Surgical Education, Simulation, and the Revolution in Training: Personal Observations and Predictions
Richard M. Satava, MD

New Paradigms in Surgical Education: Web-Based Learning and Simulation
Harrith M. Hasson, MD

The Top Gun Laparoscopic Skills and Suturing Program
James C. Rosser, Jr, MD, Steven M. Young, MD

A Plea for Aesthetics in Laparoscopy
Oscar D. Almeida, Jr, MD, John Morrison, MD

EuroAmerican MultiSpecialty Congress
Miami Beach, FL
February 23-26, 2005

A PUBLICATION OF THE SOCIETY OF LAPAROENDOSCOPIC SURGEONS
Valleylab is a proud recipient of the 2004 SLS Innovations of the Year for the LigaSure™ V 5 mm sealer/divider.
No matter what your specialty, as a member of the Society of Laparoendoscopic Surgeons (SLS) you’ll benefit from our unique multidisciplinary perspective on the universe of minimally invasive surgery.

From massively-informative annual meetings showcasing the best minds and latest advancements across the endo horizon, to complimentary practice-building presence in our online Find A Doctor/Member Directory, to our highly regarded JSLS and Laparoscopy Today publications and CME programs – SLS members are exposed to a wider range of ideas and richer cross-reference of experiential knowledge than can be obtained through participation in specialty-based organizations alone.

To join or learn more about specific benefits, please visit www.sls.org/members or call 800.446.2659 today. And start getting the macro view on minimal.
TABLE OF CONTENTS

FEATURES
7  Surgical Education, Simulation, and the Revolution in Training: Personal Observations and Predictions
   Richard M. Satava, MD

9  New Paradigms in Surgical Education: Web-Based Learning and Simulation
   Harrith M. Hasson, MD

14  The Top Gun Laparoscopic Skills and Suturing Program
   James C. Rosser, Jr, MD
   Steven M. Young, MD

19  A Plea for Aesthetics in Laparoscopy
   Oscar D. Almeida, Jr, MD
   John Morrison, MD

23  Making a Presentation
    Audiovisual Aids: Friend or Foe?
    Gustavo Stringel, MD

25  The Laparoscopy Web

26  Products for the Laparoscopic Surgeon

28  Calendar of Events

CONFERENCES
6  14th International Congress and Endo Expo 2005
    The Laparoscopy and Minimally Invasive Surgery Event of the Year
    San Diego, September 2005

29  2nd EuroAmerican MultiSpecialty Congress of Laparoscopy and Minimally Invasive Surgery
    A unique exchange of culture and education...
    Miami Beach, February 2005

ABOUT THE COVER
Intuitive Surgeals’ robotic arm emulates the artful hand of a surgeon.
Introducing the definitive, all-new technique guide to complications of minimally invasive surgery. The medical and legal communities continue to need up-to-date information on negotiating the learning curve of minimally invasive, image-guided surgery. Prevention and Management of Laparoendoscopic Surgical Complications, 2nd Edition comprehensively addresses specific complications of individual procedures as well as general issues and complications that arise in all applications of laparoendoscopic surgery.

There's no other reference like it: a comprehensive multidisciplinary reference text assembled by the editors of SLS, containing the cumulative experience and perspective of 93 noted experts in laparoscopy from all relevant specialties.

A broader focus helps narrow the unknowns. Prevention and Management's unique multispecialty approach opens the window to nuances and techniques otherwise missed when focus is restricted to an individual specialty. It provides a highly-efficient means of gathering the best information from the best minds working in laparoscopy today.
SLS MISSION STATEMENT

The Society of Laparoendoscopic Surgeons (SLS) is a non-profit, multidisciplinary and multispecialty educational organization established to provide an open forum for surgeons and other health professionals interested in laparoscopic, endoscopic and minimally invasive surgery.

SLS endeavors to improve patient care and promote the highest standards of practice through education, training, and information distribution. SLS provides a forum for the introduction, discussion and dissemination of new and established ideas, techniques and therapies in minimal access surgery.

A fundamental goal of SLS is ensuring that its members have access to the newest ideas and approaches, as rapidly as possible. SLS makes information available from national and international experts through its publications, videos, conferences, and other electronic media.

LAPAROSCOPY TODAY is published twice per year by the Society of Laparoendoscopic Surgeons, 7330 SW 62nd Place, Suite 410, Miami, FL 33143-4825, USA. It serves as a forum for the exchange of information and ideas among professionals concerned with minimally invasive surgery. The submission of articles, letters to the editor, news about SLS members, and other items of interest to Laparoscopy Today readers is encouraged.

Opinions expressed by authors and advertisers contributing to Laparoscopy Today are solely those of the authors and advertisers and do not necessarily reflect the opinions of the Society of Laparoendoscopic Surgeons.

Postmaster: Send address changes to SLS, 7330 SW 62nd Place, Suite 410, Miami, FL 33143-4825, USA.

Subscription rates: Individuals in the United States, $49; Individuals outside the United States and Institutions, $75.

Reprints: Orders of over 100 copies should be addressed to Heather Edwards, Reprint Sales Specialist, Cadmus Professional Communications, 940 Elkridge Landing Road, Linthicum, MD 21090, USA. Telephone: 410 691 6214, Fax: 410 684 2788, E-mail: EdwardsH@cadmus.com

GUIDELINES FOR LAPAROSCOPY CONTRIBUTORS

Submit articles, case studies, review articles, product reviews, news about minimally invasive surgery, and letters to the editor as an email message or attachment. Materials may also be submitted on 3 1/2 inch diskettes, zip disks, or CDs.

All submissions should include the telephone number, fax number, and e-mail address of the corresponding author. For manuscripts with a single author, a brief biographical sketch and a picture of the author should also be submitted. For manuscripts with multiple authors, please include each author's affiliation.

All material should be prepared in accordance with the American Medical Association Manual of Style with references listed in citation-sequence format. Average article length is 1000 words.

Images may not be embedded in manuscripts. To inquire about specifications for artwork submissions, please contact SLS.

All material is subject to copyediting.

Send materials and editorial inquiries to J. Gisele Muller, Laparoscopy Today, Society of Laparoendoscopic Surgeons, 7330 SW 62nd Place, Suite 410, Miami, FL 33143, USA. Telephone: 305 665 9959, Fax: 305 667 4123, E-mail: Gisele@SLS.org

©Copyright 2004 by SLS. For more information about the Society of Laparoendoscopic Surgeons, please visit our website at www.Laparoscopy.org or www.SLS.org.
THE LAPAROSCOPY AND MINIMALLY INVASIVE SURGERY EVENT OF THE YEAR

CALL FOR ABSTRACTS
14TH INTERNATIONAL CONGRESS & ENDO EXPO
SLS ANNUAL MEETING • SEPTEMBER 14-17, 2005

FOR MORE INFORMATION OR TO PARTICIPATE IN THIS CONGRESS AS A PRESENTER CONTACT: WWW.SLS.ORG

MANCHESTER GRAND HYATT HOTEL • SAN DIEGO CALIFORNIA, USA

7330 SW 62nd Place
Suite 410 / Miami, FL
USA 33143-4825

Accreditation: The Society of Laparoscopic Surgeons (SLS) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education to physicians. Designation: This activity has been approved for AMA PRA credit.
A revolution is occurring in surgical education, driven by the introduction of surgical simulators for the training and assessment (and eventually the certification) of surgical technical skills. The revolution is a combination of devices (simulators), processes (curriculum-based training), validation (objective assessment), and policy (criterion-based benchmarks) to usher in proficiency based training. This results in a fundamental shift in the way surgeons will be trained in the future.

Two factors initiated this revolution. First came the introduction of surgical simulators as a technical tool that can replace real objects (patients, animal surrogates, or inanimate objects) by computer images. The simulators are simultaneously a training and an assessment device, for the signals from the handles that change the video image of the simulation are also tracked by the computer and measure performance. As the decade of simulators has progressed, the visual realism has improved and haptics (touch) has been added to some models. Second came the process of objective assessment, as initially demonstrated by Reznick (Objective Structured Assessment of Technical Skills – OSATS) and Fried (McGill Inanimate System for Training and Evaluation of Laparoscopic Skills – MISTELS). This methodology applies a rigorous design to the training of fundamental surgical technical skills and then stringently evaluates performance by specific metrics. The result has been that technical skills can be quantitatively measured, and the individual student's performance can be objectively and accurately assessed.

Once simulation started, in the 1980s and 1990s, acceptance was slow. It was necessary for 2 other factors to be introduced before the surgical community was willing to accept simulation as a legitimate tool for surgical training. The first step occurred as rigorous validation studies were conducted that proved unequivocally that training on simulators improved performance in the operating room. Numerous studies are now available on many different simulators, both computer based and mannequin based, to support the important contribution of simulators to training. Some of the earliest results (Reznick and Fried) presaged similar results in computer-based simulators. The second factor was understanding that simulators were not meaningful without the context of a total curriculum. A simulator is simply one “tool” in the surgical educator's toolbox in training a resident. A curriculum that begins with anatomy, steps of the procedure, and error identification leads up to the skills performance on the simulator, and then is followed by the objective assessment, outcomes analysis, and feedback to the student.
for improvement of performance. The simulator must be embedded within such a comprehensive teaching curriculum.

Simulation for surgical skills is now firmly entrenched in the mindset of surgical education, but it is necessary to move implementation into training programs. Yet another step will be required—the establishment of levels of proficiency (for each simulator) by experienced (expert) surgeons. When the experienced surgeon performs on the simulator, the results can be considered the “criterion” that the student must achieve before being allowed to perform surgery or a specific procedure on a patient. This “proficiency-based” training will have 2 profound influences. First, students will continue to train until they have achieved proficiency—not in the operating room on a patient, but in the laboratory by objective performance metrics to ensure the highest quality of error-free surgery before ever operating on a patient. Second, the student will train for however long is needed to achieve proficiency—whether it be 5 trials on the simulator or 25 trials. Thus, the training of a surgeon may no longer be for a fixed time period or number of procedures, rather the student will train until proficient. This may well change how training programs are organized—some students will take 3 years to 4 years, while others may take 6 years to 7 years. What will be certain is that residents will not graduate until they have competency proven objectively and unequivocally.

