinical training video, and video segments. In critical sections where there are several accepted technical methods for carrying out the procedure, each method is illustrated. Patient consent was obtained for use of blinded operative video captured from the videoendoscopic camera. Text and audio tracks support the training which includes built in metrics for section completion and quizzes to test the content knowledge of the trainee as they proceed through the training program.

Laparoscopic cholecystectomy is among the most common of general surgical procedures and is currently the standard of care for symptomatic gallstone disease. In surgical resident training programs, residents in their late first or second year of training would routinely start participating in the care of these patients in the operating room. Laparoscopic cholecystectomy is the training platform upon which most resident acquire their laparoscopic skills. The study utilizes residents to validate training through computerized simulation.

The goal of this study is to determine if a highly granular, that is, very detailed technical surgical training program directed at a single operation, improves the efficiency and effectiveness of a resident performing parts of a laparoscopic cholecystectomy.

## Patient Safety and Quality Committee



Thomas Benedetti, M.D., M.H.A.  
Chair, ISIS Patient Safety and Quality Committee

Professor, OB/GYN

### Overview

The Patient Safety and Quality Committee (PSQC) was formed under a 2008 re-organization in response to an expanding ISIS mission. The committee, under the direction of Dr. Thomas Benedetti, M.D., M.H.A., and Gene Peterson, M.D., is tied to the mission of the UW Medicine Enterprise of improve quality of care and patient safety. The PSQC serves as an intermediary between the ISIS Board and the affiliated hospital's leadership, serving as its operational arm to ensure that curriculum and training developed through ISIS is consistent the needs of the UW Medicine hospitals.

### Mission

The Patient Safety and Quality Committee will identify and prioritize patient safety opportunities within UW Medicine in which ISIS can provide leadership and operational support. Areas currently under consideration or under various stages of implementation include :

#### TeamSTEPPS Training

ISIS looks forward to becoming a National TeamSTEPPS training Center in the fall of 2009. As the American Institute of Research's (AIR) only West Coast training facility, ISIS will provide TeamSTEPPS Master Trainer Courses for UW Enterprise hospital and medical personnel as well as healthcare providers across the United States. TeamSTEPPS principles and techniques are currently being used in Labor and Delivery, and the Emergency Room of Harborview Medical Center. In addition plans are underway to launch TeamSTEPPS training in the UW ED, OB/GYN Clinic, and Operating Rooms.

### In-Situ Training

The Patient Safety and Quality Committee has encouraged the hospitals to engage in simulation based training at the 'point of care' or In-situ training. In-situ training at University of Washington Medical Center lessens the gap between practice and reality, provides increased authenticity of scenario based training, as well as allows the hospitals and service areas to evaluate their practice based systems. With each 'In-situ' training session that has been held at the UW Medical Center, major systems errors were also identified. In-situ training of Code Blue medical emergencies have been conducted on several occasions at the University of Washington Medical Center. Plans have been made to make these training sessions a regular part of the operation of the center. Additional Obstetric emergencies training sessions are also in the planning phase and are expected to be implemented after the beginning of the new year. Other services are being evaluated for opportunities for in-situ simulation training opportunities.

This has been an exciting year for ISIS as it has finally realizing its vision of moving training from the center out into the organizations that support it. Conversations are continuing with the Quality Improvement and Patient Safety organizations of the affiliated UW hospitals to ensure ISIS continues to address the training and safety needs of these organizations.



IN-SITU TRAINING

# Development

## Overview

Securing long-term funding for ISIS is an ongoing effort. ISIS has been fortunate to have the Dean assign an advancement individual, who in turn works with a group from the School of Medicine Advancement office to assist in this effort. The Advancement team, headed by Sarah Nicholson, Assistant Vice President of Advancement, includes Melody Burson, Director for Philanthropy. This team meets regularly with ISIS staff to provide assistance with fundraising and partnership strategies and with particular efforts and events.



UW FOUNDERS' WEEKEND HANDS-ON EXPERIENCE.

