

# 2010-2011 Annual Report



INSTITUTE FOR SIMULATION AND INTERPROFESSIONAL STUDIES  
AT THE UNIVERSITY OF WASHINGTON

<http://isis.washington.edu>



American Society of Anesthesiologists  
**Endorsed Program**  
Simulation Education Network

# Highlights from Sixth Year: July 1, 2010 – June 30, 2011

2010

- July** CVC Training and TeamSTEPPS training for all incoming residents
- August** Michelle Brennan, Legislative Aide to Congressman Dave Reichert, visits ISIS
- September** ISIS participates in UW Dawg Daze
- October** ISIS hosts Josh Crosson, Legislative Aide to Congressman Adam Smith, District 9  
National TeamSTEPPS Master Training Course  
ISIS Annual Board Meeting
- November** Global Health I-Tech tours ISIS  
ISIS sponsors tour for Lesley Watson and Horizon House
- December** HMC Community Internship Program  
John Nance and Kathy Bartholomew tour ISIS

2011

- January** National TeamSTEPPS Master Training Session  
ISIS hosts UW Teaching Scholars course and tour
- February** ISIS presents at Mini Medical School
- March** ISIS participates in Mini Medical School  
ISIS presents at Macy Interprofessional Training Day For Disclosure  
ISIS participates in event for Advancing Science in America Foundation (ARCS Event)  
National TeamSTEPPS Master Training Course
- April** National TeamSTEPPS Master Training Course
- May** National TeamSTEPPS Master Training Course
- June** HMC Community Internship Program  
ISIS holds UW's largest Interprofessional Healthcare training session (Macy Project Pilot Study)  
ISIS hosts tour for Northwest Hospital Leadership  
ACRE (Advisory Committee on Real Estate) tours ISIS

The Institute for Simulation and Interprofessional Studies  
University of Washington

## Annual Report 2010 - 2011



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American Society of Anesthesiologists  
**Endorsed Program**  
Simulation Education Network



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

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## 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

Since its inception, the Institute for Simulation and Interprofessional Studies (ISIS) has pioneered simulation training in healthcare, with the overarching mission of improving health through patient safety in a cost-effective manner. Within safe and realistic learning environments, ISIS trains healthcare providers to be effective, efficient clinicians and adept communicators within teams. ISIS addresses, therefore, the need to train professionals with not only medical and technical knowledge, but also with interpersonal skills and an interprofessional mindset. This combination of knowledge, skills and outlook is required for successfully training healthcare providers in increasingly complex healthcare of the 21st Century.

ISIS was established in response to the need for a centralized interdisciplinary center of simulation expertise at the University of Washington. Dr. Paul Ramsey, the Dean of the School of Medicine, approved the business plan defining ISIS in 2005, and through his support, established the operational infrastructure of ISIS. In February 2006, ISIS was officially recognized as an Institute by the University of Washington School of Medicine. Since then, ISIS has gained the support of both hospital and School of Medicine leadership and has opened sites at both University of Washington and Harborview Medical Centers.

Originally located only at the University of Washington Medical Center, ISIS expanded in 2010 to a second training site at Harborview Medical Center's Ninth and Jefferson Building. In its first year of operation, this second facility has dramatically increased ISIS' breadth. Over 31,500 learner hours occurred at ISIS HMC in Fiscal Year 2011, with trainees from departments including Emergency Medicine, Neurological Surgery,

Orthopaedics, Otolaryngology, Vascular Surgery, and Nursing. ISIS at Harborview also provides training through Clinical Education and the Community Training Center to healthcare providers throughout the region. The facility's state-of-the-art resources allow training for wet-lab tissue and cadaveric courses, as well as dry-lab simulations aimed at enhancing skills proficiency, decision-making, and team communication.

Through a wide array of simulation training and technologies, ISIS offers educational opportunities for students, residents, and faculty across numerous departments and specialties. In addition to the Schools of Medicine, Nursing, Pharmacy, and the Biorobotics Laboratory, ISIS connects over 30 departments and programs throughout UW Medicine. This diversity provides the University of Washington with a truly interprofessional simulation program.

Along with providing training opportunities, ISIS conducts several ongoing research projects (over \$4M). In 2009, ISIS received Congressional Grant Funding (over \$3.8M), and in 2010, ISIS received optional continuation funding for these projects. This project partners the University of Washington with Madigan Army Medical Center in the development of new and creative ventures for distributed skills training, individual healthcare provider training programs, and team training with continuity of care.

UW Medicine's 'Patients Are First Initiative' provides a valuable designation for ceaseless efforts to provide the highest quality care to every patient every time and to document this success accordingly. By improving medical training, ISIS contributes to the implementation of 'Patients Are First Initiative.' The foundation of putting patients first is in the education and training of UW Medicine healthcare providers, before they begin working with patients.

Through procedural and interdisciplinary trainings and ongoing research projects, ISIS remains at the forefront of simulation training in healthcare. Consequently, ISIS serves as one of the many venues through which UW Medicine accomplishes its mission of excellence in patient care, teaching, and research.

Sincerely,

A handwritten signature in black ink, appearing to read 'Pellegrini'. The signature is stylized and written in cursive.

Carlos Pellegrini, MD, FACS, FRCSI (Hon.)

## Letter from the Executive Director



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

Professor, Anesthesiology  
Adjunct Professor,  
Medical Education and  
Bioinformatics

Over the years, change has become a common occurrence in ISIS and it has never been more apparent than in the past year. The growth of ISIS is evident not only in its expanded course offerings and focus on interprofessional education and team communication, but in hospital presence and facility improvements. Following last year's expansion to the new ISIS-HMC facility, training efforts have increased tremendously. With two state-of-the-art facilities, including a fully equipped cadaveric training space, ISIS is able to accommodate a multitude of new hands-on training courses.

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 most evident in the area of interprofessional teamwork and communication. Both the Institute of Medicine and the Joint Commission have reported that over 70% of hospital associated deaths and sentinel events were associated with communication errors. As a result of these findings, ISIS has dramatically increased its curriculum development efforts in the area of interprofessional and team training.

In 2008, ISIS received grants from the Josiah Macy Jr. and Hearst Foundations (over \$1 million) to develop an interprofessional curriculum for students based on the TeamSTEPPS models of effective communication. Since this time, ISIS and the Schools of Medicine, Nursing, Pharmacy and MEDEX program have worked to develop interprofessional training curriculum for students within these disciplines. This past summer, and for the second year in a row, ISIS and team hosted two of the University of Washington's largest immersive interprofessional events to date. The simulation experiences included one focused on medical error disclosure, and the other focused on interprofessional team work. The two sessions reached over 700 learners from the Schools of Medicine, Nursing, Pharmacy and MEDEX programs.

In conjunction with leadership from the University of Washington Medical Center and Harborview Medical Center,

ISIS has provided training and implementation support for Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) across UW Medicine entities. The program, developed by the Department of Defense and the Agency for Healthcare Research & Quality (AHRQ), targets patient outcomes by improving communication and teamwork skills among healthcare professionals.

In 2009, ISIS and the University of Washington were named by the American Institute of Research (AIR) through AHRQ as a National TeamSTEPPS Training Center. Serving as one of only five national centers, and the only center on the West Coast, ISIS has since trained 337 TeamSTEPPS Master Trainers from 14 national and international hospitals, clinics and healthcare programs over the past two years.

ISIS continues to advance in the development of new curricula, 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.

Of particular interest is the role that ISIS has played in establishing and maturing a regional simulation collaborative with simulation centers in our region. The Pacific Northwest Healthcare Simulation Collaborative (PNWHSC) shares expertise, techniques, tools and resources in simulation training. The collaborative is comprised of educators and stakeholders from schools of nursing and medicine, hospitals, and industry with the aim to integrate and expand simulation training and technology into healthcare education. ISIS was a founding member of this organization, and faculty and staff hold key positions on the PNWHSC Executive Board.

Today, PNWHSC membership includes 37 simulation centers and industry partners. With 117 members, the collaborative meets bi-monthly for educational and informational seminars. In the coming year, PNWHSC will host a collaborative conference for simulation partners throughout the region.

On a personal note, one of the services that ISIS shares with the UW Health System is its commitment to community outreach. For me, nothing is more satisfying than seeing eager young students from area middle and high schools experience the ISIS program and become excited about a career in healthcare. This past year, ISIS hosted over 259 students from regional science and healthcare classes.

Entering its seventh year, the Institute for Simulation and Interprofessional Studies continues to assert itself as a standard of simulation education.

With Best Wishes,

A handwritten signature in black ink that reads "Brian K. Ross MD". The signature is written in a cursive, slightly stylized font.

Brian K. Ross, PhD, MD.

# Executive Summary

## Mission Statement

The primary goal of the Institute for Simulation and Interprofessional Studies (ISIS) is to provide leadership in the use of simulation technologies to improve the quality of healthcare 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 patient management skills, and as a simulation resource center for the UW Medicine Health System by providing simulation expertise and managing simulation assets. In FY11, ISIS completed over 1,268 training activities, reaching 8,928 participants who logged a total of 43,995 learner hours (totaling 72,431 learner hours since 2006).

UWMC			
Type of Activity	# of Activities	Total Learners	Learner Hours
<b>Total Courses</b>	<b>684</b>	<b>2,267</b>	<b>8,962</b>
CVC Testing	195	195	98
EVATS	258	258	990
HMC			
Type of Activity	# of Activities	Total Learners	Learner Hours
<b>Total Courses</b>	<b>373</b>	<b>5,205</b>	<b>31,507</b>
CVC Testing	81	81	41
Clinical Education	52	1,075	9,557
Community Training Center	41	775	6,317
All ISIS Facility Activities			
Type of Activity	# of Activities	Total Learners	Learner Hours
<b>Total Courses</b>	<b>1,063</b>	<b>7,686</b>	<b>42,272</b>
CVC Testing	276	276	138
Clinical Education	52	1,075	9,557
Community Training Center	43	806	6,577
EVATS	258	258	990
<b>Curriculum Development</b>	<b>3</b>	<b>3</b>	<b>11</b>
<b>Demos/Outreach/Tours</b>	<b>56</b>	<b>1,093</b>	<b>1,487</b>
<b>Research</b>	<b>29</b>	<b>29</b>	<b>75</b>
<b>TOTAL</b>	<b>1,268</b>	<b>8,928</b>	<b>43,995</b>

## Learners

### Resident and Physician Training

The following departments and divisions conduct skills-based courses in ISIS for resident and physician training: Anesthesiology, Cardiothoracic Surgery, General Surgery, Emergency Medicine, Family Medicine, Internal Medicine-Cardiology, Internal Medicine- Gastroenterology, Internal Medicine-Pulmonary and Critical Care, Internal Medicine-Nephrology, Obstetrics and Gynecology, Ophthalmology, Orthopaedics and Sports Medicine, Otolaryngology, Pathology, Pediatrics, Neonatology, Neurological Surgery, Plastic Surgery, Radiology, Urology and Vascular Surgery. In addition, UW Medicine faculty and other practicing physicians who wish to refine skills or learn new ones can access ISIS resources 24/7.

In 2010, ISIS became a certified Center of Excellence for the American Society of Anesthesiology, thus enabling ISIS to provide Maintenance of Certification for Anesthesiology (MOCA) credited courses. Physicians requiring recertification by the American Board of Anesthesiology (ABA) may attend one of ISIS' nationally publicized courses to meet the needs of their ABA requirements.

### Medical Student Training

During clinical rotations, medical students participate in ISIS skills training sessions such as: Introduction to Anesthesiology, OB/GYN Dry Lab, Surgical Skills, and Internal Medicine Basic Airway courses. Expanding on this model, in the fall of 2010, ISIS began offering healthcare professionals the opportunity to participate in monthly interprofessional team training courses open to students and new graduates from medicine, pharmacy, nursing, and MEDEX programs.

