

President's Message: A Memorable 2011, and a Hopeful 2012



Maya S. Suresh, M.D.

Wishing you all a happy and successful New Year! The year 2011 will be memorable for obstetric anesthesiologists and for the Society for Obstetric Anesthesia and Perinatology (SOAP) because the Obstetric Anesthesiology Fellowship was finally approved by the Accreditation Council for Graduate Medical Education (ACGME).

SOAP owes a debt of gratitude to all the members of the related task force, and particularly key individuals: Alan Santos, Rita Patel, Linda Polley, Cynthia Wong, Manny Vallejo and David Wlody, who helped with the process. A special commendation to Drs. Santos and Patel, who put in significant amounts of time and effort to work through the grinding and rigorous process of convincingly

demonstrating that there is a distinct body of knowledge and specific core competencies acquired by an obstetrical anesthesiologist that are different from the anesthesiologists; and because of this, we were able to seal the final ACGME approval for the Obstetric Anesthesiology Fellowship. On behalf of SOAP, I would also like to acknowledge Pat Surdyk, Billie Hart and Neal Cohen, members of the RRC, who joined Alan, Rita and the task force in a true collaborative effort to help secure the future of obstetrical anesthesiology. They also assisted in defining the scope of our practice that helped garner the seal of approval from an independent and credible organization such as the ACGME.

At the American Society of Anesthesiologists 2011 annual meeting in Chicago last October, an informal meeting of interested parties was held in order to review the process for applying for and receiving ACGME accreditation for fellowship programs. Dr. Patel's presentation on "What It Means to Be a Program Director" was enlightening. The obstetric anesthesiology fellowship program directors can go to the ACGME website to determine the deadline for submission of the Program Information Form and the process of seeking ACGME approval of their fellowship program. The Society of Academic Anesthesiology Associations (SAAA) was all abuzz regarding the ACGME approval of the obstetric anesthesiology fellowship. SAAA, along with its various subsets including the Association of Anesthesiology Subspecialty Program Directors (AASPD), is encouraging obstetric anesthesiology program directors to participate in next year's annual SAAA meeting and the AASPD forum discussions; this is a venue for getting updates and exchanging ideas regarding various subspecialties. Dr. Robert Gaiser may also be invited to give a presentation and an update on the obstetric anesthesiology fellowship.

Continued on page 2

Contents:

Editor's Corner	page 3
ACGME Accreditation of the Fellowship in Obstetric Anesthesiology	page 4
Disbursement Committee Report	page 5
Membership Committee Report	page 5
Simulation in Obstetric Anesthesiology	page 6
Update in Crisis Resource Management for Obstetrics	page 8
Pioneer's Corner: Gerard Ostheimer, M.D.	page 11
SOAP 44 th Annual Meeting in Monterey, California	page 12
SOAP Grants and Awards	page 14

President's Message

Continued from page 1

Kudos to Dr. Linda Polley, who was in charge of the ASA's Obstetric Anesthesia scientific track. Also at the 2011 ASA annual meeting, we experienced the inaugural Gertie Marx Lecture, which was given by Dr. David Chestnut. The talk was very well received by the audience. The Sol Shnider Breakfast panel was on "Avoiding Catastrophes in Obstetrics," and the panel discussants were Dr. Joy Hawkins, Dr. Jake Beilin and Dr. Maya Suresh; all panels were also well attended and well received by the audience.

In keeping with the mission of SOAP, the Committee on International Outreach and the SOAP Grant Review Committee awarded Dr. Onyi Onuoha, Clinical Instructor, Department of Anesthesiology and Critical Care, Hospital of the University of Pennsylvania, Philadelphia, a research award for international outreach work in Ghana and will be expected to complete the proposed project over the next two years. The winner of the 2012 Gertie Marx grant was Terrence K. Allen, M.B.B.S., F.R.C.A., Assistant Professor of Anesthesiology, Division of Women's Anesthesiology, Duke University Medical Center. The title of his research is: "Mechanisms of Progesterone Mediated Effects on Cytokine Induced Metalloproteinase Activity in Human Trophoblast Cells." On behalf of SOAP, I would like to congratulate Dr. Onuoho and Dr. Allen for their outstanding proposals and for being the recipients of the awards.