## Activities

### UW Founders' Weekend

ISIS remains a top initiative of the University of Washington and the School of Medicine. In August 2008, ISIS was invited to participate in the 2008 Founders' Weekend. The event, held at the Alderbrook Resort and Spa in Union, WA, highlighted exciting advances at the University of Washington for some of the University's top supporters. The hands-on presentation had audience participants follow a simulated patient from diagnosis through treatment.

### Congressional Staff Visit

The Office of Federal Relations sponsored an introduction to ISIS for staff members of Congressional Representatives from around the WWAMI region. The presentation focused on patient safety and the exceptional medical education provided at the University of Washington.

### Ninth and Jefferson Open House

While the ISIS-HMC facility is still under construction, ISIS celebrated the Ribbon Cutting of the newly completed Ninth and Jefferson Building at Harborview Medical Center. The

new facility will house the 8,000 square foot ISIS-HMC space. The ceremony showcased ISIS and other tenants of Ninth and Jefferson in a two-day Open House for faculty, staff, government and community leaders.

### Gift and Grant Activity Update

In FY09 a total of \$6080 was donated to ISIS, with the average donation at \$234.

In September of 2008, ISIS received its first Endowed Fund, the Andrea G. and William M. Pelter, M.D., Endowed Fund in the amount of \$100,000.

In November of 2008, ISIS received a \$250,000 gift from the William Randolph Hearst Foundation.

In December 2008, ISIS Partnered with the School of Nursing to receive a 3-year \$990,000 private grant from the Josiah Macy Foundation.

In addition, ISIS received over \$279,700 in the form of federal grant funds, and over \$250,000 in the form of equipment and other donations between FY09. ISIS is expected to receive over \$2.2 million in the form of equipment and other donations in FY10 from supporting partners.

ISIS strives to enhance academic and community relations and has hosted a number of tours, seminars and other events in this capacity. Highlights of these activities are below:

## ACS

As one of the first Level I Comprehensive Accredited Education Institutes through the American College of Surgeons, ISIS was privileged to host the first AEI Post-Graduate Course at its UWMC facility in September 2008. The well attended (92 members), two-day course included overview and discussion of the development of a successful simulation education institute.

With the great success of the first AEI Post Graduate Course, ISIS is honored to be hosting the 2nd annual meeting this fall.

## Collaboration

Simulation has also been a joint effort at the University, as ISIS and the School of Nursing have collaborated on combined training scenarios for nursing students, medical students, and residents. In addition, ISIS has collaborated with the Schools of



JUDY MALENG AND ISIS TECHNICIAN, SAMUEL PARK AT THE HMC NINTH AND JEFFERSON OPEN HOUSE



ISIS IS PROUD TO PROVIDE COMMUNITY OUTREACH COURSES TO AREA SCHOOLS AND EDUCATIONAL PROGRAMS.

Nursing and Pharmacy to develop grant proposals submitted in 2008 to the Josiah Macy Jr. and Hearst Foundations.

In 2008, ISIS became home to Seattle Children's Neonatal Resuscitation Certification Program. Under the direction of Seattle Children's personnel, the NRP provider and recertification courses are offered on a bi-monthly basis to healthcare providers throughout the region. The NRP course marks the first of what we anticipate to become many Seattle Children's sponsored courses at ISIS.

## Website

The new ISIS website provides further connection between the University and its community partners. The website highlights various events held throughout the year. Contact information, course schedule, and product news and updates are available to the public, in addition to research descriptions, publications and photos. The website is continuously updated and will soon host a user-friendly web-based database for resource management designed to meet the specific needs of ISIS.

## Individuals & Academics

ISIS regularly conducts tours for visiting national and international academics and VIPs. Some of the FY09 visitors included:

- Aga Khan University
- American Association of Healthcare Journalists
- David and Nancy Auth
- Becky Bunderson, Boise State Sim Center
- Andy DeMott, Defense Specialist, Congressman Norm Dicks
- Congressman Norm Dicks, District 6
- Scott Flora, Covidien
- Alan Frazier, Frazier Healthcare
- Dr. Howard Grimes, WSU VP for Research, Graduate School)
- HMC Community Internship Program
- David Levesque, Sonosite
- Jeanine Martin, Microsoft
- Congressman Jim McDermott, District 7
- Namibia Delegates
- Physicians Insurance
- Congressman Adam Smith, District 9
- George Thibault, Macy Foundation



UW GLOBAL HEALTH I-TECH TOUR.