The time has come to move beyond the Halsted model of surgical training and into a new era—proficiency-based training.

Address reprint requests to: Richard M. Satava, MD, Professor of Surgery, University of Washington Medical Center, Room BB 430, Seattle, WA 98195, USA. Telephone: 206 616 2250, E-mail: rsatava@u.washington.edu

Richard M. Satava, MD, is a Professor of Surgery at the University of Washington School of Medicine, a Special Assistant in Advanced Technologies at the US Army Medical Research and Material Command in Ft. Detrick, Maryland and will soon return as a program manager at the Defense Advanced Research Projects Agency. He has served on the White House Office of Science and Technology Policy Committee on Health, Food, and Safety is a Past President of the Society or Laparoendoscopic Surgeons.
At some time in the future, the selection process of prospective high-risk surgeons such as laparoscopic surgeons will include psychomotor and psychosocial testing for pertinent abilities and traits. Some personality traits will be deemed desirable, others will not. For instance, high scores for perseverance, motivation, and the ability to respond appropriately to new information (judgment) may mitigate lower scores for inherent technical ability. Ideally, successful candidates would become involved throughout their career in ongoing training and assessment of their cognitive competence, decision making, and technical skills. In other words, ongoing assessment of knowledge (cognition), response to that knowledge (judgment), and the ability to implement the response (manual skills) are the 3 facets of surgical competence.

At this time, the rapidly evolving technology of Web-based learning represents a disruptive technology that requires realignment of traditional methods of surgical learning into new paradigms of knowledge acquisition.

Satava¹ has recently suggested that the ability to gain access to new information through the Web, screen it for reliability, and respond to it by possibly changing behavior is more important than having information of uncertain value in one’s memory bank. Outcome measures will not depend on what students know, but on what decisions they make when given new information.

Technical competence in laparoscopic surgery depends on the development of basic abilities and skills peculiar to the technique. Operating on 3-dimensional objects from a 2-dimensional image projected on a video screen is the basic fundamental ability required. This involves a visio-spatial depth perception component as well as a psychomotor component. In simulation, it is manifested in coordination exercises that develop or assess spatial perception and orientation, tracking, hand-eye coordination using dominant and nondominant hands, translation, and precise manipulation and targeting. Although the distinction is not always clear, fundamental abilities are used to develop basic skills, a combination of which is needed to perform a task. A series of tasks are integrated to simulate a surgical procedure.² In simulation,
the skills/task categories are manifested in exercises dealing with bimanual dexterity, precise suturing, knot-tying, cutting, and other manipulations.

Objective assessment of simulation performance is integral to the success of the concept. Without valid performance metrics, simulation training would lose much of its credibility and value. Several metrics have been proposed. For instance, skills assessment in the McGill system of metrics\(^3\) is based on time to completion with penalty points deducted for errors and imprecision. However, the system does not measure qualitative details of laparoscopic movements. Such a refinement is now available in the Blue DRAGON Markov Model system developed by Rosen and associates\(^4\), as well as the CELTS system developed by Stylopoulos and associates\(^5\).

The postgraduate course Role of Simulation in Residency Training and Continuing Medical Education, held at the SLS 13th International Congress was developed to deliver information about the use of simulation as a new learning paradigm. The goal was to give attendees insight into skills training program which including an opportunity to test out some of the latest simulators. Eight simulator and simulation software developers participated in the course: Immersion Medical, Surgical Science, Simbionix, Medical Education Technologies Incorporated, The Simulation Group at CIMIT/MGH, Realsim Systems, Haptica, and Simulab.

Simulation and Web-based learning are synergetic and complementary technologies. E-learning can provide and test the knowledge basis of advanced simulation. Virtual reality simulators can be linked across continents through the Internet in a seamless environment. Even physical reality simulators that are computer based are Web-compatible. Although the actual physical performance cannot be linked or duplicated through the Internet, the performance data can be transmitted and pooled to central locations. When video performances of the normalized expert (reconfigured and duplicated robotically) become available with systems like the Blue DRAGON Markov Model and CELTS, it will be possible to conduct Web tutorials. The remote expert can point out specific qualitative differences between the subject tested and the normalized expert then recommend remedial action.

With rapid advances in 3-dimensional visualization of the human body and computing power, we can look forward to simulators capable of simulating an entire procedure. Total immersion virtual reality (TIVR) workbenches will offer realistic interactivity combining tissue modeling, haptics, graphics, and physiology in single-system architecture. These advanced simulators will be procedure specific and will require a certain amount of knowledge (through e-learning) about the patient, procedure, and disease that can be tested before simulation surgery. To increase the fidelity of the system, new information (in the form of altered anatomy and distorted cleavage planes) must be presented to the simulation surgeon to test judgment. Only then will simulation fulfill its promise by developing and evaluating all three facets of surgical competence: knowledge, response to the knowledge by making a judgment, and manual implementation of the response.

Address reprint requests to: Harrith Hasson, MD, 6250 Winter Haven Rd, NW, Albuquerque, NM 87120. Telephone: 505 792 0240, Fax: 505 792 0241, E-mail: DrHasson@aol.com

Harrith M. Hasson, MD, currently serves as a Clinical Professor at the University of Chicago. Dr. Hasson holds 52 patents and is the Secretary-Treasurer of the Society of Laparoendoscopic Surgeons.
VIRTUAL REALITY SIMULATORS

**Endoscopy AccuTouch System, Immersion Medical, www.immersion.com**

Computer-based system for teaching and assessing motor skills and cognitive knowledge, enabling novices and experienced physicians to practice in a safe environment. Using real-time computer graphics, including anatomic models developed from actual patient data and a robotic interface device, force is transmitted through the flexible scope to provide tactile sensations mimicking the actual feel of a procedure.

**Skills/Procedures:** Flexible bronchoscopy, upper and lower gastrointestinal flexible endoscopy

**Dimensions:** 165 x 58 x 88 cm

**Cost:** $164,900 with all modules

**Hysteroscopy AccuTouch System, Immersion Medical, www.immersion.com**

This training aid showcases Immersion Medical’s patented force-feedback technology. By digitally simulating real life procedures, complications, and tool/tissue interaction it provides an effective and safe learning experience.

**Skills/Procedures:** Myoma resection, resectoscope operation, removing fibroid tissue using loop electrode

**Dimensions:** Base 15 x 18 x 23 cm; Arm 18 x 12 x 20 cm

**Cost:** $59,950

**Laparoscopy AccuTouch System, Immersion Medical, www.immersion.com**

The Laparoscopic Surgical Workstation was developed with surgeons to achieve high strength, high fidelity haptics. The workstation consists of two laparoscopic tools with interchangeable handles. Each tool has four degrees of freedom. In conjunction with Surgical Science’s LapSim simulation software, this system provides realistic simulation of the intraabdominal environment.

**Skills/Procedures:** Cutting, camera navigation, clip applying, suturing dissection followed by clipping and cutting of gallbladder’s bile ducts and blood vessels, tubal occlusion, ectopic pregnancy removal, suturing stage of myomectomy

**Dimensions:** Interface including haptics 30 x 34 x 33 cm

**Cost:** $67,950 plus $15,400 for each software module

**GI Mentor, Simbionix, www.simbionix.com**

The GI Mentor is a computerized, interactive simulator for gastrointestinal endoscopy. It offers true-to-life sensations and realistic visual feedback.

**Skills/Procedures:** Upper and lower GI diagnostic and therapeutic procedures including flexible sigmoidoscopy, colonoscopy, gastroscopy, ERCP, emergency bleeding; endoscopic ultrasonography

**Dimensions:** System and trolley 120 x 53 x 160 cm; Mannequin 130 cm; Simulation processing unit 43.5 x 18.5 x 42 cm

**Cost:** $60,000–100,000 depending on options selected

**LAP Mentor, Simbionix, www.simbionix.com**

LAP Mentor enables hands on practice for a single trainee or a team. It allows realistic visualization of
XITACT LS500

**Laparoscopic Training System**

**System:** XITACT LS500

**Dimensions:**
- Platform: 60 x 40 x 160 cm
- Mannequin: 45 x 38 x 22 cm
- Cost: $60,000–100,000

**Skills/Procedures:** Camera manipulation, hand eye coordination, two-handed maneuvers, clip applying, and translocation of objects, virtual cholecystectomy.

**System:** XITACT ITP

**Dimensions:**
- Footprint: 18 x 16 x 40 cm

**Skills/Procedures:** Basic Xitact software simulates laparoscopic cholecystectomy.

**MIST**

**System:** Xitact, www.xitact.com

**Dimensions:**
- Footprint: 18 x 16 x 40 cm

**Skills/Procedures:** Camera navigation, hand eye coordination, suturing and knot tying, situational awareness.

**HYBRID SIMULATORS**

**CELTs:** Computer Enhanced Laparoscopic Training System


**Skills/Procedures:** Developed as a research tool to support creating of a task-independent scoring system for manual/surgical tasks, CELTS makes use of position tracking hardware and software to enable quantitative scoring of depth perception, ambidexterity, smoothness of motion, orientation, path length and time. Each institution can generate its own preferred techniques for each task, and easily create training exercises for its students. The system is intended to be used with each facility’s own laparoscopic instruments and on a relatively inexpensive PC.

**Skills/Procedures:** Grasp and transfer; free space mating of two objects in which one elongated object is grasped with a second object with a mating cavity; pick and place, in which rings are placed onto upward pointing pegs; suturing; and knot tying.

**Unavailability**

**Currently only one in existence. Estimated cost for additional units $30,150**

**LAPAROSCOPY TODAY**

The LTS2000 is a computer based physical reality simulator for developing and testing laparoscopic surgical skills. It consists of a rotating carousel with 6 electronic task stations equipped with sensors that are linked to the controller that connects to the video camera, monitor, and PC. The ISM60 Interactive Sensing Module adds electronic scoring and feedback to the LTS2000 platform. The System is used with a standard video laparoscopy set-up or a camera attachment.