On behalf of SOAP, I also extend my gratitude to Dr. Michael Frölich, who has become the ombudsman of our SOAP website. He hit the ground running after taking on the responsibility. He has helped make significant changes to the site, as he alludes to in the "Editor's Corner" of this edition of the SOAP newsletter. Dr. Robert D'Angelo, Immediate Past President of SOAP and Program Director of the Sol Shnider Meeting, has an excellent

program planned for the Sol Shnider Obstetric Anesthesia CME program. The meeting is to be held at the Grand Hyatt in San Francisco, March 22 through 25.

The SOAP 44th Annual meeting promises to be another spectacular event. Dr. Cally Hoyt, the Program Chair, and Dr. Dennis Shay have planned an exciting meeting in breathtaking Monterey, California.

The meeting will be held at the Hyatt Regency, Resort and Spa Hotel, where the Pebble Beach Company's championship Del Monte Golf Course is located. The theme of the meeting is "Obstetric Anesthesia in an Evidence-Based Environment" and offers a great lineup of lectures and speakers. There will be two workshops: one is the ultrasound-guided regional anesthesia and vascular access workshop led by Jose Carvalho, from University of Toronto, which was a huge success last year. The other workshop will be led by Dr. Steve Lipman, along with his colleagues from Stanford University, and will focus on simulation. Dr. Phil Hess will introduce the new clinical concept seminar session titled "Nuts and Bolts to Cutting Edge: A Seminar on Coagulopathy." Dr. Dennis Shay, the host in charge of the social events, has been working diligently to make the SOAP 44th Annual Meeting memorable through such events as whale watching, wine tasting, a Big Sur Coastline tour and the SOAP annual banquet at the Monterey Bay Aquarium.

Lastly, I would like to wish all our SOAP members and their families, and the members of the board, the very best for the coming year. On behalf of SOAP, I would like to thank Karen Hurley, Bob Fine and the SOAP staffers for their hard work, and I wish you all a prosperous 2012.

Michael A. Frölich, M.D., M.S.



Dear colleagues:

Happy New Year! We finished a very productive year for SOAP. Let me tell you a little bit about some of the many advances that the media committee has embarked on during the last couple of months.

After Bahvani Kodali and Bill Camann revamped the SOAP website about two years ago, the SOAP media team has been working steadily in keeping the information current and adding valuable content. Towards that end we updated the past meeting information to allow members to access abstracts, lectures and discussion sessions from previous years as they were available to us. We added more up-to-date information about grants and awards, information about the Obstetric Anesthesiology Fellowship accreditation and added our own photo section where the most memorable moments of the past meetings are captured. We now feature the most recent publications in the Obstetric Anesthesiology section of *Anesthesia & Analgesia* in a news banner on the left-hand side of our website's opening page and plan to expand on this section as scientific information becomes available to us.

Thanks to a few very dedicated individuals, we are also expanding in the area of social networking and mobile communication. We are now hosting a Facebook page at <http://www.facebook.com/SOAPHQ> that is "liked" by many of us. This page is hosted by Richard Month who, through his many contributions, has proven to be the runner up for the "SOAP MVP". Richard also developed a mobile app for the Sol Shnider meeting, which can be accessed by reading the QR symbol on the brochure and our website at <http://soap.org/sol-shnider-meeting.php>. How cool is that?! Tirelessly working behind the scenes to make this happen are our administrators, Karen Hurley and Terry Kenney, and our newsletter editorial team, Roy Winkler and Heather Iselin.

So let me say thanks to our media team members. Please send me your comments and suggestions. Comments and letters to me can be published in the newsletter and notes about what you would like to see on the website and in the newsletter can make communication and media work even better for our society.

Greetings and I am looking forward to seeing you in Monterey at our upcoming meeting in Monterey, California.

Michael Frölich, M.D., M.S.
SOAP Newsletter Editor

ACGME Accreditation of the Fellowship in Obstetric Anesthesiology: It's Official - We Are Our Own Specialty!