- University of Gondor
- USC Medical Students
- UW MHA Student Tour
- UW Nursing Faculty Workshop
- UW School of Medicine Resident Applicants
- UW Teaching Scholars Program
- WSU Sleep and Performance Research Center
- WWAMI Congressional Staffers Federal Relations Tour

- Summit K-12
- Upward Bound Program, (Moscow, ID)
- UW Alpha Epsilon Delta
- UW Bioengineering Student Tour
- UW Gear Up Program
- UW Nursing Summer Camp
- UW ROTC Program
- UW Summer Medical Dental Education Program
- UW UDOC Program
- UW Women in Science

## Community Outreach

ISIS leaders recognize and appreciate the need for science education within youth and school programs. ISIS works closely with the University of Washington's News and Community Relations to schedule a monthly tour to various schools and educational programs. The educational visits for FY09 included:

- Bellarmine Preparatory High School
- Central Kitsap High School
- Clove Park High School
- Franklin High School
- Immaculate Conception School
- Nathan Hale High School
- Pauling Academy (Portland, OR)

## Media and Events

ISIS often receives media coverage and hosts various events.

Media and events included:

- Dawg Daze (September 2008)
- KPLU Program (January 2009)
- Seattle P-I Article (January 2009)
- UW Website Story (April 2009)
- UW Medicine Magazine (May 2009)
- Journal Newspaper Article (May 2009)
- UW Health Science Video (May 2009)

## Publications and Presentations

### Accepted Abstracts and Manuscripts

ISIS faculty continue to generate scholarly products as directly related to ISIS curricular activities. Samples of FY09 publications and presentations are listed below:

Garcia, P.; Rosen, J.; Kapoor, C.; Noakes, M.; Elbert, G.; Treat, M.; Ganous, T.; Hanson, M.; Manak, J.; Hasser, C.; Rohler, D.; Satava, R. "Trauma pod: a semi-automated telerobotic surgical system." *Int J Med Robot* 5(2):136-46. June 2009.

Wu, M. C. "Making the World Smaller: Teleconferencing Technologies in Medical Education." *Unite for Sight 6th Annual Global Health Conference*. Yale University. New Haven, CT. 18 April 2009.

Jensen, A.R.; Wright, A.S.; Levy, A.E.; McIntyre, L.K.; Foy, H.M.; Pellegrini, C.A.; Horvath, K.D.; Anastakis, D.J. "Acquiring Basic Surgical Skills: Is a Faculty Mentor Really Needed?" *Am J Surg* 197(1):82-88. 2009.

Kahol, K.; Satava, R.M.; Ferrara, J.; Smith, M.L. "Effect of short-term pretrial practice on surgical proficiency in simulated environments: a randomized trial of the 'preoperative warm-up' effect." *J Am Coll Surg* 208(2):255-68. February 2009.

Gallagher, A.G.; Al-Akash, M.; Seymour, N.E.; Satava, R.M. "An ergonomic analysis of the effects of camera rotation on laparoscopic performance." *Surg Endosc*. 2008 Dec 6.

Koop, C.E.; Mosher, R.; Kun, L.; Geiling, J.; Grigg, E.; Long, S.; Macedonia, C.; Merrell, R.C.; Satava, R.; Rosen, J.M. "Future delivery of health care: cybercare." *IEEE Eng Med Biol Mag* 27(6):29-38. November-December 2008.

Satava, R.M. "Advanced technologies and the future of medicine and surgery." *Yonsei Med J* 31;49(6):873-8. December 2008.

Johnson, K.A.; Pellegrini, C.A.; Sachdeva, A.K. "The critical role of accreditation in establishing the ACS education institutes to advance patient safety through simulation." *J Gastrointest Surg* 12(2):207-209. 2008.

Jensen, A.R.; Wright, A.S.; Lance, A.; O'Brien, K. Pratt, C. Anastakis, D.J.; Pellegrini, C.A.; Horvath, K.D. "The emotional intelligence profile of surgical residents: A descriptive study." *Am J Surg* 195(1):5-10. 2008.