Skills/Procedures: Spatial perception and orientation, hand eye video coordination using dominant and non-dominant hands, precise manipulation and targeting, knot tying, testing knot integrity with electronic tensometer, precise cutting Dimensions: 20 x 20 x 12 in Cost: $16,600 for platform with integrated camera, light bracket, and electronic ISM60 module; $18,800 complete system with laptop and video monitor

Haptica ProMIS, Haptica, www.haptica.com

ProMis is a hybrid simulator that works by tracking real instruments as they manipulate virtual and physical models to deliver feedback in multiple formats. The simulator provides accurate measurement regardless of exercise type. Real instruments are used, and tutors and researchers can create their own physical exercises.

Skills/Procedures: Laparoscope orientation, instrument handling, dissection, diathermy, suturing, and intracorporal knot-tying Dimensions: 30 x 23 x 14 in Cost: $25,000–33,000 depending on options selected

PHYSICAL REALITY SIMULATORS

MedinaTrainer, MedinaTrainer, www.medinatrainer.com

MedinaTrainer is an open view physical reality trainer. During training sessions surgeons can either look directly down at the tissue suspender or use a video display. The trainer allows use of regular laparoscopic instruments while practicing on natural tissue or synthetic models of any size. It’s rings work by restraining the motion of laparoscopic instruments in space, allowing only those movements that the surgeon would encounter in actual surgery. Specimens of different sizes can be placed at different angles during practice sessions.

Skills/Procedures: Basic, intermediate, and advanced laparoscopy skills depending on task design Dimensions: Ring diameter 6 cm; Pole height 22–30.5 cm; Suction base 19 x 19 cm Cost: $400


A physical reality based simulator with haptics, the LapTrainer provides SimuVision through a boom mounted digital camera, allowing single or team use. The trainer offers complete flexibility of instrument use and freedom of trocar port location and can be attached to a projector.

Skills/Procedures: 3D to 2D translation, instrument familiarization, left hand and right hand coordination, basic and advanced suturing, laparoscopic cholecystectomy, laparoscopic Nissen fundoplication Dimensions: 30 x 18 x 10 in Cost: $1,950

Tower Trainer, Simulab Corporation, www.simulab.com

Tower Trainer is a physical reality based with haptics and has an adjustable height periscope. It utilizes the Simulab Simuview imaging system that allows realistic portrayal, ideal for laparoscopic training in a two-dimensional field without setting up traditional video-endoscopic camera equipment. Used primarily for dissection, suture and knot training, a removable cover conceals the subject from direct view.

Skills/Procedures: 3D to 2D translation, instrument familiarization, left hand and right hand coordination, basic and advanced suturing Dimensions: 16 x 16 x 32 in Cost: $1,495


Portable compact and light weight, TRLCD has a 10” color LCD panel monitor and built in video camera. Use your preferred instruments to practice with any specimen or material. There are seven portals fitted with grommets that are sized to hold a 10 mm trocar. Camera stick allows practice with an assistance.

Skills/Procedures: 3D to 2D translation, hand eye coordination, use of laparoscopic instruments Dimensions: 17.5 x 12.5 x 8.5 in Cost: $1,869 with Camera Stick and Specimen Mounting Pad


MATT is a portable laparoscopic technique trainer for structured and staged hands-on training. The carrying case unfolds to provide an integral work surface and tray in the base and storage compartment in the lid. MATT can be used for open surgical practice, or with the frame and abdominal wall in place, for laparoscopic technique training. Trocar and instruments can be triangulated freely. Flexible lockable arm accommodates instruments 5-14 mm in diameter.

Skills/Procedures: Hand eye coordination, use of laparoscopic instruments, techniques and skills depending on the synthetic soft tissue component presented Dimensions: 13 x 20 x 8 in Cost: $1,750

Disclaimer: All costs should be considered approximate and may vary significantly depending on the specific modules, options, and preferences selected. For pricing appropriate to your specific needs, please contact the companies listed.
A MODEL FOR SURGICAL TRAINING

The Top Gun Laparoscopic Skills and Suturing Program

James C. Rosser, Jr, MD, Steven M. Young, MD

INTRODUCTION

As we stand at the dawn of a new century, it has been over 30 years since Kurt Semm initiated the era of operative laparoscopy. The entrance of general surgeons into the practice of minimal access surgery has accelerated the appearance of new applications and techniques. But as we bask in the glory of this achievement, a bittersweet residue hangs over what has been accomplished. At the 10th International Congress of the Society of Laparoendoscopic Surgeons in 2001, French gynecological surgeons reported that only 15% of their surgeons were routinely practicing advanced videoscopic procedures. General surgeons in this country have not fared better. This has to represent one of the most noted examples of underachievement in the history of surgery. Many reasons have been offered as an explanation to this stagnation. But, the key factor is that the majority of surgeons practicing today do not possess the skills necessary to execute advanced videoscopic procedures safely and efficiently.

As we search for answers, we can draw similarities from the plight of United States naval aviation during the early days of the Vietnam War. During this time, the Navy and Air Force began to show signs of years of de-emphasis on air combat maneuvering training and an increased reliance on technology and air-to-air missiles. As the result of this neglect, their kill ratio sank alarmingly from 12:1 during previous wars to 2:1. This refers to the number of aircraft lost for every one of the enemy that is shot down. Out of this dark and gloomy period of aviation history, a rededication was born to the credo, “We fought to fly, we fly to fight, and we fight to win,” and a command decision was made to go “back to basics.” The special school that served as the launching pad of this policy was called Top Gun.

Top Gun is a 6-week long boot camp for fighter pilots that pushed the aircrews and equipment beyond their previously believed envelope of performance and made them better. A stressing of the fundamentals of air combat maneuvering was “prosecuted with extreme prejudice.” These “best of the best” pilots were then redeployed to the fleet and the kill ratio for the Navy went back up to 12:1. Today in any sky on this planet, our pilots prowl with a “controlled arrogance” that is predicated on the philosophy “train as you fight and fight like you train.”

In a similar fashion, surgeons and industry at one time had the notion that technology would minimize the need to establish the unique skill set required for the videoscopic environment. As surgeons today face the daunting task of developing skills necessary for advanced minimally invasive procedures, there must be a willingness to recommit to training in basic and advanced skills including suturing. In the open surgical arena, most attending surgeons would
not allow a resident to perform a procedure without being able to suture. That standard must not be abandoned today. The Top Gun Laparoscopic Skills and Suturing Program is meant to provide an effective and rapid development platform for skills acquisition and suturing excellence in the videoscopic environment. It proudly patterns itself after a similar training methodology that forms the core curriculum of the Navy's Top Gun school for fighter pilots. This includes a breakdown of complex tasks to their most elemental level, preparatory drills to facilitate complex task execution, teamwork building, and the use of metrics to evaluate performance. In addition, each time a course is conducted, it honors the men and women who defend our country and make the extraordinary seem routine. Excellence is not built on just talent but also on superior tactics and techniques. Surgeons are not born to greatness but rather they are made by a willingness to be trained.

HISTORY

The first Top Gun Laparoscopic Skill and Suturing Program was held in 1992 on the island of Aruba, sponsored by the Academic Medical Center in Amsterdam, Holland. The 20 participants representing 8 countries could not tie an intracorporeal knot within 10 minutes at the beginning of the course, and all could perform the task in less than 2 minutes at the end of the course. With the positive feedback from this course, it was offered in the US with the support of Carlos Babini and the United States Surgical Corporation (USSC). In 1995, the program crossed over into cyberspace with production of a CD-ROM whose effective knowledge transfer capability as described by Rosser et al1 will be pivotal to the development of a distance education program. In 1996, under the visionary guidance of Charlie Johnson of USSC, a Top Gun Course kit was distributed to over 50 university and community programs in the US and abroad. Many of those programs still feature Top Gun training as an element of their minimally invasive training program.

In 1996, Top Gun the competition debuted at the annual clinical congress of the American College of Surgeons, serving as a fun, competitive venue to put videoscopic skills acquisition front and center. From the preliminary elimination match open to the general membership of the congress, the top 7 qualifiers received a chance to compete for the title of “Top Gun.” The final Top Gun competition is a hard-hitting multimedia extravaganza with the moderator continually attacking each contestant in an effort to simulate the pressures of the operating room. This competition has now been showcased at the SLS International Congress and SAGES for the last 4 years.

Some traditional academic educators think that the Top Gun shootout is an undignified demonstration that has a carnival atmosphere and fully breaks with surgical education tradition. For the over 1000 individuals who have participated, they would probably beg to differ. This number does not include the throngs of people who have witnessed the event, or the unknown number of surgeons who did not participate but have been inspired to work on their skills.

METHODOLOGY

The Top Gun training philosophy separates itself from other training methodologies by several distinguishing characteristics. In addition to ergonomic correctness as exemplified in its trocar placement strategy, the Top Gun methodology also stresses utilization of the nondominant hand in all maneuvers including suturing. In fact, Level II, the Masters Program, requires that the participant show proficiency in suturing with the nondominant hand. The operative circumstance rather than hand dominance should dictate the choice of suturing options. It also believes that preparatory drills can impact skill transference. As described by Rosser et al in 19972 and 1998,3 validated preparatory...
drills, the “Cobra Rope Drill” (Figure 1), the “Pea Drop Drill” (Figure 2), and the “Terrible Triangle Drill” (Figure 3), prepare the student for execution of a standardized suturing algorithm. The suturing drill (Figure 4) requires the ability to incorporate the skills developed from the dexterity drills to place a suture video-scopically by throwing 3 square knots. All of this is done under the pressure of time and dynamic supervision meant to improve quality control. Verbal instruction and distraction simulate the pressure profile of the operating theater. All times required to perform drills are recorded, and a performance report with standardized percentiles is given to every student.

FUTURE

The possibility of mass distribution of the Top Gun program is now possible with the development of the Top Gun remote education program that features a CD-ROM tutorial, videoconference lectures, and skill development exercises. The feasibility of this program was demonstrated with Operation Validation where the Top Gun program was conducted in England while the course director was headquartered at the Yale University School of Medicine. The success of this project suggests the possibility of multiple programs being given simultaneously around the world. With the availability of the performance database representing 5000 surgeons, follow-up evaluation of a student’s progress can be done on an ongoing basis via the Internet.