In addition to clerkship based training sessions, students at the end of their 2<sup>nd</sup> and 4<sup>th</sup> years of training participate in "Transition to Clerkship" and "Transition to Residency" capstone classes, which are comprised of a combination of hands-on skill stations and interprofessional team training sessions. In 2011, the Schools of Nursing, Pharmacy and MEDEX programs partnered with ISIS to host a multi-site interprofessional acute care and disclosure training sessions for over 700 learners in what were the University of Washington's largest interprofessional training sessions to date.

### *Healthcare Professional Training*

ISIS provides training for nurses, respiratory therapists, pharmacy students, physician assistant students, midwives, paramedics and other healthcare professionals from the University of Washington Medical Center, Harborview Medical Center, surrounding hospitals, and throughout the region.

### *Community Outreach*

ISIS supports a robust outreach program to middle and high school students, as well as college students early in their education with an interest in the health sciences. ISIS has had the opportunity to participate in UW Medicine's Mini-Medical School program, a six week lecture series open to the public. ISIS also participated in Harborview Medical Center's Community Internship Program and the Advancing Science in America Foundation's Achievement Rewards for College Scientists (ARCS) event. An important focus of ISIS is to provide community members with the opportunity to experience firsthand the training of healthcare providers.

## Accreditation

ISIS is proud to be accredited by both the American College of Surgeons (ACS) as a Level I Comprehensive Education Institute, as well as a Center of Excellence by the American Society of Anesthesiologists (ASA).

## Affiliated Organizations

In addition to collaborating with UW Medicine affiliated institutions (Harborview Medical Center, Seattle Children's, Boise VA Medical Center, Valley Medical Center, Northwest Hospital, and the University of Washington Medical Center), there is 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 and Science University (Portland, OR) and with the Andersen Simulation Center at Madigan Army Medical Center (Tacoma, WA). In addition, ISIS works closely with Seattle Children's to provide pediatric-based scenario training for SC's Neonatal Resuscitation Program (NRP) certification courses, resident and medical student training sessions, and research and curricula support for faculty.

### *Pacific Northwest Healthcare Simulation Collaborative (PNWHSC)*

With ISIS as a founding member, the Pacific Northwest Healthcare Simulation Collaborative (PNWHSC) was developed in 2009 as a collaborative of educators and stakeholders from hospitals, schools, and industry. This organization aims to combine simulation training and technology into the advancement of healthcare education.

### *PNWHSC Mission Statement*

*The Pacific Northwest Healthcare Simulation Collaborative shares individual expertise, techniques, tools and resources in simulation training. Members are comprised of educators, practitioners, researchers and stakeholders from schools of nursing and medicine, hospitals, and industry. PNWHSC members strive to integrate and expand simulation training and technology into healthcare education for enhancing the competencies and confidence of healthcare providers. Their purpose is to improve patient safety and save lives in our communities.*

Dr. Ross and members of the ISIS team continue to provide leadership support to the Pacific Northwest Healthcare Simulation Collaborative (PNWHSC) with members of simulation centers from throughout Washington State. Since its formation in 2009, the collaborative has grown to 117 active members from 37 hospitals, colleges, and industry partner sites. The most exciting development of the past year may be the partnership with PNWHSC and American Medical Response. In 2011, American Medical Response donated a mobile ambulance unit for PNWHSC use. The ambulance is available 24/7 to members of the collaborative for rural training outreach and on-the-road simulation efforts.



ALONG WITH STAKEHOLDERS FROM REGIONAL HOSPITALS, SCHOOLS, AND INDUSTRY, ISIS PARTICIPATES IN THE PACIFIC NORTHWEST HEALTHCARE SIMULATION COLLABORATIVE (PNWHSC).



# Governance

## Board of Directors

ISIS is governed by a Board of Directors appointed by Dr. Paul Ramsey, MD, CEO, UW Medicine, Executive Vice President for Medical Affairs, and Dean of the School of Medicine, University of Washington. The Board is comprised of representative members of the UW Medicine Health System who are advocates for the mission and goals of ISIS. Members of the Board of Directors are:

**Carlos Pellegrini, MD, FACS, FRCSI (Hon.),** ISIS Board Chairman; Chair, Department of Surgery

**Thomas Benedetti, MD, MHA,** ISIS Chair, Patient Safety and Quality Committee; Professor, Department of Obstetrics and Gynecology

**William Bremner, MD,** Chair, Department of Medicine

**John Clark, PhD,** Chair, Department of Biological Structure

**Richard Ellenbogen, MD,** Chair, Department of Neurological Surgery

**David Fisher, MD,** ISIS Seattle Children's Executive Representative; Senior Vice President and Medical Director, Seattle Children's

**Margaret Gilshannon, MHA,** ISIS Administrative Director; Director, Department of Surgery

**Cindy Hecker, BSN,** ISIS HMC Executive Representative; Chief Nursing Officer and Senior Associate for Patient Care Services, Harborview Medical Center

**Thomas Norris, MD,** Vice Dean for Academic Affairs; Professor and Chair, Department of Family Medicine

**Paul Ramsey, MD,** Dean, UW School of Medicine, CEO, UW Medicine

**Lawrence Robinson, MD,** Vice Dean, Clinical Affairs and Graduate Medical Education, UW School of Medicine; Professor, Rehabilitation Medicine

**Brian Ross, PhD, MD,** ISIS Executive Director; Professor, Department of Anesthesiology and Pain Medicine

**Richard Satava, MD, FACS,** ISIS Senior Executive Advisor; Professor, Department of Surgery

**Debra Schwinn, MD,** Chair, Department of Anesthesiology and Pain Medicine

**Mika Sinanan, MD, PhD,** ISIS Chair, Research and Development Committee; Professor, Department of Surgery

**Johnese Spisso, RN, MPA,** Chief Health Systems Officer, UW Medicine; Vice President for Medical Affairs, UW Medicine Health System

**F. Bruder Stapleton, MD,** Chair, Department of Pediatrics

**Fredric Wolf, PhD,** Chair, Department of Medical Education & Biomedical Informatics

**Eileen Whalen, RN, MHA,** ISIS HMC Executive Representative; Executive Director, Harborview Medical Center Administration

**Stephen Zieniewicz, MPH, FACHE,** ISIS UWMC Executive Representative; Executive Director, University of Washington Medical Center Administration

**Brenda Zierler, PhD, RN, FAAN,** Associate Director, ISIS; Professor, Biobehavioral Nursing and Health Systems

## ISIS Executive Committee

### **Margaret Gilshannon, MHA, ISIS Committee Member**

Ms. Gilshannon currently serves as the Director of Finance and Administration for the Department of Surgery and as the ISIS Administrative Director. She oversees all budgetary and operational decisions related to ISIS. Additionally, Ms. Gilshannon manages all other operational and financial resources within the Department of Surgery. Previously, Ms. Gilshannon has held other leadership roles at UW Medicine, including Associate Director of the Department of Surgery, Administrator of the Department of Plastic and Reconstructive Surgery, and Director, Clinical Systems Development.

Ms. Gilshannon holds a Masters of Health Services Administration from the University of Washington and an undergraduate degree in English from Lawrence University in Appleton, WI. She is a member of the American College of Healthcare Executives and serves on the Board of the Association of Academic Surgical Administrators.

### **Cynthia Hecker, RN, Committee Member**

Ms. Hecker is currently the Chief Nursing Officer and Senior Associate Administrator for Inpatient Operations for Harborview Medical Center. Ms. Hecker has held this position since 2000. In this role, she is responsible for nursing practice

throughout Harborview Medical Center along with operational responsibilities for all key inpatient clinical services, which include Critical Care, Acute Care, Rehabilitation, Psychiatry, Surgical Services, Radiology, Emergency, Laboratory and Pharmacy.

Ms. Hecker began her career at Harborview in January of 1981 after graduating from the University of Washington School of Nursing. She held clinical positions in Acute Care and Critical Care before moving into management, where she managed the Ambulatory Surgery Unit and the Post Anesthesia Care Unit for 9 years. In 1998, Ms. Hecker became the Assistant Administrator for Critical Care and Surgical Services before moving into her present position in 2000.

In addition to her duties at Harborview, Ms. Hecker is the Assistant Dean for Clinical Practice at the University of Washington's School of Nursing. In 2009, she received the University School of Nursing's Distinguished Alumni Award.

#### **Byron Joyner, MD, MPA, Committee Member**

Dr. Joyner is Professor and Residency Program Director in the Department Urology and Associate Dean for Graduate Medical Education at the University of Washington.

Dr. Joyner graduated from Princeton University and received his medical degree from Harvard Medical School in Boston, Massachusetts. He completed his residency at the Massachusetts General Hospital and then performed a research fellowship at Boston Children's Hospital. He had an additional 2 years of pediatric and reconstructive urology training at the Hospital for Sick Children in Toronto, Canada. He has been on faculty at the Seattle Children's Hospital since 2001 after a 4-year commitment in the US Army where he was Chief of Pediatric Urology at Madigan Army Medical Center. Last year, he received a Masters in Public Administration, which he felt organized many of his principles of leadership.

Besides his interest in resident and fellow education, Dr. Joyner has interests in clinical research related to voiding dysfunction and urinary tract infections in children. He is a Fellow of the American Academy of Pediatrics and the American College of Surgeons. He is an active member of many urological societies including the American Urological Association, the American Academy of Pediatrics, the Society of University Urologists, and the American College of Surgeons.

Dr. Joyner's passion is learning of and designing better ways to improve graduate medical education (GME). He is responsible for the core curriculum and competency-based training of urology residents at the University of Washington. Recently, he was appointed as the Associate Dean for Graduate Medical Education and oversees the educational learning environment for over 1200 residents and fellows in 92 different training programs at the same institution.

His training in the UW Teaching Scholar's program has allowed him to create new approaches to teaching residents about interpersonal and communication skills and professionalism. In fact, his efforts have been rewarded with the Julian S. Ansell Teaching award which he won in 2005. Besides the more than 40 scientific articles he has published, Dr. Joyner has recently written some of the seminal articles for Urology in the field of graduate medical education and continues to champion better ways to improve doctors and doctoring.

#### **Farrah Leland, JD, Committee Member**

Ms. Leland currently serves as the Administrator of ISIS, and in this role, she oversees day-to-day activities, staff, budgetary decisions, and all other operational management. She ensures that ISIS activities are in compliance with University policy, including working with School of Medicine Compliance and the Attorney General's office for contact/agreement negotiation. Additionally, Ms. Leland develops, plans, and oversees special events and projects to promote ISIS internally within the University of Washington, and externally with industry partnerships. She develops and writes policies and procedures for ISIS. Ms. Leland participates in Harborview Medical Center's Department Managers' Committee, and University of Washington Medical Center's Leadership Council. She's also a member of the American College of Surgeons' Accredited Education Institutes' Administration and Management Committee.

Ms. Leland has a Juris Doctorate from Gonzaga University, and in 2007, she was admitted to the Washington State Bar Association. Additionally, she has an undergraduate degree in Cell and Molecular Biology from the University of Washington.

**Thomas Lendvay, MD, Committee Member**

Dr. Lendvay is an Associate Professor of Urology. In 1995, he received a B.A. in German and Biology from Rice University in Houston, TX. He then earned his M.D. at Temple University in 1999. Dr. Lendvay completed his Surgical Internship and Urologic Residency training at Emory University in 2004. Following his residency, he pursued a two year fellowship in Pediatric Urology at Seattle Children's through the University of Washington. Dr. Lendvay has been a member of the University of Washington faculty since 2005.