Jensen, A.R.; Wright, A.S.; McIntyre, L.K.; Levy, A.E.; Foy, H.M.; Anastakis, D.J.; Pellegrini, C.A.; Horvath, K.D. "Laboratory-based instruction of skin closure and bowel anastomosis for surgical residents." *Arch Surg* 143(9):852-859. 2008.

Sachdeva, A.K.; Pellegrini, C.A.; Johnson, K.A. "Support for simulation-based surgical education through American College of Surgeons-Accredited education institutes." *World J Surg* 32(2):196-207. 2008.

### Presentations

• VI Jornadas Argentinas e Internacionales de Coloproctología organized by the Asociación Argentina de Coloproctología (SACP), Iguazú, Argentina (June 2009) Dr. Richard Satava "Role of Medical Simulation in the Training of Colorectal Surgery"

• AB Medica, Milan, Italy. (June 2009) Dr. Mika Sinanan "Future of Healthcare: The Evolution of Hospitals Worldwide in the Next 50 Years"

• AMPLIFY 2009. Sydney, Australia, (June 2009) Dr. Richard Satava "Doctor, Please Grow Me a New Liver"

• Annual Cybertherapy Conference. Lake Maggiore, Italy. (June 2009) Dr. Richard Satava "Advances in Technology for Cybertherapy"

• International Congress of the European Association for Endoscopic Surgery. Prague, Czech Republic. (June 2009) Dr. Richard Satava "Beyond MIIS – Other Technologies that Revolutionize Surgery"

• University of Washington Nursing Faculty Workshop, Seattle, WA, (June 2009), Dr. Brian Ross "ISIS, Simulation in Medical Education"

• University of Washington Dean's Circle Event (June 2009), Dr. Brian Ross "Institute for Simulation and Interprofessional Studies"

• American Society of Colon and Rectal Surgeons, Fort Lauderdale, FL (May 2009) Dr. Mika Sinanan "Integration of Simulation and Patient Safety Initiatives"

• Advances in Anesthesiology and Critical Care Symposium, Oklahoma City, OK, (April 2009) Dr. Brian Ross "Seven Steps to a Successful Simulation Program"

• American College of Surgeons Accredited Education Institute Symposium, Chicago, IL, (March 2009) Dr. Mika Sinanan, Dr. Sara Kim "R&D Symposium on Simulation Based Training," "Role of R&D in Simulation Based Training," "Methodologies for Establishing Validity in Surgical Simulation Studies"

- The Airway Course” Huntington Beach, CA, (February 2008, 2009), Dr. Brian Ross  
     *“Airway Management”*
- Kaiser Permanente Eastern Regional Conference Orlando, FL, (January 2009) Dr. Brian Ross  
     *“Seven Steps to a Successful Simulation Program”*
- Society of Simulation in Healthcare Annual Conference (January 2007, 2008, 2009) Dr. Brian Ross
  - *“Faculty Development in Simulation Education” (2008),*
  - *Using Standardized Patients for Training and Evaluation of Anesthesiology Residents’ Skills in the Disclosure of Unanticipated Outcome” (2008),*
  - *Optimizing Anesthesiology Simulation Training” (2008),*  
     *“A Lifecycle of ISIS Curriculum” (2008)*
- Surgical Education Symposium, Springfield, MA, (Nov 2008)  
     *“Training the Next Generation of Minimally Invasive Surgeons”*
- Kaiser Permanente Western Regional Conference San Diego, CA (October 2008) Dr. Brian Ross  
     *“Seven Steps to a Successful Simulation Program”*
- American College of Surgeons, Accredited Education Institutes Post Graduate Course, (September 2008) Dr. Mika Sinanan, Dr. Sara Kim, Dr. Brian Ross, Dr. Richard Satava  
     *“Curriculum Design and Development,” “Faculty Development and Recruitment,” “Space, Design, and Utilization,” New Research and Development Opportunities,” “Research and Innovation,” “Intro to ISIS and ISIS Courses”*
- University of Washington Founder’s Day Event, (August 2008), Dr. Brian Ross  
     *“Institute for Simulation and Interprofessional Studies”*





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