Alan C Santos, M.D., M.P.H.
Chairman of Anesthesiology
St. Luke's-Roosevelt
Hospital Center
New York, New York

As early as 1995, a task force was created by the SOAP Board of Directors (BOD) to consider whether ACGME accreditation of fellowships was in the interest of obstetric anesthesiology. The task

force members entertained several options, ranging from formal ACGME accreditation, to SOAP creating informal but non-binding program requirements, to simply educating residents regarding what constitutes a good fellowship. In the end, the task force recommended to the BOD to proceed cautiously with pursuing ACGME accreditation while at the same time continuously assessing an ever-changing public health and policy landscape. Since then, every BOD has incrementally supported the decision to seek accreditation as the realities of medicine evolved. At times, it would seem that the process would be derailed due to self-interest of individual programs and because of saber-rattling from some chairs that they would discontinue their obstetric anesthesia fellowships if we sought ACGME accreditation due to the scrutiny of the ACGME review committee process. The concern, of course, was financial and not educational, due to the fact that they would not be able to use "fellows" as junior faculty. However, in the end, the public health of women and the future of obstetric anesthesiology prevailed.

I believe accreditation is so important because the scope of our practice has been defined by an independent and credible organization, the ACGME. We also had to demonstrate that there is sufficient intellectual curiosity so that there is sustained production of new knowledge to impact clinical care as well as a sufficient number of physicians practicing the specialty to result in creation of societies, journals, etc. The other advantage of accreditation is that future generations of obstetrical anesthesiologists will develop within the framework of uniform training requirements and a defined set of core competencies specific to what it is that we do. Indeed, the program

requirements that have been developed move us way beyond the technical aspects of obstetrical anesthesiology to advocacy and social justice, multidisciplinary care, educating at every level, and so on. It is important for all of us to understand that what we have not applied for is certification, which would be awarded to an individual through some type of "demonstration of competence," but rather accreditation, which is awarded to a program for substantial compliance with the program requirements required of an obstetrical anesthesiology training program.

The program requirements and frequently asked questions have been approved by the ACGME and can be viewed on its website at www.ACGME.org; go to the drop-down menu item "Review Committees" and select "Anesthesiology." Initial accreditation will be by submission of a Program Information Form (PIF) specific to our specialty and which is available on the ACGME website. The deadline for PIF submission for review at the spring RRC meeting will be February 29,

2012, and we expect the first wave of programs to be accredited after the spring residency review committee meeting. As an additional resource, the SOAP Education Committee, under the guidance of Manny Vallejo, will be working on a companion document on how to develop a program.

As part of this rigorous process, we had to demonstrate that there is a distinct body of knowledge and specific core competencies acquired by an obstetrical anesthesiologist which are different from other anesthesiologists.

Many have worked tirelessly on this endeavor – too many to mention individually. However, I would like to extend my appreciation and thanks to all the task force members, and in particular to Nicole Higgins, Linda Polley, David Wlody and Cynthia Wong, who developed the program requirements with me. In addition, we all owe a word of thanks to Rita M. Patel. Since Rita is an obstetrical anesthesiologist, it was logical for the RRC to appoint her as our "ombudsman" to shepherd us through the application process. Lastly, I would like to acknowledge the executive staff at the ACGME, Pat Surdyk and Billie Hart, as well as Neal Cohen and the members of the RRC who joined us in real collaborative efforts to secure the future of obstetrical anesthesiology and anesthesiology.

COMMITTEE REPORTS

Disbursement Committee Update



*Valerie Arkoosh, M.D., M.P.H.
valerie.arkoosh@mac.com*

The Disbursement Committee was formed to consider and make recommendations to the SOAP Board of Directors as to the disbursement of funds from the Obstetric Anesthesia and Perinatology Education Fund (OAPEF), the Gertie Marx Education Fund and

other requests that may come to the Board. The Committee is comprised of four past SOAP Presidents (Valerie Arkoosh (Chair), Gerald Bassell, Joy Hawkins, Alan Santos), the SOAP Treasurer (John Sullivan), the Chair of the SOAP Education Committee (Manuel Vallejo), and the Chair of the SOAP Research Committee (Richard Smiley).