In response to a critique by Smith et al4 of the Top Gun training program’s reliance on speed as the primary evaluation tool, Rosser et al5 have introduced a training arena called the Gabriel-Rosser Inanimate Proctor. This appliance represents a “hybrid” training platform that retains the advantages of traditional tabletop trainers while evaluating the participant’s control of economy of motion and registers errors. When the participant exhibits poor instrument control, a light flashes, a buzzer sounds, and an error is recorded. This platform has now been used in almost 400 participants and feasibility and validation studies are pending.

At the Medicine Meets Virtual Reality Conference (MMVR) in January 2004, Rosser et al6 presented data that showed that participants with past, current, and demonstrated video game experience performed better during the Top Gun Laparoscopic Skill and Suturing Program. In addition, preliminary data suggest that warming up with video games may con-
tribute to increasing videoscopic task performance. In light of these data, future Top Gun programs will feature video gaming as one of the preparatory exercises in the course curriculum. As an interesting spin-off, 2004 saw the appearance of the Top Gun for Kids program. This program is meant to be an "edutaining" component of an effort meant to attract more of our youth to cutting edge career choices in science, engineering, technology, and medicine. The children first demonstrate their video gaming prowess, and then they show their ability to perform in the videoscopic environment using the same drills that surgeons have to perform during Top Gun. The hope is that this can lead to local, regional, and finally a national competition with multiple corporate sponsors and scholarships for the children.

In 2004, a concerted effort was started to make the Navy aware of this training program with the hope that it could be adopted as a training component for Navy surgeons. This can also serve as a high profile public relations tool to bring added exposure for the Top Gun Laparoscopic Skills and Suturing Program. The first phase began with an official visit to the USS Harry Truman and Naval Air Station Oceana, in Norfolk, Virginia. This is the home of an F-14 Tomcat air wing, and the commodore was presented with a special honorary Top Gun Laparoscopic Skill and Suturing Program award and proclaimed an honorary Top Gun Cyber Surgeon (Figure 5). It is hoped that this will be followed up with an official Top Gun skills course in 2005 for Navy surgeons and resident staff. The future of Top Gun has
never been brighter and hopefully these efforts can assist in placing skill and suturing as an achievable priority for surgeons. We are hopeful that this can lead to a day when 85% of surgeons routinely perform advanced minimally invasive procedures worldwide.

Address reprint requests to: James “Butch” Rosser, Jr, MD, Beth Israel Medical Center, 350 East 17th St, 16BH, New York, NY 10003, USA. Telephone: 212 420 4337, Fax: 212 844 1039

James C. Rosser, Jr, MD, is the Chief of Minimally Invasive Surgery at Beth Israel Medical Center in New York and is also Director of Beth Israel Advanced Medical Technology Institute. Dr. Rosser travels the globe teaching his Rosser Top Gun Laparoscopic Skills and Suturing Program.

Steven M. Young, MD, is a laparoscopic fellow at the Beth Israel Medical Center. Since beginning his fellowship, Dr. Young has helped instruct numerous Top Gun Laparoscopic Suturing courses. At the SLS 13th International Congress he moderated the Top Gun competition.

References:


JOURNAL WATCH: Surg Endosc

The Impact of a Resident’s Seniority on Operative Time and Length of Hospital Stay for Laparoscopic Appendectomy • Shabati M, Rosin D, Zmora O, et al. 2004;18:1328-1330. Reviews patient records for 341 appendectomies by residents alone. Operating times, conversion rates, and lengths of stay for surgical teams lead by residents with 3 or fewer years were compared with those lead by residents with 3 or more years and with those consisting of two residents with 3 or fewer years.

JOURNAL WATCH: JSLS

Prevention of De Novo Adhesions by Ferric Hyaluronate Gel After Laparoscopic Surgery in an Animal Model • Detchev R, Bazot M, Soriano D, Durai E. 2004;8:263-268. Results obtained with a rabbit model suggest that routine intraperitoneal application of hyaluronate gel does not prevent adhesion formation after laparoscopic surgery.

JOURNAL WATCH: Outpatient Surgery Magazine

With advances in technique and instrumentation, laparoscopy continues to lead the revolution of minimally invasive surgery. The benefits of laparoscopic surgery have been demonstrated to equal and often surpass the benefits of open laparotomy for many gynecologic, general surgery, and urologic procedures. Unfortunately, little emphasis has been placed on the cosmetic results and the aesthetic potential of these laparoscopic procedures. The majority of disfiguring laparoscopic cicatrices can often be prevented by careful preoperative planning and attention to cosmesis. Surgical technique, trocar size, and placement play a major role in the aesthetic results. Although not every laparoscopic case can have “aesthetically friendly” trocar placement, attention to cosmesis must become the rule rather than the exception. Factors that influence wound healing are genetic make-up, race, age, anatomical site, wound tension, and surgical technique. Whereas, some of these factors cannot be changed, others can.

LANGER’S LINES

In 1861, the Austrian anatomist Carl Ritter Von Langer described the structural orientation of the fibrous tissue of the skin. These natural cleavage lines usually run horizontally across the abdomen and pelvis. How an incision is surgically placed in relation to these lines significantly influences postoperative cicatrix formation. Incisions made parallel to these lines heal with a fine linear cicatrix. The less parallel the incision to Langer’s lines, the wider the cicatrix. Although some individuals have a genetic predisposition to keloid formation, incisions along these lines heal with less keloid formation. In addition, the use of a #11 scalpel blade will enable the laparoendoscopic surgeon to make a more precise incision in relation to these lines.

NATURAL BODY CREASES AND FOLDS

Natural body creases and folds allow trocar placement in sites where the cicatrix can often be camouflaged. Two important sites include the umbilicus and the lower abdominal fold. Through the umbilicus, a large 12-mm trocar can be inserted with cosmetic impunity. Large laparoscopic instruments and surgical specimens can be placed/retrieved through this port. Because the umbilicus is a central anatomical site for many laparoscopic procedures, it should be used as often as possible. To achieve optimal aesthetic results, incisions should be made inside the umbilicus, and not periumbilically where the cicatrix will be readily visible rendering the cosmetic results unacceptable. Trocar placement outside of the umbilicus, where the same operative objective can be met by placement inside the umbilicus, should be a thing of the past. A parallel incision on the lower abdominal fold can be used for large trocars when necessary. Laparoscopic appendectomy procedures can use this anatomical site efficaciously for placement of the large trocar and removal of the appendix, resulting in excellent cosmesis.

Oscar D. Almeida, Jr, MD, John Morrison, MD

COSMESIS
The majority of disfiguring laparoscopic cicatrices can often be prevented by careful preoperative planning and attention to cosmesis.

**TROCAR PLACEMENT AND SIZE**

Beyond the use of natural body creases and folds, trocar placement should be considered in anatomical areas with decreased skin tension. Marking the trocar placement sites preoperatively enhances trocar placement and maximizes the cosmetic results. Wounds healing with increased skin tension will result in a larger cicatrix. As a rule, the smaller the trocar size, the smaller the cicatrix. Therefore, it is cosmetically preferable to use the smallest diameter accessory trocars whenever possible. With the availability of most 2-mm accessory instruments, the majority of laparoscopic cases can be performed as microlaparoscopically assisted.

**MICROLAPAROSCOPY AND MICROLAPAROSCOPIC-ASSISTED PROCEDURES**

The use of microlaparoscopic and microlaparoscopic-assisted procedures has been extensively chronicled. Table 1 summarizes the diagnostic and operative procedures using microlaparoscopy reported in the literature. In gynecologic laparoscopic surgery, exceptional aesthetic results are evident (Figure 2) when comparing an MAVH (microlaparoscopic-assisted vaginal hysterectomy) with a traditional LAVH (laparoscopic-assisted vaginal hysterectomy). Similar cosmetic superiority (Figure 3) is demonstrated in general surgery when one

---

Table 1. Procedures Using Microlaparoscopy

<table>
<thead>
<tr>
<th>Diagnostic Procedures</th>
<th>Operative Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating acute and chronic abdominal/pelvic pain</td>
<td>Primary lysis of adhesions</td>
</tr>
<tr>
<td>Diagnosing endometriosis</td>
<td>Fulguration of endometriosis</td>
</tr>
<tr>
<td>Diagnosing abdominal/pelvic adhesions</td>
<td>Appendectomy</td>
</tr>
<tr>
<td>Evaluating ovarian cysts</td>
<td>Aspiration of ovarian cysts</td>
</tr>
<tr>
<td>Differentiating appendicitis/PID</td>
<td>LUNA</td>
</tr>
<tr>
<td>Operative Microlaparoscopic Procedures</td>
<td>Cholecystectomy</td>
</tr>
<tr>
<td>MAVH</td>
<td>Others</td>
</tr>
</tbody>
</table>

---

Figure 1. A. Natural body crease, umbilicus; B. Natural body fold, lower abdominal fold.

Figure 2. A. MAVH. Note the superior “scarless” cosmetic results; B. LAVH. Note the permanently disfiguring cicatrices.
compares the postoperative cicatrices of a microlaparoscopic-assisted cholecystectomy with a laparoscopic cholecystectomy. Microlaparoscopy continues to play an ever-increasing role in pediatric laparoscopic surgery.

**CULDOLAPAROSCOPY**

Culdolaparoscopy combines the benefits of microlaparoscopy and culdoscopy. This technique provides excellent cosmesis because it uses fewer abdominal trocars. Women who do not have obliteration of the posterior cul-de-sac may be candidates for this technique. The vaginal route may be used for laparoscopic visualization, insertion of the larger port, insertion of operative instruments, and removal of surgical specimens. Culdolaparoscopy has been used for appendectomy, cholecystectomy, hysterectomy, ovarian cystectomy, myomectomy, and oophorectomy. Culdoscopes used include the rigid 0 to 90°, and the flexible 0 to 180°.