Dr. Lendvay is focused on improving patient outcomes through advanced surgical education training methodologies. Through his membership in the Biorobotics Lab in the Department of Electrical Engineering, his Co-Directorship of the Seattle Children's Hospital Robotic Surgery Center and his role as Urology Program Delegate at Seattle Children's Hospital, he brings a unique perspective to simulation education. Dr. Lendvay was appointed by the Dean of the School of Medicine to serve as a member of the ISIS Executive Committee in 2011.

Dr. Lendvay has obtained extramural federal funding through the Department of Defense to explore the role of surgical warm-up in robotic surgery skills performance. In addition, he is a Co-Founder of Spi Surgical, Inc. which is developing novel neurosurgical and skull-based robotic surgery platforms as well as automated surgical performance feedback platforms capable of providing users with real-time assessments of their surgical skills. He has authored papers regarding the role of robotic surgery in children as well as foundation papers centered on surgical simulation training. He is credited with publishing the first urologic simulation curriculum within the AAMC sponsored MedEdPORTAL. Nationally, he is involved in drafting the first Basic Laparoscopic Urologic Skills curriculum to be rolled out to every Urology resident in the country.

**Carlos A. Pellegrini, MD, FACS, FRCSI (Hon.),  
Committee 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 ISIS from its inception. Dr. Pellegrini is a 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 UCSE, 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 University of Washington Department of Surgery.

Dr. Pellegrini is currently Chair of the Board of Regents of the American College of Surgeons (ACS). Additionally, he serves as the Chair of the Accreditation Review Committee for the ACS Accredited Education Institutes, a program which accredits surgical training centers that meet standards for promoting quality education. He is also a past president of the American Surgical Association and a Senior 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, PhD, MD, ISIS 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 University of Washington since 1996 when he developed the initial simulation training curriculum for the Department of Anesthesiology.

**Richard M. Satava, MD, Senior Executive Advisor**

Dr. Satava is a professor of surgery at the University of Washington and also serves as Senior Executive Advisor for ISIS.

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, Dr. Satava 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.

**Mika N. Sinanan, MD, PhD, Chair, Research and Development Committee**

Dr. Sinanan is a professor of Surgery at the University of Washington School of Medicine, and an adjunct professor within Electrical Engineering. Dr. Sinanan's primary role within ISIS is Chair of the Research and Development Committee.

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, from 1993-2004 Dr. Sinanan served as Co-Director of the Center for Videoendoscopic Surgery at the University of Washington School of Medicine. As Chair of the Surgery Pavilion Project Management

Committee, Dr. Sinanan was instrumental in the design and planning of the Surgery Pavilion, which houses one of the ISIS facilities.

Dr. Sinanan's current research interests are in the objective measurement and analysis of surgical performance, surgical simulation, and robotics. He 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."

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, as well as a focus within ISIS 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 UW Medicine healthcare professionals in standardized safety procedures.

**Peter Tarczy-Hornoch, MD, FACMI, Committee Member**

Dr. Tarczy-Hornoch is a University of Washington Professor of Pediatrics, Division of Neonatology, and Professor of Medical Education and Biomedical Informatics, Division of Biomedical and Health Informatics (BHI). He has recently been named as Acting Chair of the Department of Medical Education and Biomedical Informatics, and he serves as Division Head of BHI. He earned his M.D. from Stanford University School of Medicine in 1989. In 1992 he completed a residency in Pediatrics at the University of Minnesota and in 1995 he completed a fellowship in Neonatology at the University of Washington.

Dr. Tarczy-Hornoch is the leading force in the School of Medicine's Division of Biomedical and Health Informatics. Since 2001, the program has grown from a Master's degree program to a full Ph.D. program. Current enrollment includes 36 students and 7 postgraduate Senior Fellows. The program has graduated over 20 Ph.D. students and over two dozen M.S. students.

Dr. Tarczy-Hornoch serves a leadership role on a number of research efforts including Director of the Biomedical Informatics Core of the ITHS/CTSA grant, leading the development, implementation, and ongoing support of the

web based MINDscape open framework web based electronic medical record at the UW, and since 2006, serving as the Director of Research and Data Integration for the UW Medicine clinical computing group including leading the Microsoft Amalga evaluation, acquisition, installation, and deployment. Dr. Tarczy-Hornoch has lead a genetic informatics research group which has included 7 years focused on the development of the informatics infrastructure for the GeneTests.org; over 10 years as PI on two R01 grants and co-PI of an NSF grant; and collaborating with Dr. Jarvik since 2008 on the Northwest Institute for Genetic Medicine focusing on extracting phenotypes from the electronic medical record using advanced text mining approaches. Since 2001, he has directed the health informatics core on an AHRQ grant focused on integrating clinical data from electronic medical records from 12 hospitals in Washington.

Dr. Tarczy-Hornoch has been a member of the University of Washington School of Medicine faculty since 1998. He was promoted to full Professor in 2006. He holds an adjunct appointment in Computer Science and Engineering.

**Eileen Whalen, RN, MHA, Committee Member**

Ms. Whalen, MHA, RN was named as Executive Director for Harborview Medical Center in 2008. In this role Ms. Whalen provides executive leadership for Harborview and serves as a member of the senior leadership team for UW Medicine. She has over 25 years of experience in healthcare and comes to HMC from University Medical Center, Tucson, Arizona where she served as Vice President since 2004. University Medical Center is a 355 bed tertiary/quaternary care facility that serves as the only academic medical center in Arizona and is the teaching hospital for the University of Arizona, School of Medicine. It is ranked among the nation's premier hospitals in U.S. News and World Report's "America's Best Hospitals". The hospital serves as the level I trauma center for the region and has the full range of comprehensive medical and surgical specialties and centers of emphasis that are similar to those based at Harborview Medical Center. The hospital is a Magnet facility and consistently ranks as the employer of choice in southern Arizona.

Prior to working at the University Medical Center, Ms. Whalen worked at Saint Mary's Regional Health Care System in Nevada. She also worked previously at San Francisco General Hospital and the Maryland Institute for Emergency

Medical Services Systems, and served as a national health care consultant for trauma care systems across the country. She holds a bachelor's degree in Nursing and a master's degree in Public Health and Administration from Chapman University. She was the founding Editor of the Journal of Trauma Nursing and has numerous publications in emergency and trauma services and in health care system design. Ms. Whalen is a well recognized national speaker and has served as a reviewer for verification of trauma centers across the United States.

**Lorie R. Wild, PhD, RN, NEA-BC, Committee Member**

Dr. Wild is the Chief Nursing Officer and Senior Associate Administrator for Patient Care Services at University of Washington Medical Center (UWMC). She is responsible for clinical operations for inpatient care units, Surgical Services, Emergency Department, Social Work and Care Coordination, Pharmacy, Clinical Resource Management, Respiratory Care, Rehabilitation Services, the Center for Clinical Excellence, the General Clinical Research Center, Clinical Education and Support Services, and Clinical Information Systems for Patient Care Services. In addition, she oversees nursing education, research, and professional practice for all nurses working within UWMC.

Dr. Wild's passion includes creating and sustaining a practice environment where nurses and other health professionals have autonomy and discretion over practice and can work collaboratively to improve patient outcomes. Her research explores organizational influences on nurses' clinical practice and patient outcomes. She has lectured and published widely on a variety of topics related to evidence-based practice, professionalism, and pain management.

Dr. Wild earned her B.S. in Nursing from Grand Valley State University in Allendale, Michigan and both her Masters and Ph.D. in Nursing from the University of Washington. She is board certified as a Nurse Executive -Advanced, and holds appointments as Assistant Dean for Clinical Practice at the UW School of Nursing and as Adjunct Assistant Professor at Seattle Pacific University.

Dr. Wild has been a part of UW Medicine since 1981, working first as a staff nurse in Critical Care at Harborview Medical Center and at UWMC since 1984. She is a member and has served in leadership positions in numerous professional

organizations including the American Organization of Nurse Executives (AONE), the American Association of Critical Care Nurses (AACN), University Healthcare Consortium (UHC) and Sigma Theta Tau. Dr. Wild is a founding member of the American Society of Pain Management Nurses (ASPMN).

**Stephen Zieniewicz, MPH, FACHE, Committee Member**

Stephen P. Zieniewicz, Executive Director for University of Washington Medical Center (UWMC), has provided executive leadership for the UWMC since September 2007. UWMC is a 450 bed tertiary/quaternary care academic medical center providing a wide range of highly complex services including solid organ transplant, Level I NICU, neurosciences, blood and marrow transplantation for oncology patients and robotic assisted surgery. UWMC's approach to care is patient and family centered and currently has seven Patient and Family Centered Care Advisory Councils. UWMC again achieved US News and World Report Honor Roll Status in 2011, ranked #1 in the Seattle Metro area and is a Magnet Recognized Nurse Hospital. Mr. Zieniewicz is a Board Member of the American Heart Association.

Stephen P. Zieniewicz has served as Chief Operating Officer at Saint Louis University Hospital (SLUH) and Tenet Healthcare Corporation for three years from 2004 to 2007. SLUH is a 356-bed tertiary care facility recognized by US News & World Report. SLUH has a comprehensive organ transplant program that serves the Midwest, is a cardiac center of excellence recipient for quality and efficiency, and is the busiest Level I trauma center for the Missouri and Illinois region. He has also served as Chairman for Missouri State Wide Disaster Preparedness Committee of the Missouri Department of Health, Division of Health and Senior Services. SLUH is owned by Tenet Healthcare Corporation and is the academic medical center and teaching hospital for the Saint Louis University School of Medicine.

Prior to working at SLUH, Mr. Zieniewicz worked in the Winthrop South Nassau University Health System on Long Island, NY, serving as the Vice President for Support and Ancillary Services at South Nassau Hospital. He facilitated the launch and clinical integration of the 11-hospital Long Island Health Network where he was an Assistant Vice President. For seven years, he was an Administrator at Winthrop University Hospital. Mr. Zieniewicz began his career at North Shore

University Hospital in Manhasset, New York and spent 12 years in that system, and was promoted from a staff role to management and senior management positions.

Mr. Zieniewicz has more than 25 years of experience in healthcare and holds a Master's degree in Public Health from the Columbia University School of Public Health in New York and a Bachelor's degree in Biology from St. John's University in New York. Additionally, he is a Board Certified Healthcare Executive Fellow of the American College of Healthcare Executives. Mr. Zieniewicz has an interest and passion for patient safety, quality, service excellence, advanced technologies and translational research, and building collaborative and effective physician relationships.

**Brenda Zierler, PhD, RN, FAAN, Associate Director, ISIS**

Dr. Zierler is the Associate Director of ISIS; Professor in Biobehavioral Nursing and Health Systems; Adjunct Professor, Department of Surgery, Vascular Division, School of Medicine; Adjunct Professor, Department of Health Services, School of Public Health; and Professor, Department of Medical Education and Biomedical Informatics.

Dr. Zierler's research explores the relationships between the delivery of healthcare and outcomes—at both the patient and system level. In collaboration with other scholars and clinicians in the Schools of Medicine, Nursing, and Pharmacy, she created an interdisciplinary work group that developed appropriate and

specific health outcome measures to evaluate the effectiveness of a coordinated approach in care delivery for the prevention, diagnosis and treatment of venous thromboembolism (VTE). Her previous research supported by the Agency for Healthcare Research and Quality focused on the implementation and evaluation of a system-supported VTE Safety Toolkit. The Toolkit has been disseminated nationally for the purpose of improving the quality and safety of care. As Co-Principle Investigator of a Macy Foundation-funded study (with Brian Ross, PhD, MD), Dr. Zierler leads a group of interprofessional faculty and students in the development of a simulation-based team training program to improve collaborative interprofessional communication both within teams and with patients. Her team is currently validating the impact of simulation-based team training on students' interprofessional communication skills as measured by an innovative web-based assessment tool. In addition, Dr. Zierler and team will prepare the validated training program which will be disseminated to other health sciences schools through an exportable "Interprofessional Training Toolkit."