During 2011 the Committee was pleased to award the second SOAP/Gertie Marx Education and Research Grant. The funds for this \$50,000 (over two years) grant are available thanks to an extremely generous bequest to SOAP from the estate of Dr. Marx. The Committee would like to thank all of the submitters and the grant reviewers who graded the submissions using an approach similar to the one used by the NIH. The grading process was rigorous and went smoothly. The Grant will be offered again in 2012 with applications due October 1, 2012 with initial funds disbursed in January 2013. Go here for the application details: <http://www.soap.org/gertie-marx-award.php>

The Committee would also like to alert the membership to the Obstetric Anesthesia and Perinatology Education Fund (OAPEF). First, we encourage all members to consider donating to this tax-deductible fund. Donations are solicited with annual dues and at the time of meeting registration. Second, OAPEF funds may be requested to fund small projects (<\$10,000) that would not be eligible for the SOAP/Gertie Marx Education and Research Grant. Members interested in soliciting these funds should contact Committee Chair, Valerie Arkoosh.

The Committee is honored to serve the membership and Board and encourages and welcomes feedback on any of the items discussed above.

Membership Committee Report



*Vernon H. Ross, M.D.
Associate Professor
Department of Anesthesiology
Wake Forest University
School of Medicine
Winston-Salem, North Carolina*

Here is the 2011 report on the status of SOAP membership and an update on the work of the Membership Committee. I last reported to you in winter 2010. This

time last year, I was happy to report that membership had a modest growth. This year's news is disappointing. The membership statistics reveal that the total membership is down 12 percent to 987 members. We have a 0.7-percent decrease in active members and a 33-percent decrease in resident/fellow membership. Is this a reflection of our economy or something else?

The committee has presented to the Board of Directors a proposal to offer a multiple three-year active membership with a discount. This would allow members to reduce the long-term cost of the membership. It would also allow long-term membership to our faithful members so that they won't have to constantly remember every year to renew (only once every three years). This year, an e-blast will be sent out as a reminder for SOAP membership renewal. Our committee has developed encouragement letters that will accompany the e-blast extolling the benefits of membership. This letter will also go out to members who previously allowed their membership to lapse. A member benefit letter will also be added to the registration packet of all physicians at the Sol Snider meeting, which is now sponsored by SOAP.

Our committee is in the process of gathering data about whether every residency program in the country has a SOAP member representing it. If a significant number of programs do not have a SOAP member, how will residents from those programs learn about the benefits SOAP offers? If such programs exist, we would like to target them for membership recruitment and mentorship of faculty and residents. The residency committee is putting together a resident textbook as a best-practice guide for residents focused on general OB topics that will be available as a member benefit. Hopefully these two initiatives will help to sustain our resident member base and foster long-term active membership in our organization.

Continued on page 15

COMMITTEE REPORTS

Simulation In Obstetric Anesthesiology



*Thomas M. Chalifoux, M.D.
Assistant Professor
of Anesthesiology
Magee-Womens Hospital
of UPMC
University of Pittsburgh
School of Medicine*

Obstetric anesthesiologists have played a significant role in the development of simulation-based education. As the use of simulation increases, SOAP members are uniquely positioned to make

continued contributions, as obstetric anesthesia, by its very nature, encompasses the domains of anesthesiology that are at the forefront of simulation education and research.

How Is Simulation Being Used in Obstetric Anesthesiology?

Simulation is playing an increasing role in medical education, particularly for obstetric anesthesiology and perinatology. The unique but varied skills needed for obstetric anesthesia can be well represented using different simulation techniques. The multidisciplinary nature of obstetric anesthesiology requires effective teamwork and communication. Neuraxial anesthesia requires specific procedural skills. Clinical situations require specific knowledge and decision-making skills. Simulation relevant to obstetric anesthesia and related disciplines has therefore focused on education in three domains: teamwork, procedural skills and full-scale anesthesia care. In the future, these same domains will likely be used to assess clinical competency.

Team Training

In 2004, the Joint Commission Sentinel Event Alert "Preventing infant death and injury during delivery," cited communication and teamwork deficits in the labor and delivery environment as the most common problem underlying an obstetric sentinel event.¹ This finding is not surprising when one considers the multidisciplinary nature of obstetrical care. Personnel from anesthesiology, obstetrics, peripartum nursing and neonatology, as well as support services such as the pharmacy, blood bank and laboratory, all contribute to the care of the mother and infant. The dynamic, often high-stakes environment can make communication and teamwork especially difficult.