**SUMMARY**

Incisions should run parallel to Langer's lines. Natural body creases/folds should be used as often as possible for trocar placement. The smallest trocar size possible to achieve the surgical objective should be used. Microlaparoscopy and culdolaparoscopy should be considered whenever feasible. The finest suture possible should be used to close the larger trocar site(s). During the early postoperative period, patients should minimize exposure to sunlight or tanning beds. Attention to cosmesis must become the standard of care in laparoscopic surgery. After all, patients are the ones who have to live with their unsightly scar(s).

Address reprint requests to: Oscar D. Almeida, Jr, MD, FACOG, FACS, Clinical Professor of Obstetrics and Gynecology, University of South Alabama College of Medicine, 7009 Charleston Oaks Dr South, Mobile, AL 36695, USA. Tel: 251 605 2190, E-mail: odalmeida@aol.com

Oscar D. Almeida, Jr, MD, is Clinical Professor of Obstetrics and Gynecology at the University of South
Alabama College of Medicine. Dr. Almeida pioneered several techniques in the field of microlaparoscopy; and he wrote the first textbook on the subject, *Microlaparoscopy*, published in 2000 by John Wiley & Sons, Inc, New York.

John D. Morrison, MD, a general surgeon with the Fayette Medical Center in Fayette, Alabama, is a rural Alabama practitioner who has developed an international telesurgery audience because of his extensive experience and low complication rate in the surgical application of laparoscopy.

**References:**


**JOURNAL WATCH: Outpatient Surgery Magazine**

*Pros and Cons of Office Endoscopy* • *Taylor D. July 2004:54-56.* Outlines the driving forces and controversies surrounding office endoscopy and covers the important factors to consider before making the decision to perform office-based endoscopy.

**FROM 13TH INTERNATIONAL CONGRESS AND ENDO EXPO**

**Robotic Surgery Update**

*Presented by William E. Kelley, Jr, MD*

Three-dimensional reconstructions will revolutionize all we do. Robot-assisted minimally invasive surgery and computer-integrated surgical systems are being used to improve surgical outcomes in patients. Robots are being applied in different types of surgery. For example, Robodoc is used for precise drilling of the femoral shaft. But is a robot better than minimally invasive surgery? From the surgeon’s perspective, robots provide better vision with a magnified field light intensity and 3D viewing. Robots provide 6 degrees of freedom, whereas in minimally invasive surgery only 3 degrees of freedom are available. Robots are more precise, with no tremor, and more flexibility (7 degrees of movement that are simultaneous and fluid, direct and intuitive, and with ambidextrous torsion). Robotic-assisted surgery is as safe and efficacious as traditional minimally invasive surgery; but, it takes longer to perform and is more expensive. However, as with VCRs and DVD players, in time, the price will decrease. Robotic surgery has been most advantageous in radical prostatectomy, aortofemoral bypass, and CABG. Results in prostatectomy show better outcomes with robotic than with traditional open surgery. In cardiology, robotic surgery has been used in mitral valve replacement with reduced the length of hospital stay. Robotic CABG and totally endoscopic CABG have dramatic benefits for cardiac patients with decreased hospital stay and no driving restrictions following surgery. In addition, surgeons with no minimally invasive surgery experience have a very short learning curve.
At a recent international meeting, I had 12 minutes allotted for my presentation. Early, on the morning of the presentation I followed my ritual. I inspected the podium, connected my laptop to the projector and the main computer, and found that everything was working perfectly. I had worked extremely hard on this presentation and had incorporated outstanding audiovisual material. I was ready to start and waiting for my first Power Point slide when to my dismay, nothing happened. The computer failed. Within a few seconds, three audiovisual engineers tried to correct the problem. The moment I realized that this was not going to be accomplished in a timely fashion, I started my presentation without audiovisuals. Luckily I had followed some of my own advice and had practiced my presentation until it was nearly memorized. I delivered it in 10–12 minutes as scheduled and people congratulated me after the meeting because of my creativity in the face of adversity.

It is difficult to imagine a modern presentation without audiovisual aids. Computer assisted presentations have become very sophisticated, including video clips, interactive sessions, and teleconferencing. During informal presentations, the speaker can exercise his or her own discretion about topic length, the style of the presentation and the extent of interaction with the audience. As a general rule, the speaker is in command because he or she is an expert in the field and the audience, aware of this, is more receptive. The speaker can use a variety of audiovisual aids and has time to deal with potential technical problems with the audiovisual equipment.

For other more formal presentations such those at national and international conferences, strict rules may need to be followed. The topic is preselected and well defined, and the speaker has a specific amount of time allotted to deliver the talk. National and international meetings, congresses, and symposiums are attended by people from different cultural and linguistic backgrounds which makes the audiovisual material even more important. Effective use of audiovisual aids requires that your entire presentation be well prepared and rehearsed. Know the scheduling details: exact time allotted, starting and ending times, and whether there is a question and answer period.

All associations now demand that presentations be computerized using Power Point. One way to transfer 35 mm slides to a digital format is to scan your slides using a slide scanner; but the scanners are expensive, and the quality of the product is sometimes disappointing. I prefer to photograph the projected slide using a digital camera; use a good quality screen and a tripod.

Find out how you are going to be positioned with respect to the projection screen and audience and whether you will have the freedom to walk around the podium with a portable or wireless microphone.

Bring your own laptop AND a copy of the presentation on CD-ROM or DVD.

Test the podium, microphone, laser pointer and other necessary equipment the day or morning before the presentation. Communicate with the audiovisual technician to ensure that your computer or video is compatible with the provided equipment.

Find a position in front of the audience that allows you to check the projection screen during your presentation.

Do not hesitate to ask for help. At large meetings an...
Audiovisual technician is usually readily available. If there is no technician available, some of the audience members could be of assistance and may volunteer to help you.

Audiovisual aids can make an enormous difference in the delivery of your message. My advice, however, is that you be prepared for computer problems to leave you without your audiovisual aids. Memorize your main topics. Memorize and practice your opening and closing. Have a written copy of your main topics or a printout of your slides handy. Prepare one or two vignettes or personal stories to make the audience feel more comfortable and connected to you.

Overall, don’t panic, and be creative. The audience wants to listen to your message.

Suggested Reading:


Address reprint requests to: Gustavo Stringel, MD, 21 Addison St, Larchmont, NY 10538-2744, USA, Tel: 914 493 7620, Fax: 914 594 4933, E-mail: gstringel@aol.com

Gustavo Stringel, MD, is Professor of Surgery and Pediatrics at New York Medical College. Dr. Stringel has published and often presents on laparoscopy and thoracoscopy in children. He serves on the editorial board of _JSLS_ and sits on the SLS Board of Trustees.

FROM 13TH INTERNATIONAL CONGRESS AND ENDO EXPO

FUTURE TECHNOLOGY SESSION

**Design, Methodology, and Validation for Surgical Simulators of the Future**

*presented by Anthony Gallagher, PhD*

The attention span of a resident is less than that of a junior or master surgeon. Use of simulators in training can help improve residents’ attention span. Optimal simulation training is to train, train, train, until proficiency is reached through objective measures. Trainees need to know what to do and what not to do, so errors versus outcomes should be measured. A paradigm shift has occurred toward evidence-based training and assessment of skills being performed through simulators, rather than through subjective observation of a mentor.

**MULTIDISCIPLINARY PLENARY SESSION: System Approach for Detection and Reduction of Errors**

**The Role of Objective Assessment and Error Measurement in Curriculum Development**

*presented by Mike Sinanan, MD, PhD*

Highlighting error and offering immediate guidance to trainees in problem solving and best technical practice at each stage of a procedure—either in simulation or in a clinical training setting—reinforces appropriate behavior as the trainee’s technical skills improve.

**Error Detection and Management—A Perspective**

*presented by Richard M. Satava, MD*

Identifying errors is a critical first step, because to teach errors and how to avoid them, it is essential to unambiguously define the topic.
Visit ENDOZONE.ORG for the recent Endometriosis News which includes highlights from conferences on endometriosis, presentations of expert views on endometriosis, links to information about upcoming endometriosis conferences and recent endometriosis literature.

WEBSURG.COM is placing new emphasis on videos of live surgery and expert interviews and has a brand new search engine to facilitate navigation. Twenty five new videos have been posted including “Intraoperative Augmented Reality Applied to Laparoscopic Right Adrenalectomy,” and “3D-Assisted Virtual Cholangioscopy.” There are 2 new operative technique chapters on “Equipment and 3D Vision” and “Transperitoneal Laparoscopic Radical Nephrectomy.”

Latest update on THETROCAR.COM online videojournal of gynecological and surgical endoscopy: Article: Laparoscopic Rectosigmoid Resection in a Case of Deep Endometriosis.

IPEG.ORG, website of the International Pediatric Endosurgery Group, contains guidelines on empyema and related pleural diseases, pediatric gastroesophageal reflux disease, and infantile hypertrophic pyloric stenosis. Abstracts from IPEG 2001 through 2004 are available as PDFs.

Go to SURGICALPRODUCTSMAG.COM to view the latest issue of Surgical Products magazine plus archives from as far back as 2003. The October issue discusses “Reining in the New Technology” and profiles the Karl Storz OR1, the Olympus Alpha O.R. and Skytron’s Global Device Management System. See the August 2004 Technology Solutions to read “Laparoscopy: An Inside Look at the New Technologies.”

The Society of Laparoendoscopic Surgeons has launched an enhanced website, LAPAROSCOPY.ORG, with a fresh look and easy navigation. Beneath the surface is a new system that allows for more user interaction and a powerful “Find A Doctor” search. Members can now log onto the website to view and update their listings as well as renew membership, and new members can join online. Changes take effect immediately so members never miss delivery of JSLS or LAPAROSCOPY Today. Plans for the site include adding an online version of the first edition of the Society’s textbook, Prevention and Management of Laparoendoscopic Surgical Complications, as well as previous issues of LAPAROSCOPY Today. SLS encourages members to log on and take advantage of this great benefit.