Dr. Zierler is Co-Director of the Clinical Informatics and Patient Centered Technologies Masters Program. She currently leads a training grant sponsored by HRSA which focuses on faculty development in the use of technology. Dr. Zierler was a Fellow in the RWJ Nurse Executive Program from 2008-2011.

## Status of Sixth Year Goals (7/2010-6/2011)

### **Integrate patient safety, quality, and efficient team management**

#### **Develop system-wide implementation and evaluation plan of Central Venous Catheter (CVC) Simulation-based training and credentialing for On-boarding of Healthcare Professionals**

##### STATUS:

- Continued implementation of the Central Venous Catheter (CVC) Enterprise Simulation-based training and certification by:
- Trained and certified 278 faculty, fellows, and residents on CVC (totaling 993 trainees since 2008).
- Continued to develop/update CVC online didactic module including a specific nursing module.
- Continued training and certification of incoming residents and faculty.
- Began planning for CVC implementation at Northwest Hospital and Medical Center.



CADAVERIC TRAININGS OCCUR REGULARLY AT ISIS HMC; SEEN HERE ARE INDIVIDUALS FROM THE DEPARTMENT OF NEUROLOGICAL SURGERY TRAINING IN ISIS' FACILITY.

#### **Develop 3-5 Curricula and Submit for Peer Review focused for learners:**

- **New Grad Orientation**
- **Staff Development**
- **Residents**

##### STATUS:

- Developed interprofessional student training curricula for students, residents, staff and faculty.
- Under Macy/Hearst funding, nine interprofessional training scenarios were developed and piloted in June 2011 as part of the ISIS Capstone project which trained over 300 students from the Schools of Medicine, Nursing, Pharmacy, and the MEDEX program.
- Integrated mock code and TeamSTEPPS training into New Grad Orientation program for UWMC Nursing.
- Provided TeamSTEPPS training for 138 UW Medicine Faculty and Staff
- Developed TeamSTEPPS training program for all incoming UW Medicine Residents (over 250 residents and fellows).
- Developed scenarios for disciplinary specific trainees (Radiology, NICU, ICU, mock codes, Cardiology/Angio Cath Lab).
- ISIS continues to offer internal lecture series for staff and student volunteers around various simulation and technical components.
- Held three procedural sedation courses for nursing staff
- Held 36 mock codes in the Emergency Department (25 at HMC and 11 at UWMC)
- Held 2 mock codes on the floors at HMC. Held 10 mock codes at UWMC

#### **Identify and develop two new system-wide Patient Safety or Efficient Team Management Initiatives through Patient Safety Educational Planning and Oversight Committee (EPOC)**

- **Pre-Procedure Checklist**
- **Cross Contamination**
- **Team development for one critical transition of care**

##### STATUS:

- Systematic literature review of informed consent format and patient understanding is in progress.
- Systematic literature review of interprofessional training is in progress.



- Began development of a moderate sedation program for faculty and residents.
- Developed pre-procedure checklist working group across UW Medicine.

#### **Increase utilization of ISIS to 40,000 learner hours**

STATUS:

- The total learner hours across all ISIS sites for FY11 was 43,995
- Added a Cardiac Echo Simulator Lab that will increase learners in various related programs.

### **Strengthen ISIS Interprofessional Team Training with Cross-Institutional Involvement**

**Develop three Interprofessional Curricula and Submit for Peer Review focused for learners:**

#### **• Students**

STATUS:

- Published 4 peer-reviewed curricula to AAMC's MedEdPORTAL (totaling eight ISIS curricula accepted to MedEdPORTAL since 2008).

**Lead Internal System-Wide TeamSTEPPS courses:**

- **Two courses at HMC**
- **Two courses at UWMC**

STATUS:

- Two TeamSTEPPS courses were held during the R1 and R2 orientations at HMC (6/23 and 6/30)
- Two Internal TeamSTEPPS "2 Day Master Training" courses held for UW Medicine (10/23-10/24 and 11/25-11/26)
- TeamSTEPPS training integrated into:
  - New Grad Orientation (Nursing – monthly);
  - Interprofessional Student Training Days (Medicine, Nursing, Pharmacy – monthly)
  - Capstone Sessions (Medicine, Nursing, Pharmacy, MEDEX – annually)
- In addition to internal system-wide TeamSTEPPS, ISIS held six AHRQ/AIR funded National Master Training Courses which included attendees from 10 US States and 2 international sites and over 33 programs. 237 learners were trained through this program.

- Held one TeamSTEPPS course for outpatient teams at the VA Puget Sound for primary care teams.
- In response to multiple outside requests and with the end of AHRQ/AIR funding, ISIS has begun exploring establishment of a Pacific Northwest regional training center for TeamSTEPPS.
- ISIS will be involved in the 10 external healthcare organization's Team Communication Error Disclosure Project.

**Enhance Faculty Development by:**

- **Support ongoing monthly faculty development and networking forum**
- **Develop a Faculty Development Web tool**
- **Develop IPE Scholarship Program**

STATUS:

- Due to the resignation of Sara Kim, PhD Educator, these monthly meetings were only held occasionally. With the addition of Brenda Zierler as Associate Director, these meetings will be held on a regular basis beginning in the fall.
- Developed and implemented interprofessional faculty development course on motivational interviewing, Reader's Theatre and TeamSTEPPS Communication.
- Ongoing development of web-based faculty development site; including modules on TeamSTEPPS, simulation, distance learning, and IPE competencies.
- Four faculty across the Schools of Medicine, Nursing, and Pharmacy attended the EHPIC (Educating Health Professionals in Interprofessional Care) 2011 Faculty Development Certificate Course in Toronto and became certified in IPE/IPC.

**Enhance Education Research by:**

- **Systematic literature review of interprofessional training**

STATUS:

- A manuscript will be sent to the Journal for Interprofessional Care by end of August 2011. The editor of the journal reviewed briefly and encouraged the submission. An abstract of this work was presented at the 2011 annual meeting of the American Educational Research Association.
- 10 abstracts based on interprofessional team training were accepted at the Collaborating Across Borders Meeting in Tucson, AZ (November 2011).

**Expand involvement and continue leadership to enhance the Pacific Northwest Healthcare Simulation Collaborative (PNWHSC) by:**

- **Lead sponsorship of Symposium for Patient Safety & Quality**
- **Secure mobile unit for use by PNWHSC members**

STATUS:

- ISIS is a founding member of the Pacific NW Healthcare Simulation Collaborative
- The Collaborative currently has 31 educational programs and 6 industry partners.
- PNWHSC has 117 active members
- PNWHSC meetings are held every other month from Tacoma to Bellingham with telepresence from Eastern and Central Washington.
- 10 PNWHSC members attended the IMSH (International Meeting on Simulation in Healthcare).
- Two ISIS Faculty/Staff serve on the Executive Board of PNWHSC (PNWHSC Board Chair and PNWHSC Board Secretary).
- Secured donation of an ambulance unit for use by PNWHSC members by American Medical Response.
- Planning of a Symposium for Patient Safety and Quality is underway with course to be offered in Spring 2012.

**Identify opportunities for collaboration with:**

- **UWMC Nursing Staff Development**
- **HMC Clinical Education**
- **HMC Community Training Center**

STATUS:

- Held two UWMC/HMC Nursing Staff Development train the trainer courses (n=49) using simulation as a tool for new nurse evaluation and staff development.
- Kat Comstock provided overview of TeamSTEPPS and the relationship with patient safety at the July 2011 Nursing Grand Rounds.
- UWMC Nursing holds new grad orientation on an as needed basis.
- HMC Clinical Educational has been fully integrated into ISIS HMC. The space is being used by Clinical Education on a regular basis and we expect an increase in use when Clinical Education's classroom moves from HMC to NJB (Ninth and Jefferson Building).
- HMC Community Training Center currently holds all of its courses at ISIS HMC.

## **Strengthen ISIS Financial Position**

**Pilot Study and grant submission (government and/or private) for two additional projects**

STATUS:

- Submitted/funded: Anand Jain: "Emergency cricothyroidotomy training module for ISIS," University of Washington Housestaff Association for \$2,500.
- Submitted/not-funded: Brenda Zierler and Jo Davies: "Moderate Sedation Safety Toolkit," AHRQ.

**Receive Congressional directed appropriation continuation funding (FY10)**

STATUS:

- Received FY10 Congressional directed appropriation continuation funding (\$4 million) in April 2011.

### **Funded Courses**

- **National Implementation of TeamSTEPPS (5 Courses)**
- **ASA MOCA Training (2 Courses)**
- **Neurological Surgery at HMC (3 Courses)**
- **ENT at HMC (2 Courses)**
- **Oral and Maxofacial at HMC (2 Courses)**
- **Orthopaedics and Sports Medicine at HMC (3 Courses)**
- **External User HMC Course (4-5 Courses)**

STATUS:

- Held six AHRQ/AIR funded courses for National Implementation of TeamSTEPPS.
- Three sessions of ASA MOCA were offered, but did not meet the minimum number of attendees in order to hold the course.
- Held three Neurological Surgery courses (sponsored through educational grants).
- Held two-day ENT course (sponsored through an educational grant and gift funding).
- Held four Vascular Surgery courses (sponsored by outside vendor).
- Held 2 Oral and Maxofacial courses (sponsored by educational grant).
- Held 1 Orthopaedics and Sports Medicine course (CME).
- Eight days of rental for external users.

# Facilities

## Harborview Medical Center

With the 2010 opening of the ISIS facility at Harborview Medical Center, ISIS continues to provide enhanced infrastructure support across the UW Medicine Health System. The ISIS HMC facility, housed in the Ninth and Jefferson Building is an 8,000 square foot, state-of-the-art simulation resource, complete with a convertible nine station wet lab space for cadaveric training.

With involvement from a wide range of departments and programs, functionality is a priority and all facilities have been specifically designed to serve multiple purposes. Reconfigurable walls and mobile equipment allow for seamless transitions of the facility to accommodate a variety of courses and group sizes.

ISIS- HMC has been extensively outfitted with equipment for simulation training. Over the past year, ISIS has added several simulated patient manikins, state-of-the-art computer models for Laparoscopic and Gastroenterology training, video equipment, and multiple procedure- and task-training models.

Focusing on the training needs on the region's Level I Trauma Center, the ISIS- HMC space complements the existing ISIS-UWMC facility with specialty specific simulation training now fully operational and coordinated to meet the needs of both hospitals.



THE 8,000 SQ. FT. ISIS HMC FACILITY OPENED IN JANUARY 2010, AND INCLUDES A 2,000 SQ. FT. WET LAB SPACE WITH CADAVERIC TRAINING CAPABILITIES

## University of Washington Medical Center

Located on the first floor of the University of Washington Medical Center Surgery Pavilion, the 2,000 square foot ISIS-UWMC facility has been open to the UW Medicine community since 2007.

ISIS- UWMC training is supplemented by the Center for Videoendoscopic Surgery (CVES) laboratory. Housed in the Health Sciences Center on the 6<sup>th</sup> floor, the 950 sq. ft. training and research laboratory supports the education of medical students, and residents in surgical disciplines, including General Surgery, Cardiothoracic Surgery, Urologic Surgery, OB/GYN Surgery, and Orthopaedics. The CVES lab supports an extensive array of community-based educational programs in open and minimally-invasive surgical techniques.

The laboratory in the Center for Videoendoscopic Surgery is supported by a director, co-director and associate director, Drs. Carlos Pellegrini, Brant Oelschlager, and Andrew Wright, all of whom are surgeons in the Department of Surgery. The CVES lab also provides fellowship training programs which train two minimally invasive surgery fellows and one esophageal research fellow each academic year.