Laparoscopy.org features include:
- Enhanced easy navigation
- Quick “Find A Doctor” Database: search by state, region, or last name
- Simple address updates for SLS members
- Online membership renewal
- Straightforward online registration for SLS Congresses

SIMULATION RELATED WEBSITES

- Society for Medical Simulation www.socmedsim.org
- National Capital Area Medical Simulation Center http://simcen.usuhs.mil/
- Agency for Healthcare Research and Quality Surgical Simulation Website http://utopia.hitl.washington.edu/ahrq/
- Millersville University’s Research in Haptics and Surgical Simulation http://cs.millersville.edu/~webster/haptics/
- Virtual Environment Laboratory, The University of Texas at Arlington http://virtual.uta.edu/CD/index.html
- Emory Simulation, Training and Robotics Center http://www.surgery.emory.edu/gen_surgery/estar.htm
- Penn State College of Medicine Simulation Development and Cognitive Science Lab www.hmc.psu.edu/simulation/index.html
Suturing Made Simple. Axial Needle Holders, a full suite of Aesculap instruments were designed with ergonomic palm fit and balanced weight for surgeon comfort, superior force transmission, precision Tungsten Carbide jaws for needle control, and a simple to use quick lock one-step system. The instruments are designed to last, have multiple jaw designs and 31 and 37 cm lengths. Contact Aesculap, www.Aesculap.com

Direct Drive laparoscopic graspers from Applied Medical have unique Latis pads constructed of a silicon membrane encapsulated in a polyester mesh. The pads delicately engage and conform to the tissue, allowing controlled atraumatic manipulation. The Direct Drive laparoscopic graspers feature a reusable, “infinite ratcheting” handle and single-use, disposable shafts. Contact Applied Medical, www.AppliedMedical.com

Civco Medical Instruments’ laparoscopic cover is form-fitting with a latex tip and fits snugly over the standard 10 mm laparoscopic transducers (with a 12 mm trocar), offering increased ease-of-use and patient comfort. The cover is telescopically folded with an extended length of 8 ft for a wider sterile field. It offers distortion free scanning and is conveniently packaged with sterile surgical lubricant and probe clips. Contact Civco Medical Instruments, www.CIVCO.com

GE Healthcare’s software and instrumentation for InstaTrak 3500 Plus and ENTrak Plus surgical navigation systems uses electromagnetic technology. The surgeon can view a 3D map of the patient to track the exact position of instruments and perform delicate minimally invasive cranial, spine and ENT surgical procedures more safely. Contact GE Healthcare, www.GEHealthcare.com

Applied Medical’s Universal Seal technologies can accommodate all instruments from 4 mm to 15 mm without the need for any adaptors or instrument changes. The septum is encapsulated by a protective shield that eliminates tears from sharp instruments, and Universal Seal features a pliable Double Duckbill valve, which obsoletes the mechanical flapper valves. Contact Applied Medical, www.AppliedMedical.com

Ethicon’s PROCEED Surgical Mesh, a multi-layer tissue separating prosthesis designed ventral hernia repair, does not contain ePTFE and won’t harbor bacteria. Parietal side features a, macroporous, lightweight mesh structure encapsulated in absorbable polydioxanone. Mesh construction allows for fluid flow through, less permanent foreign body, and flexible scar tissue. Visceral side features an absorbable layer of oxidized regenerated cellulose bonded to a layer of polydioxanone, to minimize tissue attachment to the prosthesis. Visit www.ProceedMesh.com

Applied Medical’s Direct Drive laparoscopic scissors, the only laparoscopic scissors with dual-edged blades, provides delicate tissue transection at the distal tip and cutting of refractory tissue at the proximal jaw apex. The Direct Drive laparoscopic scissors feature a reusable handle and a single-use disposable shaft for reliable, cost effective performance. Contact Applied Medical, www.AppliedMedical.com

Ethicon’s ENDOPATH Xcel trocar has a double seal that accommodates instruments from 4.7 mm to 12.9 mm. Endopath Xcel is designed for lower drag force, has a lead in feature for more precise instrument control, reduces the need for mid-procedure seal swaps (compared to current Endopath trocars), and allows smooth, one-handed instrument exchange. Contact Ethicon Endo-Surgery, www.EthiconEndo.com

The sterilizable FISSO Endoscope Holder from Baitella AG is distinguished by its unrestricted mobility, excellent stability, and simple and rational operation. One single action to stretch and loosen all 5 joint functions allows quick positioning. The endoscope holder is produced from high-grade materials and keeps a firm hold on laparoscopes, optics, and endoscopes. The wide range of bases guarantees a secure hold on operating tables. Contact Baitella AG, info@baitella.com, www.Baitella.com
**PRODUCTS FOR THE LAPAROSCOPIC SURGEON**

**TiMESH titanized soft tissue reinforcement implant** is the only composite mesh made with titanium, a light, strong, and totally biocompatible material that naturally matches the requirements for implantation in the human body. TiMESH Extralight at 0.24 grams per 4" x 6" sheet is well suited for laparoscopic surgery and can be inserted through a 5 mm trocar. Its thin profile is easy to handle and has unmatched see-through quality. Contact GP Surgical, www.GPSurgical.com

**Karl Storz 5 mm Hopkins II Telescopes** feature a double-lumen shaft for increased durability. Increasing the number of fiberoptic bundles gives physicians the benefits of greater image brightness. Brighter optics deliver better image quality. An increased field of view and enhanced contrast and resolution offer clear visualization. Contact Karl Storz, www.KarlStorz.com

**Valleylab’s LigaSure V 5 mm sealer/divider** uses handswitching instead of footswitching, and small jaws and fine tips allow for greater access in confined spaces. Thermal spread is approximately 1.5 mm. The 5 mm shaft allows for a small incision, reducing scar size. Patented vessel sealing technology reforms the collagen into a permanent, plastic-like seal without leaving any foreign material behind. Contact Valleylab, www.Valleylab.com

**The RUNNING DEVICE SewRight SR•5R** is designed to provide an automated alternative for all of a minimally invasive surgeon’s remote suturing needs from simple interrupted stitches to intracorporeal knot tying. SR•5R can be loaded with a variety of suture types and sizes. Contact LSI Solutions, www.LSISolutions.com

**Stryker Endoscopy’s 1088 HD Camera System** offers a true-to-life reproduction, improved motion control, and visual precision. The 1088 HD provides over 1,100 lines of resolution, and proprietary CCDs offer unsurpassed color reproduction. Eight specialty settings allow the optimal image in different applications. Contact Stryker Endoscopy, www.Stryker.com

**Sofradim’s Parietex Composite** combines the proven material benefits of three-dimensional multifiber polyester with the protective advantages of Sofradim’s patented collagen-based film, which is resorbed into the body within 21 days. This combination provides fewer visceral attachments, superior reperitonization and optimal ingrowth. It is a true mesh. Contact Sofradim, www.Sofradim.com

**Megadyne’s 6 inch, Modified Bayonet Blade** features its patented E-Z Clean electrosurgery tip, a non-stick, eschar-resistant, PTFE-coated electrode that provides a consistent, clean cut at lower power settings. Developed at the request of neurosurgeons who were tired of scraping off eschar build-up during minimally invasive spine procedures, the tip easily wipes clean. To minimize the likelihood of injury to surrounding tissue, modified tips are insulated over all but the distal 3-5 mm of the electrode shaft. Contact Megadyne, www.Megadyne.com

To have product information considered for publication in Laparoscopy Today, please send a 50-word product description or a press release and a high-resolution image (TIFF, JPEG, or EPS with at least 300 dpi) to publications@sls.org.

---

**2nd Edition of SLS Complications Textbook**

The Society of Laparoendoscopic Surgeons is pleased to introduce the 2nd edition of *Prevention and Management of Laparoendoscopic Surgical Complications*, the definitive guide to complications of minimally invasive surgery. Prevention and Management contains the cumulative experience of 93 noted experts in 55 chapters. The unique multispecialty approach of this reference opens the window to nuances and techniques otherwise missed when focus is restricted to a single specialty. For a complete list of contents see page 4. Order this distinctive reference online at www.Laparoscopy.org.
CALENDAR OF EVENTS

FEBRUARY 2005
3-5 International Colorectal Disease Symposium 2005. Hong Kong Society for Coloproctology. Hong Kong SAR, China
23-26 2nd EuroAmerican MultiSpecialty Congress of Laparoscopy and Minimally Invasive Surgery. Society of Laparoendoscopic Surgeons. Miami Beach, Florida, USA

MARCH 2005
4-5 Stanford Course in Cranial Base Surgery: Minimally Invasive Approaches to Inaccessible Intracranial Lesions. Stanford University. Palo Alto, California, USA
5-6 Hand-Assisted Laparoscopy. American Urological Association. Houston, Texas, USA
6-11 Laparoscopic Bariatric Surgery Mini-Fellowship Program. University of Texas Southwestern Medical Center. Dallas, Texas, USA
31-Apr 2 14th Annual Meeting: Female Urogynecology and Disorders of the Female Pelvic Floor. Mayo Clinic. Scottsdale, Arizona, USA

APRIL 2005
7-8 Robotic-Assisted Pediatric Surgery. University of Iowa. Iowa City, Iowa, USA
8-10 Minimally Invasive Spine Course. American Academy of Orthopedic Surgeons. St Louis, Missouri, USA
7-9 4th Congress of the Mediterranean Society for Reproductive Medicine. MSRM. French Riviera, Cote d’Azur, France
13-16 Society of American Gastrointestinal Endoscopic Surgeons Annual Meeting, 2005 Scientific Session and Postgraduate Courses. SAGES. Ft. Lauderdale, Florida, USA

MAY 2005
19-20 Annual Meeting of the American Society for Gastrointestinal Endoscopy. Chicago, Illinois, USA
21-26 AUA ‘05—American Urological Association Annual Meeting. AUA. San Antonio, Texas, USA
20-21 Advanced Course in Laparoscopy in Pediatric Urology. IRCAD-EITS and ESPU. Strasbourg, France
22-27 Laparoscopic Bariatric Surgery Mini-Fellowship Program. Univ of Texas Southwestern Med Ctr. Dallas, Texas, USA
23-27 Intensive Course in Laparoscopic General Surgery. European Institute of Telesurgery. Strasbourg, France

JUNE 2005
1-4 IPEG’s 14th Annual Congress for Endosurgery in Children. International Pediatric Endosurgery Group, European Association of Endoscopic Surgeons. Venice, Italy
8-12 13th EAES Congress. European Association of Endoscopic Surgeons. Venice, Italy
13-17 Intensive Course in Laparoscopic Urological Surgery. European Institute of Telesurgery. Strasbourg, France

AUGUST 2005
21-26 Laparoscopic Bariatric Surgery Mini-Fellowship Program. Univ of Texas Southwestern Med Ctr. Dallas, Texas, USA

SEPTEMBER 2005
14-17 14th International Congress and Endo Expo 2005, SLS Annual Meeting. Society of Laparoendoscopic Surgeons. San Diego, California, USA

For more information about these and other upcoming events, visit www.laparoscopy.org.

JOURNAL WATCH: Outpatient Surgery Magazine
How We Perform Lap-Band Surgery Outpatient • Montgomery KF, Watkins BM. September 2004:62-65. Advantages of the outpatient approach are reviewed: reduced cost, better patient environment, smoother recovery. The surgeons walk through the pre-op process, the surgery, and the post-op process. Results and reimbursement are discussed. According to the authors, they have experienced few complications, and patients average 50% excess-weight loss after 1 year.

JOURNAL WATCH: JSLS
Splenic Injury Following Endoscopic Retrograde Cholangiopancreatography: A Case Report and Review of the Literature • Dixon E, Graham JS, Sutherland F, Mitchell PC. 2004;8:275-277. Splenic capsular tear is an uncommon injury resulting from endoscopic retrograde cholangiopancreatography and may be associated with chronic pancreatitis.
2ND EUROAMERICAN MULTISPECIALTY CONGRESS of Laparoscopy and Minimally Invasive Surgery
FEBRUARY 23 - 26, 2005

PROGRAM DIRECTORS
Harrith M. Hassan, MD
William E. Kelley, Jr, MD
Elspeth M. McDougall, MD
Camran Nezhat, MD

GENERAL CHAIR
Paul Alan Wetter, MD

SCIENTIFIC CHAIRS
Raymond J. Lanzafame, MD, MBA
Carl J. Levinson, MD

ORGANIZING COMMITTEE CHAIRS
Oscar D. Almeida, Jr, MD
Michael S. Kavic, MD

Delegates of leading laparoscopists from Europe and the Americas will create a unique exchange of cultural information and education in minimally invasive surgical approaches & techniques.

WWW.SLS.ORG

Presented by
THE SOCIETY OF LAPAROENDOSCOPIC SURGEONS

A unique exchange of culture & education in tropical Miami Beach presented by the Society of Laparoendoscopic Surgeons at The Alexander All-Suite Ocean Front Resort, Miami Beach, Florida USA Register at www.sls.org

ph (305) 665-9959
fax (305) 667-4123
usa toll free (800) 446-2659
email conferences@sls.org

Accreditation: The Society of Laparoendoscopic Surgeons (SLS) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education to physicians. Designation: This activity has been approved for AMA PRA credit.
A unique exchange of culture and education...

The EuroAmerican MultiSpecialty Congress of Laparoscopy and Minimally Invasive Surgery Preliminary Faculty and Organizing Committee represent the following organizations:

ORGANIZATIONS

Association of Endoscopic Surgeons of Great Britain and Ireland
British Society of Gynecologic Endoscopy
Belgian Group for Endoscopic Surgery
Canadian Fertility and Andrology Society
Caribbean College of Surgeons
Catholic University of Sacred Heart, Rome
Czech Society of Gynecological Endoscopy
Czech Surgical Society
Danish Laparoscopic Society
Danish Surgical Society
District Hospital Zvolen, Department of General Surgery and Trauma, Slovakia
Emergency Center, Clinical Center of Serbia
European Association for Endoscopic Surgery
Egyptian Group of Laparo-Endoscopic Surgeons (EGLES), Division of the Egyptian Society of Surgeons (ESS)
German Society of Gynaecological Endoscopy
Greek Association for Endoscopic Surgery
Greek Association of Endocrine Surgeons
Hungarian Surgical Society
Imperial College, London, United Kingdom
International Society of Endoscopic and Laparoscopic Herniologists (Greece)
International Society of Mammary Endoscopy
Italian Society of Endoscopic Surgeons
Jordan Ministry of Health
Jordan Surgical Society
Jordan University Hospital
Los Angeles Urological Society, Southern California Region
Mediterranean Society of Reproductive Medicine
Portuguese Society for Endoscopic Surgery
Portuguese Society of Surgery
Romanian Association for Endoscopic Surgery (Asociatia Romana pentru Chirurgie Endoscopica ARCE)
Romanian Society of Laparoscopic Surgery
Russian Association of Endoscopic Surgery (RAES)
I. M. Sechenov Moscow Medical Academy
São Paulo University Hospital
Endoscopic Unit, São Paulo, Brazil
Swiss Association for Laparoscopic and Thoracoscopic Surgery
Syrian Association for Laparoscopic Surgery
Syrian Association for General Surgeons
United European Gastroenterology Federation (UEGF)
University of Pretoria, Faculty of Medicine, Departments of Obstetrics and Gynaecology and Surgery and Medi-Clinic, Pretoria, South Africa
University of West Indies, Cave Hill Campus, Queen Elizabeth Hospital

REASONS TO ATTEND

• Experience a unique conference offering a multispecialty approach to minimally invasive surgical techniques and procedures.
• Expand your knowledge of the use of laparoscopic diagnostic and treatment techniques taught by acknowledged leaders in their respective specialties and countries.
• Learn in a multidisciplinary environment as topics specific to general surgeons, gynecologists, and urologists are presented in general sessions providing a multispecialty approach to minimally invasive surgery.
• Understand how different countries have met the challenges of training and practicing minimally invasive surgery.
• Find out about cultural differences and similarities between participating countries.

CONFERENCE OBJECTIVES

The objectives of this program are to provide attendees with:

• A multidisciplinary and multicultural exchange of information between surgeons representing their country or a professional organization on the challenges faced practicing and teaching minimally invasive surgery.
• A clearer concept of new and standard laparoscopic and endoscopic instrumenta tion and techniques and how they enhance the standard of patient care and education of minimally invasive surgeons.
DESTINATION INFORMATION
Experience the distinctive cultures of Latin America and the Caribbean in Miami...colorful neighborhoods, Latin and Caribbean music, world-class restaurants, theater, cabaret and cinemas, art galleries, museums, night clubs, and more. You can spend your free hours basking in the warm sunshine, relaxing on some of the world’s most beautiful beaches, and enjoying the exciting nightlife of South Beach. Cultural activities include the Jackie Gleason Theater, the Bass Museum of Art, the New World Symphony, and the Florida Grand Opera, among others.

For children, entertainment options include the Miami Seaquarium, the Miami Children’s Museum, Parrot Jungle, Miami Metro Zoo, Miami Museum of Science and Space Transit Planetarium, The Everglades Royal Palm Visitor Center, and Biscayne Bay National Park for snorkeling. For additional information, visit www.gmcvb.com

CONFERENCE HOTEL/ACCOMMODATIONS
The Alexander All-Suite Ocean Front Resort
5225 Collins Avenue
Miami Beach, Florida USA 33150
Telephone: 305 - 341 - 6500
Reservations Toll Free in US: 800 - 327 - 6121
Fax: 305 - 341 - 6553
Website: www.alexanderhotel.com

A short distance from Miami International Airport, the beachfront Alexander Resort is situated directly on the Atlantic coast providing guests quick and convenient access to the pristine beach. Unsurpassed dining is available in the world famous Shula’s Steak House. The Alexander’s Aquasports Center provides both on and offshore activities for guests of the hotel spending their leisure time enjoying this exclusive strip of South Florida’s best beaches. The hotel is minutes away from world renowned places to tour, shop and dine: South Beach, the historic Art Deco District, Coconut Grove, Lincoln Road, the Design District, Bayside Marketplace, the Shops of Bal Harbour and the Village at Merrick Park in Coral Gables.

RATES
Special daily rates for congress attendees is $270.00 for a one bedroom suite. No meals are included.

Make your reservations in the SLS room block no later than January 9, 2005. After this date, reservations will be confirmed on a space-available basis only.

CALL NOW AND MAKE YOUR HOTEL RESERVATIONS!

LATIN INSPIRED FOOD, MUSIC AND ENTERTAINMENT WITH FACULTY
Thursday, February 24, 2005 • Ticket required
The Alexander All-Suite Ocean Front Resort

Join us for a memorable evening of Latin-inspired food, music and entertainment. No visit to Miami is complete without enjoying the experience of Latin-inspired cuisine and music. Congress attendees and guests will have a special evening of fun with new and old friends. Tickets are $95 each and are required for this event. They may be purchased using the registration form or online. This event is approximately two hours and includes a buffet dinner, entertainment, music, and two drink tickets.

CREDIT HOURS
Accreditation The Society of Laparoendoscopic Surgeons (SLS) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Designation SLS designates this educational activity for a maximum of 14.5 Category 1 credits toward the AMA Physician’s Recognition Award. Each physician should claim only those credits that he/she actually spent in the activity.

TECHNICAL EXHIBITS
Preliminary Exhibit Hours
Wednesday, February 23, 2005
7:00 pm – 8:00 pm • Welcome Reception
Thursday, February 24, 2005 • 7:00 am – 1:30 pm
Friday, February 25, 2005 • 7:00 am – 1:30 pm
Continental Breakfast and refreshment breaks will take place in the exhibit area. For more information about exhibiting call Teri Valls at MECC, Inc.

TEL (305) 663 - 1628 • FAX (305) 663 - 1644
E-MAIL tvalls@meccinc.com

TRAVEL
SLS consults with The Store For Travel for the lowest fares possible. For negotiated airline discount rates, contact Steve at (800) 284-2538. Outside the United States, call 001 (305) 251 - 6331. Please be sure to mention you are attending the 2005 SLS Congress in Miami Beach.