The continued success of the UWMC facility, along with the transition into the new HMC facility, increases the involvement of programs within UW Medicine and reinforces a new focus on simulation as a vital training tool. As ISIS continues to expand, so too does its involvement and interest within the University community.



THE RECONFIGURABLE VIRTUAL OPERATING ROOM AT THE UWMC ISIS FACILITY IS HEAVILY USED FOR TEAM-BASED TRAINING SCENARIOS.

# Interprofessional Education and Practice



**Brenda Zierler, PhD, RN,  
FAAN**  
ISIS, Associate Director

Professor of Biobehavioral  
Nursing and Health Systems

## Overview

The Interprofessional Education and Practice (IPEP) Committee oversees a wide range of ISIS educational activities, including curriculum development, faculty development, and educational research. The Committee is chaired by Brenda Zierler, PhD, RN, FAAN.

## 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 Schools of Medicine, Nursing, Pharmacy and the MEDEX Physician Assistant Program. Effective interprofessional communication and teamwork has become a central focus of the IPEP Committee.

Under the direction of Dr. Zierler, the University of Washington has become a pioneer in the development of interprofessional training curriculum. Funded by the Josiah Macy Jr. Foundation and William Randolph Hearst Foundation (over \$1 million, combined), ISIS, in partnership with the UW Center for Health Science Interprofessional Education, Research, and Practice,

piloted an immersive simulation-based, team training program in 2010. This program focused heavily on team communication in acute care management and disclosure of medical errors to patients.

Following the initial program pilot (held in 2010), this past June, 307 students from the Schools of Medicine, Nursing, Pharmacy, and the MEDEX program participated in an Acute Care Team Training course. This was one of the largest health sciences-based interprofessional training at the University of Washington to date. During the week-long course, students worked together managing clinical scenarios in the areas of pediatrics, obstetrics, or adult acute care, gaining both skill-based and team communication training. This groundbreaking course was one of the first opportunities for students from these disciplines to collaborate in a simulated training setting.

## Curriculum

In addition to training courses, ISIS continues to provide assistance to faculty members as they develop curricula and generate scholarly products. Assistance is offered in a number of ways. First, the IPEP Committee assists faculty with identifying priority training areas prior to developing a curriculum. The Committee relies on multiple needs assessment methods (e.g., survey, literature review, expert opinion) and existing databases, such as the Patient Safety Net for identifying training priorities.

Second, the IPEP Committee provides assistance to ISIS faculty on multiple aspects of developing a curriculum, including writing learning goals and objectives, identifying pre-requisite knowledge, and required cognitive and procedural training components. Once the completed curriculum is internally peer reviewed, it is submitted for external peer review and acceptance to the Association of American Medical Colleges (AAMC) MedEdPORTAL. MedEdPORTAL provides electronic web-based access to peer-reviewed educational materials. Launched in 2006, this centralized repository houses digital educational materials including curricula, didactics, and teaching and assessment tools. Currently, ISIS has eight curricula formally accepted by MedEdPORTAL with eight more in preparation for submission.



STUDENTS FROM THE SCHOOLS OF MEDICINE, NURSING, PHARMACY AND MEDEX PROGRAM WORK TOGETHER AS PART OF AN INTERPROFESSIONAL STUDENT PROJECT FUNDED BY THE JOSIAH MACY JR. FOUNDATION.

## Formal Curriculum Under Development

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

### *Anesthesiology*

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

### *Internal Medicine*

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

### *OB/GYN*

1. Basic OB/GYN Technical Skills
2. Basic OB Ultrasound
3. Breach Delivery
4. Hemorrhage Management
5. Hypertensive Management
6. Intrapartum Fetal Monitoring
7. Shoulder Dystocia\*\*\*
8. Trans-vaginal Tape

### *Dentistry*

1. Conscious Oral Sedation

### *Emergency Medicine*

1. Pediatric Anticholinergic Toxicity\*\*\*
2. Pediatric Opioid Toxicity\*\*\*

### *Urology*

1. Suprapubic Catheter Placement \*\*\*

### *Surgery*

1. Endoscopy
2. Laparoscopy
3. Laparoscopic Cholecystectomy
4. Suturing/Wound Management

### *Interprofessional*

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

\*Under Internal Review

\*\*Submitted to MedEdPORTAL

\*\*\*Accepted by and Available on MedEdPORTAL

## ISIS Educational Database

The development and maintenance of the ISIS database continues to be a major focus. ISIS received Human Subjects Internal Review Board 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 electronic system. The database provides ISIS faculty and researchers with extensive reports on trainee courses, faculty hours, trainee and instructor evaluations and facility usage. The database provides two key benefits to affiliated ISIS faculty: (1) critical information for documenting faculty teaching records and effectiveness; and (2) a research database, informing the development of educational research questions and study design. In 2011, ISIS leadership approved a redesign of the ISISTrak Database system to provide increased functionality and reporting capabilities. The improved ISISTrak Database system is scheduled to launch in Fall 2011.

## Faculty Development

Under the direction of ISIS Executive Director, Dr. Brian Ross and IPEP Chair, Dr. Brenda Zierler, ISIS faculty across UW Medicine maintain an active network of community via ISIS faculty development.

In 2011, members of the ISIS team attended the Educating Health Professionals in Interprofessional Care (EHPIC) certification course in Toronto, Canada at the Center for Interprofessional Education. Attending members became certified in interprofessional education and curriculum development.

ISIS has enrolled faculty and staff members from over thirty departments and programs through a formal review process. Faculty are provided with access to ISIS technical staff to assist with the creation of new courses and educational materials. ISIS technicians provide regular support to course instructors including tutorials in simulator operation and video development.

ISIS also supports faculty through hosting regular faculty development meetings/workshops, support with IRB applications, as well as on-site promotion portfolio and curriculum development assistance. ISIS continues to host monthly faculty development meetings with a focus on various curriculum development techniques. Session topics include:

- Interprofessional Education
- Simulation Scenario Storyboarding
- Team Training
- Technical Development of E-Learning Materials

## Faculty Recruitment

ISIS uses various approaches to recruiting its faculty. Faculty and staff members either contact ISIS directly for involvement or are recommended by their affiliated departments. In addition, ISIS actively recruits senior residents and fellows with interests in implementing educational research projects, generating scenarios for curriculum, or serving as instructors.



IN FY11, MORE THAN 80 AFFILIATED FACULTY MEMBERS SERVED AS COURSE INSTRUCTORS AND RESEARCH PROJECT LEADS.

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

## Membership Requirements

### Core Faculty (22 current members)

Membership requirements and expectations for Core Faculty Members include:

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

### Adjunct Faculty (47 current members)

Membership requirements and expectations for Adjunct Faculty Members include:

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

### Research Faculty (16 current members)

Membership requirements and expectations for Research Faculty Members include:

1. IAF Review of candidate's departmental research credentials
2. Submission of one-page proposal for research the member would like to conduct
3. Completion of IAF and IRB project review
4. Attendance at monthly ISIS Research and Development Meetings
5. Participation in annual status review of research project (by R&D Committee)

# CURRENT LIST OF ISIS FACULTY

## CORE

### Anesthesiology

Davies, Jo  
Lombaard, Stefan  
Low, Daniel  
Metzner, Julia  
Souter, Karen  
Vitin, Alexander

### Medicine

Adedipe, Adeyinka  
Hurley, William  
McDonough, Karen  
Morris, Amy

### Neurological Surgery

Ferreira, Manuel

### Obstetrics and Gynecology

Carranza, Leslie  
Fialkow, Michael

### Ophthalmology

Wu, Michael

### Orthopaedics and Sports Medicine

Allan, Chris  
Taitsman, Lisa

### Surgery

Khandelwal, Saurabh  
Mokadam, Nahush  
Pellegrini, Carlos  
Sinanan, Mika  
Varghese, Thomas  
Wright, Andrew

## ADJUNCT

### Anesthesiology

Dembo, Gregory  
Edwards, Thomas  
Joffe, Aaron  
Kent, Christopher  
Ortner, Clemens  
Peterson, Gene  
Plitt, Kenneth  
Souders, Jenny  
Sivarajan, Gouri  
Sivarajan, Murali  
Vater, Youri  
Verma, Shilpa  
Wong, Karen

### Family Medicine

Beard, Mark  
Osborn, Justin

### Medicine

Hagman, Melissa (Moe)  
Neff, Margaret

### MEDEX

Martin, Alexa  
Vorvick, Linda

### Neonatal Outreach

Zaichkin, Jeanette

### Neurological Surgery

Ellenbogen, Richard  
Sekhar, Laligam

### Nursing

Goodburn, Michelle  
Lingen, Lynn  
Moe, Karen  
Sayre, Cindy  
Thorngate, Lauren  
Torgeson, Reiko  
Wolf, Juvann  
Wong, Karena

### Obstetrics and Gynecology

Amies, Anne-Marie  
O'Connell, Kathy

### Ophthalmology

Taravati, Parisa

# CURRENT LIST OF ISIS FACULTY

## ADJUNCT CONT'D

### Orthopaedics and Sports Medicine

Barei, David  
Dunbar, Robert  
Manner, Paul  
Nork, Sean

### Otolaryngology

Davis, Greg  
Moe, Kris  
Sardesai, Maya  
Stanley, Robert

### Pathology

Fligner, Corinne

### Pediatrics

Reid, Jennifer  
Stone, Kimberley  
Strandjord, Thomas

### Surgery

Friedrich, Jeff

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## Research

### Anesthesiology

Jense, Ryan

### Biological Structure

Brinkley, James  
Clark, John

### Medicine

Carvalho, Paula  
Jackson, Molly  
Jerud, Elliot  
Sokol-Hessner, Lauge

### Nursing

Adams, Christine  
Cline, Lauren  
Kupchik, Nicole  
Shannon, Sarah  
Zierler, Brenda

### Otolaryngology

Whipple, Mark

### Pharmacy

Odegard, Peggy

### Radiology

Wang, Carolyn

### Urology

Lendvay, Thomas

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## CVES

### Surgery

Oelschlager, Brant



## Research Faculty Members

Anesthesiology	Ryan Jense, MD
Biological Structure	James Brinkley, MD, PhD John Clark, PhD
Medicine	Paula Carvalho, MD Molly Jackson, MD Elliot Jerud, MD Lauge Sokol-Hessner, MD
Nursing	Christine Adams, BSN, RN Lauren Cline, RN, MN Nicole Kupchik, RN, MN, CCNS Sarah Shannon, PhD, RN Brenda Zierler, PhD, RN, FAAN
Otolaryngology	Mark Whipple, MD
Pharmacy	Peggy Odegard, PhD
Radiology	Carolyn Wang, MD
Urology	Thomas Lendvay, MD

## CVES Faculty Member

Surgery	Brant Oelschlager, MD
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ISIS HOSTS REGULAR NEONATAL RESUSCITATION TRAINING SESSIONS TO A DIVERSE ARRAY OF PROVIDERS, INCLUDING UW MEDICINE AND REGIONAL HEALTHCARE PROVIDERS.

## Current Courses

With eight peer reviewed curricula published through AAMC's MedEdPORTAL, ISIS course offerings have expanded to include a multitude of department/faculty driven training sessions. Over the past year, ISIS has hosted the following courses for 8,928 learners, totaling 43,995 learner hours:

### Anesthesiology

#### **Advanced ACLS for Anesthesia**

These courses are comprised of a number of short ACLS sessions for fourth year Anesthesia residents. 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 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 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. Content 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 airways and pictures that can be reconfigured however the instructor sees fit. 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 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.

### **Airway Assessment and Management Training (Distance)**

This course focuses on the importance of proficient airway management. Lecture material and simulation training is dedicated to the anatomy of the airway and hands-on skill practice focused on the identification and assessment of the patient airway. This course is designed for 3<sup>rd</sup> and 4<sup>th</sup> year medical students, 1<sup>st</sup> year residents and physician assistants.

## **Dentistry**

### **Conscious Oral Sedation**

This course (in development) will focus on the skills and techniques necessary for proper administration and management of conscious oral sedation. The course has been designed for dentistry students and faculty.

## 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.

### **Emergency Medicine Resident Skills Training**

This training involves learning and practicing airway skills, lumbar puncture, and thoracentesis, all of which are described in greater depth under “Internal Medicine.”

### **Basic Ultrasound Competency**

This course teaches basic ultrasound principles. 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. This course was designed to train residents.

### **Pediatric Anticholinergic Toxidrome**

This course teaches learners to recognize and manage pediatric anticholinergic toxicity and its complications, seizures and cardiac dysrhythmia. The course is simulation based with an integrated team communication focus. The learners will identify the signs and symptoms of anticholinergic toxidrome, learn its antidote and learn that repeated doses of the antidote may be necessary in managing anticholinergic toxicity. This course was designed to teach pediatric and emergency medicine residents, fellows, attendings, and nurses.

### **Pediatric Opioid Toxidrome**

This course teaches learners to recognize and manage pediatric opioid toxicity and its complication, respiratory failure. The course is simulation based with an integrated team communication focus. Learners will identify the signs and symptoms of an opioid toxidrome, learn its antidote and learn that repeated doses of the antidote may be necessary in managing opioid toxicity. This course was designed to teach pediatric and emergency medicine residents, fellows, attendings, and nurses.

### **PSIP Mock Codes**

PSIP is an in-situ simulation designed for the Emergency Medicine medical staff. The course focuses on teamwork and communication skills training while reviewing the proper protocols for common emergency medicine complications.

## 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.

### **Cardiac**

This course was designed to teach cardiopulmonary physical exam and clinical reasoning skills to medical students, residents, and other healthcare trainees in a case-based format. We expect the clinical teachers using these cases for medical education to be experienced in teaching the physical exam and clinical reasoning.

### **Flexible Bronchoscopy**

This course is designed to introduce Pulmonary & Critical Care Medicine fellows to the skills necessary to perform basic flexible bronchoscopy (FB). Through a didactic lecture, learners are introduced to the history of and theory behind FB, clinical indications and contraindications to FB. This course is provided to attendings and fellows in pulmonary and critical care.

### **Chest Procedures**

This course teaches the basic principles of chest procedures including chest tube placement and thoracentesis to an audience of medicine residents and fellows.

## 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. 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 2<sup>nd</sup> 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 4<sup>th</sup> 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.

### **Emergency Medicine Training for Medical Students**

During Emergency Medicine clerkship this course is designed to teach medical students, the basics of ACLS, suturing and knot-tying, airway management and splinting.

### **Medical Student Elective**

This course is designed to provide skills review to medical students. Areas of training have been created to coincide with the responses to a resident survey asking current residents to identify skills with which they wish they had received additional experience during their medical school training.

### **Suturing and Wound Management for Medical Students**

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



ISIS INCORPORATES CUTTING-EDGE RESEARCH INTO TRAININGS, FOR EXAMPLE RESEARCH ON HOW TO TRAIN HEALTHCARE TEAMS TO COMMUNICATE EFFECTIVELY; IN THIS PHOTO, THE TEAM LEADER IS BLINDFOLDED, WHICH CHALLENGES THE TEAM TO COMMUNICATE WITH EXACTNESS AND PRECISION.

### **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 4<sup>th</sup> year.

## Neurological Surgery

### **Anterior and Middle Fossa: Anatomy Microsurgery, and Endoscopy**

This course involves training on cranial incision and anatomical dissection. The course provides both didactic lectures and hands-on practice with endoscopy and microsurgical tools.

### **Neurological Surgery Wet Lab**

This course involves lectures and labs designed to teach neurosurgeons how to perform various approaches and procedures. Residents have the opportunity to practice on cadavers with new instruments and state-of-the-art surgical devices.

### **Posterior Fossa: Anatomy, Microsurgery, and Endoscopy**

This course is designed for neurosurgery residents and includes a series a lectures and hands-on practice with dissection, endoscopy, and microsurgery techniques.

## 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

### **Basic OB Ultrasound**

This course demonstrates the proper skills and procedures of an obstetric ultrasound. This course is designed for OB/GYN residents.

### **Breach Delivery**

This course is designed to teach the techniques and skills necessary for the successful management of a breach delivery. The course combines didactic and simulation training and is designed for OB/GYN residents and fellows.

### **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.

### **Hemorrhage Management**

This course involves review and practice with the techniques and skills necessary for the successful management of obstetric hemorrhage. The course combines didactic and simulation training and is designed for OB/GYN residents and fellows.

### **Hypertensive Management**

This course is designed to teach the techniques and skills necessary for the successful management of obstetric hypertension. The course combines didactic and simulation training and is designed for OB/GYN residents and fellows.

### **Interpartum Fetal Monitoring**

This course is designed to educate obstetric providers in the evaluation and management of intrapartum fetal monitoring patterns. The course involves a didactic session and hands-

on training sessions in the evaluation and management of intrapartum fetal monitoring patterns on a high fidelity mannequin. The course is provided for OBGYN and Family Medicine medical students, residents, and nursing students.

### **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.

### **OB Bleeding Emergency**

In-situ scenario designed to evaluate OB/GYN residents during an obstetric bleeding emergency. This scenario involves a standardized patient actress, who wears Parto-Pants, a low-tech, high-fidelity simulator pants. The scenarios are recorded and later used to debrief the physicians on their performance.

### **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 OB/GYN training.

### **Trans-vaginal Tape Mid-Urethral Sling**

This course is designed to give Obstetrics & Gynecology residents the opportunity to develop the skills necessary to perform a traditional TVT MUS prior to performing it on a patient during their training. Learners in this course are asked to identify patient symptoms and eligibility for incontinence surgery; set-up and perform the TVT on a simulated patient; and recognize and treat the common complications that might occur.

The training session involves a review of incontinence procedures, the relevant anatomy for the TVT and the steps necessary to perform a traditional TVT safely. After which a simulated TVT placement will be performed and graded.

## 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.

## **Ophthalmology Wet Lab**

This course involves a lecture to teach ophthalmology faculty new procedures and research. Afterwards, physicians have the opportunity to work on cadavers, animals and simulators to practice procedures with new instrumentation and devices.

## Orthopaedics

### **Resident Training Series**

This course incorporates a weekly series of didactic lecture topics with frequent hands-on skills practice in the ISIS wet-lab. The series is designed for Orthopaedic residents.

### **Mid-Arm Dissection**

This course series incorporates various procedure-based skills training for orthopaedic residents. Sessions include: anatomy, tissue dissection, and orthopaedic repairs.

### **Upper Extremity Surgical Skills Practice**

This course involves hands-on skills training for orthopaedic surgical procedures, designed for orthopaedic fellows.

## Otolaryngology

### **Otolaryngology Facial Reconstruction Course**

The University of Washington Department of Otolaryngology sponsors an annual course on facial plastic and reconstructive surgery, rhinology and endoscopic sinus surgery. The target audience for this course is our trainees and community physicians.

## 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 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 mannequin and focus on both the resuscitation procedures and 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. Students practice suturing on foam tissue pads that are specifically designed to meet the needs of this course.

## General 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 electrosurgery 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 various laparoscopic trainers, 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.

### **Fundamentals of Endoscopic Surgery**

Using endoscopic GI trainers, students do a wide variety of exercises which help the user with spatial recognition, instrument dexterity and improved motor control. The GI simulator is an advanced computer simulator for practice of navigation and 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. Residents 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.

### **Percutaneous Suprapubic Catheter Placement**

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

### **Urology Laparoscopic Training**

Using laparoscopic trainers, 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.

## **Interprofessional Offerings**

### **Central Venous Catheter Placement**

Designed for healthcare providers that place central venous catheters, this course teaches the basic principles and techniques for placing a central venous line into a patient. Learners first complete an E-Learning cognitive training module and training with a manikin before attending the 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™.

### **Code Blue**

Medical Emergency Response Teams are taught basic principles in interprofessional team communication and function in simulated full scale in-situ 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, healthcare professions present so as to create a more realistic interaction environment. All are done in the Virtual Operating Room using a life size human patient manikin.

## **Future**

ISIS continues to expand its faculty development endeavors. Major efforts for this coming year include:

With faculty development opportunities, curricula development support, mentoring for academic promotion, research support and formalization of faculty commitments to ISIS, the IPEP committee continues to provide valuable resources to faculty at all levels.

The IPEP committee will continue to provide guidance and support for ISIS faculty wishing to develop educational materials with ISIS. There remains added emphasis on the identification and development of interprofessional curriculum as ISIS continues to expand upon its mission to provide standardized simulation education both locally and nationally.



ISIS TRAINED 278 FACULTY, FELLOWS, AND RESIDENTS ON CVC (TOTALING 993 TRAINEES SINCE 2008).

# Research and Development Committee



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

Professor, Surgery

## Overview

The ISIS Research and Development Committee (R&D) works in collaboration with the ISIS IPEP Committee, and the Biorobotics Lab (BRL). The R&D Committee includes over 30 members from a variety of departments and programs at the University of Washington and is headed by Mika Sinanan, M.D., Ph.D., Chair, ISIS R&D and President of UW Physicians, and Co-Chaired by Thomas Lendvay, MD.

## 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.

## Congressional Support

In the federal fiscal year 2009 (FY09), ISIS secured a congressional directed appropriation for over \$3.8 million (funding received April 2010). In 2010, ISIS received optional continuation funding for \$4 million. The pilot program based-funding partners the University of Washington with Madigan Army Medical Center in the development of new and creative ventures for distributed skills training, individual healthcare provider training programs, and team training with continuity of care.