CONGRESS FEES (SLS Members Register before Dec. 23 and SAVE!)

<table>
<thead>
<tr>
<th></th>
<th>BEFORE Dec. 23</th>
<th>AFTER Dec. 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Members</td>
<td>$495</td>
<td>$595</td>
</tr>
<tr>
<td>Non-Members</td>
<td>$595</td>
<td>$595</td>
</tr>
<tr>
<td>Delegates/Organizing Committee Members</td>
<td>$395</td>
<td>$495</td>
</tr>
<tr>
<td>Resident/Nurse/Fellow</td>
<td>$250</td>
<td>$250</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>3:00 – 6:00 pm</td>
<td>CONFERENCE REGISTRATION</td>
<td></td>
</tr>
<tr>
<td>6:00 – 7:00 pm</td>
<td>OPENING CEREMONY • Why A EuroAmerican Congress? • CULTURAL PRESENTATIONS</td>
<td></td>
</tr>
<tr>
<td>7:00 – 8:00 pm</td>
<td>WELCOME RECEPTION</td>
<td></td>
</tr>
<tr>
<td>7:00 – 7:30 am</td>
<td>CONTINENTAL BREAKFAST AND VISIT EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>7:30 – 7:45 am</td>
<td>OPENING REMARKS</td>
<td></td>
</tr>
<tr>
<td>7:45 – 8:30 am</td>
<td>CANCER Colonic Surgery for Cancer • Laparoscopic Dissection of Uterine Artery in Symptomatic Fibroids: Complications and Surgical Results</td>
<td></td>
</tr>
<tr>
<td>8:30 – 9:45 am</td>
<td>GYNECOLOGY Uterine Artery Embolization • Voluminous Ovarian Cystoma in Pregnancy - Laparoscopic Surgical Treatment • Pregnancy After Laparoscopic Intracorporeal Myomectomy • Laparoscopic Myomectomy: Past and Present • The Ovarian Chocolate Cyst: Controversies Surrounding the Best Treatment</td>
<td></td>
</tr>
<tr>
<td>9:45 – 10:45 am</td>
<td>CARDIOTHORACIC Cardiopulmonary Effects of Pneumoperitoneum • Laparoscopic Oesophagectomy • Laparoscopic and Toracoscopic Patient Treatment</td>
<td></td>
</tr>
<tr>
<td>10:45 – 11:15 am</td>
<td>BREAK AND VISIT EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>11:15 – 11:30 am</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>11:30 – 12:45 pm</td>
<td>HEPATOBILIARY Pitfalls in Laparoscopic Cholecystectomy and How to Fix Them • Results of Laparoscopic Biliopancreatic Diversion for Morbid Obesity • Major Bile Duct Injuries During Laparoscopic Cholecystectomy: How to Prevent and Manage Them • Analysis of Physiological Response to a Surgical Trauma With Laparoscopic and Open Cholecystectomy (a Prospective Randomized Study) • Surgeons’ Involvement in Ultrasonic Evaluation of the Difficulties in Laparoscopic Cholecystectomy</td>
<td></td>
</tr>
<tr>
<td>12:45 – 1:00 pm</td>
<td>CULTURAL PRESENTATION • Polish Experience With Minimally Invasive Surgery</td>
<td></td>
</tr>
<tr>
<td>1:00 – 1:45 pm</td>
<td>PATIENT CARE, EDUCATION, TRAINING AND RESEARCH • Similarities and Differences in Laparoscopic Training and Education • Endoscopic Training in an Academic Setup • Skills Assessment and Training With Respect to Minimal Access Surgery</td>
<td></td>
</tr>
<tr>
<td>1:45 – 2:00 pm</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>6:00 – 10:00 pm</td>
<td>Latin Inspired Food, Music and Entertainment with Faculty</td>
<td></td>
</tr>
<tr>
<td>7:00 – 7:30 am</td>
<td>CONTINENTAL BREAKFAST AND VISIT EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>7:30 – 8:00 am</td>
<td>COLORECTAL Emergency Laparoscopic Surgery • Laparoscopic Management of Acute Appendicitis</td>
<td></td>
</tr>
<tr>
<td>8:00 – 8:30 am</td>
<td>ENDOCRINE Minimally Invasive Surgery in Primary Hyperparathyroidism • Adrenal Surgery: Past, Present and Future</td>
<td></td>
</tr>
<tr>
<td>8:30 – 8:45 am</td>
<td>CULTURAL PRESENTATION Endoscopic Surgery in Developing Countries. Laparoscopic Surgery:Technical and Economic Considerations</td>
<td></td>
</tr>
<tr>
<td>8:45 – 10:00 am</td>
<td>GYNECOLOGY Current Assessment of Tubal Patency in Infertility Patients Comparing Costly to More Reasonably Priced Methods • Minimally Invasive Transcervical Procedures for Tubal Infertility • New Aspect of Fertiloscopy • Tubal Ligation By Microlaparoscopy Under Local Anesthesia • Primary Retropertioneal Teratoma in an Adult</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:30 am</td>
<td>TRAUMA Laparoscopic Procedures in Diagnosis of Abdominal Trauma in Multiple Injured Persons • Use of Laparoscopy in Abdominal Trauma</td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:0 am</td>
<td>BREAK AND VISIT EXHIBITS</td>
<td></td>
</tr>
<tr>
<td>11:00 – 11:15 am</td>
<td>CULTURAL PRESENTATION The Land of the River Jordan – Ancient and Modern</td>
<td></td>
</tr>
<tr>
<td>11:15 – 11:45 am</td>
<td>PATIENT CARE, EDUCATION, TRAINING AND RESEARCH Training Junior Surgeons for Safe Laparoscopy • Complications and Errors in Laparoscopic Surgery</td>
<td></td>
</tr>
<tr>
<td>11:45 – 12:30 pm</td>
<td>MISCELLANEOUS Laparoscopic Splenectomy • Minimal Invasive Therapy for Spleen Diseases</td>
<td></td>
</tr>
<tr>
<td>12:30 – 1:00 pm</td>
<td>UROLOGY Laparoscopic laparoscopy in Urology • Advances in Laparoscopic Radical Prostatectomy</td>
<td></td>
</tr>
<tr>
<td>1:00 – 1:15 pm</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>7:00 – 7:30 am</td>
<td>CONTINENTAL BREAKFAST</td>
<td></td>
</tr>
<tr>
<td>7:30 – 8:45 am</td>
<td>MULTIDISCIPLINARY Lift (Gasless) Laparoscopic Adhesiolysis and Application of SprayGel • Adhesion Therapy • Pathophysiology of Pneumoperitoneum and Clinical Implications • Insufflation Technique for Laparoscopy: Improving Insufflation Performance and Patient Safety • Surgery Ergonomics Analysis in Virtual Reality Environment</td>
<td></td>
</tr>
<tr>
<td>8:45 – 9:00 am</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>9:00 – 9:45 am</td>
<td>BARIATRICS The Role of an Anti-Obesity Surgery Centre in the United Arab Emirates • Results of Laparoscopic Biliopancreatic Diversion for Morbid Obesity • Endoscopic Treatment of Complications of Bariatric Surgery Endoscopic Removal of Migrated Ring or Band, Endoscopic Closure of Gastrocutaneous Fistula, Endoscopic Dilation of Anastomotic Stenosis</td>
<td></td>
</tr>
<tr>
<td>9:45 – 10:00 am</td>
<td>COMPLICATIONS Complications of Laparoscopic Procedures</td>
<td></td>
</tr>
<tr>
<td>10:00 – 10:30 am</td>
<td>GYNECOLOGY The Development of the RCOG Special Skills Modules in Hysteroscopic and Laparoscopic Surgery • Evolution of Laparoscopic Hysteroscopy: The Future of CISH</td>
<td></td>
</tr>
<tr>
<td>10:30 – 11:0 am</td>
<td>BREAK</td>
<td></td>
</tr>
<tr>
<td>11:00 – 11:15 am</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>11:15 – 12:15 pm</td>
<td>HERNA Comparison of 10 Yr Experience of Transperitoneal Laparoscopic vs. Conventional Inguinal Hernia Surgery: A Change in Surgical Practice • Abdominal Wall Hernias • Cost - Effectiveness of Laparoscopic Ventral Hernia Repairs</td>
<td></td>
</tr>
<tr>
<td>12:15 – 12:45 pm</td>
<td>TECHNOLOGY New Technologies in Laparoscopic Surgery • Laparoscopic Surgery with Plasmatic Scalpel</td>
<td></td>
</tr>
<tr>
<td>12:45 – 1:30 pm</td>
<td>PATIENT CARE, EDUCATION, TRAINING AND RESEARCH Implementation of Virtual Reality Simulators in Surgical Training and Assessment Curriculum • Laparoscopic Surgical Training – What is the Future for Residents and Consultants? • The Learning Curve on the Xitact LS500 Laparoscopy Simulator: Profiles of Performance</td>
<td></td>
</tr>
<tr>
<td>1:30 – 1:45 pm</td>
<td>CULTURAL PRESENTATION</td>
<td></td>
</tr>
<tr>
<td>1:45 – 2:00 pm</td>
<td>DELEGATES MEETING</td>
<td></td>
</tr>
</tbody>
</table>

**PRELIMINARY PROGRAM AGENDA**
Superior Retraction.
Superior Protection.

- Atraumatic Retraction
- Enhanced Protection
- Minimum Incision Size, Maximum Exposure

Alexis®
WOUND RETRACTOR

Applied Medical
The New Generation Medical Company

To learn more, contact Applied Medical at 800.282.2212 or visit our website at www.appliedmedical.com

© 2004 Applied Medical Resources Corporation; All rights reserved, 977AL1104
SURGEON STATISTIC #93

The average surgeon works 12–14 hours a day.

Let us help make each day smoother.
Harmonic is evolving—advancing our technology to better meet your needs. We are committed to innovation and developing instruments designed to advance smooth surgery. Be on the lookout for what’s next from Harmonic.

Advancing Smooth Surgery

Harmonic™

1-800-use-endo or www.smoothsurgery.com