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

### **Validation of an Assessment Tool for Simulated Central Venous Catheterization**

PI: Mika Sinanan, MD, PhD; Andrew Wright, MD

*STATUS: Ongoing, Over 993 Residents, Fellows, and Faculty have completed ISIS testing since 2008*

### **Disclosure of Simulated Adverse Events in Obstetrics**

PIs: Thomas Benedetti, MD; Thomas Gallagher, MD; Leslie Carranza, MD, MHS; Sara Kim, PhD; Karen Souter, MB BS, FRCA

*STATUS: Ongoing, Data Collection*

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

PI: Thomas Lendvay, MD

*STATUS: Ongoing, Data Collection*

### **ISIS Educational Database**

PIs: Brian Ross, PhD, MD

*STATUS: Pilot Database Completed in 2007, Ongoing Data Collection*

### **Individual Healthcare Training (Congressional Directed Appropriation – Institute for Simulation and Interprofessional Studies)**

Pilot Program: Cardiac Respiratory Exam

Pilot Program Leads: Karen McDonough, MD; Molly Jackson, MD

*STATUS: In Development*

Pilot Program: Central venous Catheter (CVC)

Pilot Program Leads: Mika Sinanan, MD, PhD;

Andrew Wright, MD

*STATUS: Ongoing, Curriculum Modification and Validation*

Pilot Program: Intelligent Virtual Cadaver

Pilot Program Leads: James Brinkley, PhD, MD; John Clark, PhD

*STATUS: Ongoing, In Development*

Pilot Program: Laparo-endoscopic

Pilot Program Leads: Andrew Wright, MD; Saurabh Khandelwal, MD; Col. (Ret) Bernard Roth, MD

*STATUS: Ongoing, In Development*

Pilot Program: Percutaneous Suprapubic Catheter Insertion

Pilot Program Leads: Thomas Lendvay, MD

*STATUS: Ongoing, Curriculum Development Phase*

Project PI: Brian Ross, PhD, MD

Pilot Program: Wound Management

Pilot Program Lead: Andrew Wright, MD

*STATUS: Ongoing, Curriculum Development and Validation*



### **Interprofessional Team Training (Macy/Hearst)**

PIs: Brian Ross, PhD, MD; Brenda Zierler, PhD, RN, FAAN  
*STATUS: Ongoing, Curriculum Development and Pilot Testing*

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

PIs: Andrew Wright, MD; Carlos Pellegrini, MD, FACS, FRCSE (Hon.); Renato Soares, MD; Saurabh Khandelwal, MD; Brant Oelschlager, MD; Roger Tatum, MD  
*STATUS: Ongoing, Data Collection*

### **Survey for Medical Student Skills Curriculum**

PIs: Brian Ross, PhD, MD; Sara Kim, PhD; Michael Wu, MD; Julia Metzner, MD  
*STATUS: Ongoing, Data Collection*

### **Team Performance for Pediatric Resuscitation**

PI: Jennifer Reid, MD  
*STATUS: Submitted for publication, pending decision*

### **Team Training with Continuity of Care (Congressional Directed Appropriations - Institute for Simulation and Interprofessional Studies)**

Project PI: Brian Ross, PhD, MD  
Pilot Program: Team Training  
Pilot Program Leads: Leslie Carranza, MD, MHS,  
Rosemarie Fernandez, MD  
*STATUS: In Development*  
Pilot Program: Medical Emergency Black Box Information  
System (MEBBIS)  
Pilot Program Lead: Brian Ross, PhD, MD  
*STATUS: In Development*

### **Transfer of Simulation Based Skills to Patients**

PIs: Julia Metzner, MD; Brian Ross, PhD, MD; Stefan Lombaard,  
MB, ChB, FANZCA; Todd Cannon, MD; Karen Souter, MB BS,  
FRCA; Sally Barlow, MD; Alec Rooke, MD, PhD; Chris Kent,  
MD; Krishna Natrajan, MB BS, FRCA  
*STATUS: Ongoing*

### **Validation of Pediatric Resuscitation Curriculum**

PI: Jennifer Reid, MD  
*STATUS: Manuscript in Progress*

### **Validation Study of Simpraxis Laparoscopic Cholecystectomy Surgical Trainer**

PIs: Brian Ross, PhD, MD; Andrew Wright, MD; Mika Sinanan,  
MD, PhD; Sara Kim, PhD  
*STATUS: Second Recruitment Period Completed, Ongoing Data  
Collection Phase*

## Skills and Technology Assessment

### **Augmented Reality Collocation of Ultrasound Image Plane onto Endoscopic View to Improve Safety and Accuracy in Image Guided Procedures**

PIs: James Park, MD; Raymond Yeung, MD;  
Peter Oppenheimer, MS  
*STATUS: Ongoing, Device prototype under development*  
A preliminary simulation prototype has been developed that  
demonstrates real time overlays registered to live video of an  
ultrasound transducer and an ablation needle mockup.

### **Cardiac Ultrasound**

PI: Florence Sheehan, MD  
*STATUS: In progress, two grants were received to support this  
project; the first to develop a simulator and the second to develop  
competency training.*

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

PIs: Michael Wu, MD; Mika Sinanan, PhD, MD  
*STATUS: Pilot Completed, Second phase: In Recruitment*

### **Validation Assessment Metrics for Basic Surgical Skills**

PIs: Andrew Wright, MD; Sara Kim, PhD; Karen Horvath, MD;  
Lisa McIntyre, MD; Kristine Calhoun, MD; Aaron Jensen, MD;  
Samuel Park  
*STATUS: Ongoing Data Analysis*

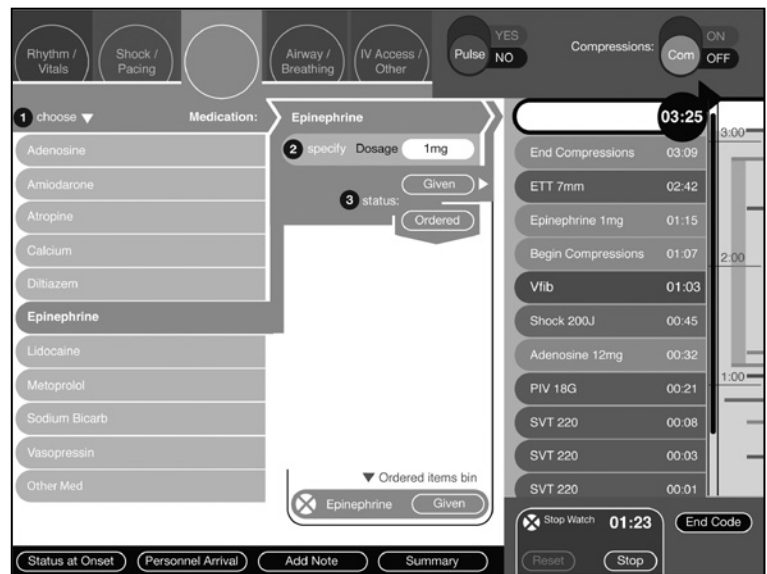
### **Virtual Reality Warm-Up for Robotic Surgery Skills Training**

PIs: Thomas Lendvay, MD; Richard Satava, MD;  
Timothy Brand, MD  
*STATUS: Ongoing Subject Enrollment*



ISIS SUPPORTS ONGOING RESEARCH OF  
FACULTY IN EMERGING FIELDS.

THE EVENTDOC SYSTEM™  
 WAS DESIGNED TO IMPROVE  
 DOCUMENTATION AND EVENT  
 RESPONSE DURING 'CODE  
 BLUE' EMERGENCIES.



## Training via Telemedicine and Virtual Environments

### Distributed Skill Training and Healthcare Delivery (Congressional Directed Appropriation – Institute for Simulation and Interprofessional Studies)

Project PI: Brian Ross, PhD, MD

Pilot Program: Interactive Online Toolkit

Pilot Program Leads: Brenda Zierler, PhD, RN, RVT; Brian Ross, PhD, MD

STATUS: Ongoing

Pilot Program: Warrior in Transition Virtual World

Pilot Program Leads: Col. (Ret) Bernard Roth, MD; LTC Daniel Dudek

STATUS: Ongoing

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

PI: Brian Ross, PhD, MD

STATUS: In Development

## Project Highlight: EventDoc System™

ISIS has consistently situated itself at the forefront of patient safety education. Most recently, ISIS has focused its energy into the improvement of 'Code Blue' (cardiac/respiratory arrests and medical emergencies) event response and documentation. With the aim of providing improvements to complete and timely documentation during high stakes patient care episodes, a multidisciplinary team of physicians, design engineers, computer engineers, usability experts, informaticists and IT specialists was assembled to create a functional prototype of a code documentation system. Overcoming the challenges often associated with new product implementation, the developed system has been designed

so that it requires little to no training, is intuitive to use, light weight, relatively inexpensive and can reliably and quickly collect data at medical emergency and move this data directly and accurately to the patient record. The resulting EventDoc System™ will inevitably impact patient safety and patient outcomes through the enhancement of accurate patient records.

Borrowing from the successful concepts and ideas of the aviation industry, ISIS has developed the EventDoc System™. Incorporating several innovative ideas to combine easy to use touch interface features with the robust data security features of a backend database server, user interface provides intuitive data organization and selection features that allow new users to quickly learn the system without prior training to perform rapid, accurate data entry. Inbuilt timers & alerts, and innovative display of documented data that minimizes information overload, allow better management of medical emergencies. Voice recording of the emergency event is another device feature that is being implemented.

EventDoc System™ is designed and developed using Agile methodology whereby design ideas are quickly translated into cycles of design, implementation and testing. A fully functional first version of the device has been developed and successfully tested using videos of mock codes. Based on user feedback and observations a second improved version of EventDoc System™ is currently being developed. It is hoped that by early 2012 the device will be undergoing clinical trials during 'mock codes' in the hospitals with the intention of moving it into full clinical trials by summer 2012.

# Patient Safety and Quality

## EPOC Committee

In the spring of 2010, conversations with the Quality Improvement and Patient Safety organizations of UW Medicine Health System led to the formation of the Educational Planning and Oversight Committee (EPOC). This committee was formed to identify patient safety/quality initiatives and develop plans for training and deployment within UW Medicine.

Following the success of the Central Venous Catheter training program, in 2010 EPOC members identified training needs around moderate sedation and cross-contamination as future areas of focus. These projects have since been coordinated within sub-committees of EPOC and are currently under development. In the fall of 2009, ISIS was proud to become a nationally recognized TeamSTEPPS training Center for Master Trainer Certification. Since that time, ISIS has hosted eight national courses, two internal courses for UW Medicine entities, and has trained 337 Master Trainers. As the American Institute of Research's (AIR) only West Coast training facility, ISIS provides TeamSTEPPS Master Trainer Courses for UW Medicine medical personnel as well as healthcare providers across the United States.

## TeamSTEPPS Training

Following completion of the National Implementation project, ISIS has established itself as a regional training center for institutions within the Pacific Northwest. Supplementing the National and Internal Master Training Courses, ISIS has also provided "Fundamentals of TeamSTEPPS" training to all incoming residents and fellows for the past two years and single training sessions for various external programs. Furthermore, TeamSTEPPS principles and techniques are currently being used across multiple departments and programs within the UW Medicine Health System,

ISIS has been recognized as a leader in the development of an innovative teach-back training methodology involving the design and production of training videos for TeamSTEPPS and continues to assert its position as a pioneer in team communication.



ISIS PROVIDES "FUNDAMENTALS OF TEAMSTEPPS" TRAINING TO ALL INCOMING RESIDENTS AND FELLOWS.

## In-Situ Training

ISIS' in-situ training, or training at the point-of-care, includes the transformation of actual patient care areas into a simulated training environment. By staging simulators in hospital rooms, clinics, and waiting areas, learners are given the opportunity to practice their skills in a realistic and familiar training atmosphere. University of Washington Medical Center and Harborview Medical Center lessen the gap between practice and reality, providing increased authenticity of scenario based training, and allowing 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 system's issues were identified and resolved. In FY11, ISIS in partnership with the hospitals and Patient Safety Innovations Program completed over 25 in-situ trainings of Code Blue medical emergencies (mock codes) at Harborview Medical Center and 19 in-situ trainings at University of Washington Medical Center. In addition to the Code Blue training sessions, other services are being evaluated for opportunities for future in-situ simulation training opportunities.

## Patient Safety Innovations Program (PSIP)

Announced in the spring of 2010, the Patient Safety Innovations Program (PSIP) was designed by UW Medicine through its commitment to providing the highest possible care to its patients. The program encourages the development

and evaluation of creative innovations for improving patient safety. It was designed to provide pilot funding for innovative research or demonstration projects with the intention to enhance the quality and safety of patient care at University of Washington Medicine.

ISIS currently has three funded projects with the PSIP program, including:

***UW Division of Emergency Medicine TeamSTEPPS***

PI: Dr. William Hurley

This project focuses on the development of team -training curricula within the Emergency Department at both HMC and UWMC. Faculty and staff practice team communication skills in-situ with one of several produced mock code simulation scenarios. In FY11, ISIS in collaboration with the Emergency Department ran 25 mock codes at HMC and 11 mock codes at UWMC.

***An Innovative Multidisciplinary Approach to Code Blue Curriculum Development and Training Aimed at Improving Patient Outcomes – Choosing Havarti over Swiss Cheese***

PI: Dr. Brian Ross

The specific aim of the Code Blue project is to review, redesign, and align the Code Blue response process, documentation and training at both the UWMC and HMC facilities through innovation and interprofessional teamwork. Upon implementation of the newly redesigned Code Blue process and response, there will be standardized training and documentation at both facilities allowing for improved patient safety and process evaluation.

***Video and Simulation Based Identification, Correction, and Monitoring of Critical Events on the Labor and Delivery Unit***

PI: Dr. Michael Fialkow

This PSIP project includes a review of critical events on the UWMC Labor and Delivery Unit. Research staff/faculty will identify areas for improved training and the development of a simulation based training program through systematic review of current event response.

Funding for these three projects totals \$200,000 and will extend through the fall of 2011.



LEARNERS IN THE EMERGENCY DEPARTMENT DEBRIEF FOLLOWING A PSIP MOCK CODE EVENT.

# Highlights

## Collaboration

### Regional Collaboration

ISIS has entered its third year as 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 has opened further collaboration with Seattle Children's, now partnering in curriculum development, research, transport resuscitation training, and other projects. Seattle Children's is also a member of the Pacific Northwest Healthcare Simulation Collaborative (PNWHSC) and ISIS aims to partner with PNWHSC and SC on several upcoming grant proposals.

### International Collaboration

ISIS maintains a long interest in trialing and migrating innovative simulation techniques and curriculum to areas in need. By using the five-state geographically diverse WWAMI region as a test platform, ISIS has begun to identify training programs that might be applicable abroad, most specifically aimed at the training needs of low-middle-income countries.

In February 2011, members of the ISIS staff and research faculty joined a medical brigade to a hospital in the mountains of Catacamas, Honduras. Partnering with Healing the Children, an organization whose sole mission is to provide help to children in need, ISIS participated in a medical trip to treat children and train local physicians. Both traveling ISIS healthcare team members possess a strong interest in global health and the unique problems of healthcare delivery in remote areas of the world.

The Catacamas hospital had recently been built and the operating rooms had gone unused. On this particular trip, a group of sixteen healthcare workers- comprised of orthopaedic surgeons, nurses, family doctors, physical therapists, and anesthesiologists- treated a wide variety of birth defects and bone deformities. In the evenings, team members helped reorganize hospital infrastructure to improve efficiency. From its participation, ISIS was able to gather preliminary data on how low-cost simulation could be implemented in these programs. ISIS continues to create simulation-based training for use in the global health network.

## Individuals & Academics

ISIS regularly conducts tours for a wide variety of individuals. FY11 visitors included:

- Advancing Science in America Foundation (ARCS Event)
- Sakti Srivastava, Stanford University
- Horizon House
- I-Tech, Mozambique
- James Dillon, Madigan Army Medical Center
- Jan-Maarten Luursema, Friend of UW Community
- John Nance and Kathy Bartholomew, Friends of UW Community
- Josh Crosson, Legislative Aide to Congressman Adam Smith, District 9
- Kyla Terhune, Vanderbilt University
- Lesley Watson, Friend of UW Community
- Nancy Farrow, Cleveland Clinic
- Nelson Del Rio, Friend of UW Community
- Northwest Hospital and Medical Center Leadership
- University of Namibia
- UW ACRE (Advisory Committee on Real Estate) Group
- UW Masters in Health Administration Student Tour
- University of Washington Medical Center Service League
- UW School of Medicine Resident Applicants

## Community Outreach

### *Mini-Medical School*

UW Medicine's annual Mini-Medical School program provides a series of lectures and demonstrations to the general public. The program teaches community participants about medical science, patient care and leading-edge research underway at the University of Washington. This past year, ISIS Executive Director, Dr. Brian Ross, was asked to co-host 2011's Mini-Medical School with ISIS Executive Committee member, Dr. Byron Joyner. The six week program included a number of lectures by ISIS faculty members, including a two-part series on technical innovations in medical training.

### Community Education

ISIS supports 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 regular tour to various schools and educational programs. The educational visits for FY11 included:

- Explorer Community School
- Fife High School
- Foster High School
- Glacier Peak High School
- Gonzaga University
- High Line Big Picture High School
- Merit School
- Seattle Academy of Arts and Sciences
- UW Alpha Epsilon Delta
- UW Bioengineering Undergraduate Student Tour
- UW College of Education
- UW Multicultural Affairs: Connex Group
- UW Nursing Summer Camp
- UW Service League Tour
- UW Summer Medical Dental Education Program
- UW Transfer Student Biology Interest Group
- Woodinville High School

### Media and Events

ISIS often receives media coverage and hosts various events. Media and events included:

- Community Internship Program (Quarterly)
- Dawg Daze (September 2010)
- Mini Medical School (February-March 2011)
- Puget Sound Business Journal (July 2011)
- UW Today (April 2011)
- Wired Magazine (December 2010)



AN IMPORTANT AIM OF ISIS IS TO TEACH THE COMMUNITY ABOUT CUTTING-EDGE MEDICAL EDUCATION AND TRAINING.

### Accepted Abstracts and Manuscripts

ISIS faculty continues to generate scholarly products as directly related to ISIS curricular activities. Samples of FY11 publications and presentations are listed below:

- Grigg, E., Nair, B., Ross, B.: Validation of A Novel, Touch-Interface, Documentation System for In-Hospital Emergencies. *Western Anesthesia Resident Conference*, 2011, Tucson, AZ.
- Islam, A., Castellvi, A., Tesfay, S., Wright, A., Scott, D.: Early Surgeon Impressions and Technical Difficulty Associated with Laparoendoscopic Single-Site Surgery: A Society of American Gastrointestinal and Endoscopic Surgeons Learning Center Study. *Surgical Endoscopy*, Epub 2011 Feb 27.
- Jain, A., Ross, B.: Emergency Cricothyrotomy Simulation Training. *Western Anesthesia Resident Conference*, 2011, Tucson, AZ.
- Low, D., Clark, N., Soar, J., Padkim, A., Stoneham, A., Perkins, G. D., Nolan, J.: A Randomized Control Trial to Determine if the Use of the iResus Application on a Smart Phone Improves the Performance of an Advanced Life Support Provider in a Simulated Medical Emergency. *Anaesthesia*, Vol 66 (4), April 2011.
- Metzner, J., Wu, C., Lombaard, S., Kim, S.: Obstetric Bleeding Curriculum. *MedEdPORTAL*, March 2011.
- Petsavage, J., Wang, C., Schopp, J., Paladin, A., Richardson, M., Bush, W.: Cost Analysis and Feasibility of High-Fidelity Simulation Based Radiology Contrast Reaction Curriculum. *Academic Radiology*. Epub 2010 Oct 1.
- Ross, B., Hurley, W., O'Brien, K., Sherman, M.: The Evolution of TeamSTEPPS at the University of Washington Health System. *TeamSTEPPS Collaborative Meeting*, 2011, Denver, CO.
- Ross, B., O'Brien, K., Park, S., Sherman, M.: An Innovative Technique for Teaching "Teach-Back." *National TeamSTEPPS Collaborative Meeting*, 2010, Washington DC.
- Satava, R., Hunter, A: The Surgical Ensemble: Choreography as a Simulation and Training Tool. *Surg Endosc*. S-6. Epub 2011 Apr 12.
- Stogicza, A., Tescot, A., Ross, B., Nalwai-Cecchini, A.: Patient Safety Innovation: Advanced Pain Life Support (APLS) Course for Pain Fellows, A New ISIS Training. *American Society of Interventional Pain Physicians Meeting*, 2011, Washington DC.

- Wang, C., Schopp, J., Petscavage, J., Paladin, A., Richarson, M., Bush, W.: Prospective Randomized Comparison of Standard Didactic Lecture Versus High-Fidelity Simulation for Radiology Resident Contrast Reaction Management Training. *American Journal of Roentgenology*, Vol 196 (6) 1288-95, June 2011.
- Zierler, B., Ross, B., Liner, D. The Macy Interprofessional Collaborative Project, The University of Washington. *Journal of Allied Health*: 39(3):e131-132. 2010.
- Ross, B.: TeamSTEPPS Train the Trainer Conference, Seattle, WA, December 2010.
- Ross, Brian: *TeamSTEPPS*. Medical Surgical Nursing Update, Shoreline, WA, October 2010.
- Ross, B., Dellinger, P., Varghese, T.: *Patients First: Living Up to Our Patient's Expectations*. Mini Medical School, Seattle, WA, March 2011.
- Satava, R: *Robotics, Simulation, and the Future of Medical Technologies*. Seattle Robotics Society, May 2011.
- Zierler, B. *Facilitating Interprofessional Education: Lessons Learned in Education*. Webinar sponsored by the AARP/RWJF Center to Champion Nursing, titled: *Preparing Health Professionals for Interprofessional Collaboration*. July 2011.
- Zierler, B. *Illuminating Pathways to Nursing's Future (Panel Discussion led by Norma Lang, PhD, RN)*. Participated as one of four panel members discuss the future of nursing related to interprofessional education. April 2011.
- Zierler, B. *Interprofessional Education and Practice at the University of Washington*. Presentation to the China Medical University Patient Safety Delegation, University of Washington School of Medicine. July 2010.
- Zierler, B. *Interprofessional Education and Practice: The Challenge of Communication*. Visiting Scholar, University of Arizona School of Nursing. August 2010.
- Zierler, B. *Interprofessional Education, Research and Practice: Opportunities for Providers*. Invited Speaker, WWAMI AHEC Conference, University of Washington, School of Medicine. Seattle, WA, November 2010.
- Zierler, B. *Team-Based Healthcare Delivery: Improving Patient Outcomes*. Invited Speaker, Washington State Nurses Association Biennial Convention. April 2011.
- Zierler, B. *Technology Innovations in Nursing Education: Clinical Informatics and Patient Centered Technologies and Technology Innovations in Interprofessional Team Training*. Invited Speaker. Sao Paulo University, School of Nursing, Brazil. 2010.

## Presentations:

- Amory, J., Anawalt, B., Bremner, W., Joyner, B. (Host), Ross, B. (Host): *The Race for Long-Delayed Male Birth Control*. Mini Medical School, Seattle, WA, March 2011.
- Gibran, N., Quigley, T., Joyner, B. (Host), Ross, B. (Host): *Unique Techniques in Wound Care*. Mini Medical School, Seattle, WA, March 2011.
- Hurley, B., O'Brien, K. *TeamSTEPPS and Simulation*. National TeamSTEPPS Collaborative Meeting, Denver, CO, June 2011.
- Joyner, B., Lendvay, T., Lawrence, R. Ross, B. (Host): *Millennial Generation and Their Medical Technologies*. Mini Medical School, Seattle, WA, February 2011.
- Merati, A., Phillips, J., Rubinstein, J., Joyner, B. (Host), Ross, B. (Host): *World's First Implant at UW Medicine and Other Otolaryngology Lessons*. Mini Medical School, Seattle, WA, February 2011.
- Poole, J., Stempien-Otero, A., Joyner, B. (Host), Ross, B. (Host): *When Your Heart Needs Help: Cardiac Interventions and Repair*. Mini Medical School, Seattle, WA, February 2011.
- Ross, Brian: *Airway Management*, The Airway Course, Seattle, WA, April 2011.
- Ross, Brian: *Why and How We Can Improve Team Communication*, 38<sup>th</sup> Annual Pacific Northwest Regional Respiratory Care Conference and Scientific Assembly, April 2011.
- Ross, B., Zierler, B.: *ISIS, Simulation in Medical Education, Pacific Northwest Healthcare Simulation Collaborative, TeamSTEPPS*, InCite Nursing Faculty Workshop, Seattle, WA, January 2010.
- Ross, B.: *TeamSTEPPS Master Training Session*. TeamSTEPPS National Training Conference, January, March, April, May 2011.







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