Simulation-based multidisciplinary team training has been used at many centers to identify these deficits and to train interdisciplinary teams to better communicate and coordinate care. Maslovitz and colleagues used a simulation-based study of performance by labor and delivery teams during common obstetrical emergencies to identify management errors.² Using four emergency scenarios, the authors looked at performance during management of eclamptic seizure, postpartum hemorrhage, shoulder dystocia and breech extraction. The most common management errors were: delay in transporting the bleeding patient to the operating room, unfamiliarity with prostaglandin administration to reverse uterine atony, poor cardiopulmonary resuscitation techniques, inadequate documentation of shoulder dystocia, delayed administration of blood products to reverse consumption coagulopathy, and inappropriate avoidance of episiotomy in shoulder dystocia and breech extraction.

The feasibility of using simulation to identify problems at both the individual and system level was investigated by Osman and colleagues using simulated obstetric drills conducted in both the labor room and emergency department.³ The authors sought to evaluate the performance of obstetric teams and the hospital system. The teams consisted of personnel from obstetrics, anesthesiology, emergency medicine, laboratory medicine, the blood bank and nursing. In this multicenter study, two scenarios, a medical emergency and a surgical emergency, were evaluated twice in three different hospitals. Problems identified were related to supplies and equipment, poor communication, unclear or deficient policies for emergencies, poor communication and inappropriate clinical management.

Dalby and colleagues have used a multidisciplinary simulation-based obstetric crisis management course to teach communication skills.⁴ In situ labor- and delivery-based versions of the course have revealed logistical problems involving such things as room design, transport issues, automatic door operation and emergency drug availability.

Does team training affect patient outcomes? Pratt and colleagues implemented and sustained a crew resource management-based team training process for an obstetrics unit and reported a positive effect both on the attitudes of the staff toward patient safety and on patient outcomes.⁵ In fact, they reported a 23-percent reduction in adverse obstetric events and a 62-percent reduction in malpractice claims.

COMMITTEE REPORTS

What makes team training successful? Siassakos and colleagues reviewed obstetric emergency training programs from hospitals that have demonstrated improved outcomes.⁶ The common features of effective training were: institution-level incentives to train, multi-professional training of all staff in their units, teamwork training integrated with clinical teaching and use of high-fidelity simulation models. Local training seemed to facilitate self-directed infrastructural change.

Procedural Skills

Simulation can be used to teach and practice procedural skills. The *see one, do one, teach one* mantra is approaching obsolescence. Task trainers for insertion of spinal or epidural needles allow learners to acquire skills before trying them on patients and facilitate deliberate practice in a controlled environment. Haptic (sense of touch) devices can simulate the tactile elements of a complex procedure, such as a spinal or epidural needle insertion.^{7,8} Friedman and colleagues found that a simple model, such as a banana, may be as useful as an expensive advanced simulator for teaching novices to place an epidural catheter.⁹ Advanced simulators, however, are becoming more sophisticated. As simulation devices improve, so might the teaching of the tacit knowledge that an expert anesthesiologist would possess.

Full-Scale Simulation

Full-scale simulation also allows the learner to gain tacit knowledge through experiential learning. Simulation has shown promise as an adjunct or even replacement for clinical experience. The number of cesarean deliveries performed under general anesthesia has declined, raising concerns about the ability of residents to be adequately experienced in this important anesthetic technique for parturients.¹⁰ In a randomized controlled trial of simulation-based training, Scavone and colleagues concluded that “anesthesiology residents who underwent focused training on a simulator that included performance of a general anesthetic for emergency cesarean delivery exhibited improved performance during a subsequent simulated anesthetic scenario compared with trainees who did not undergo such instruction.”¹¹ This study demonstrates the potential for simulation to supplement resident education, especially for rare clinical events.

Assessment

Simulation will likely play an increasingly important role in medical education and assessment. In 2010, the Carnegie Foundation for the Advancement of Teaching commissioned a study of medical education.¹² The resulting report, “A Call for Reform of Medical School and Residency,” advocated for fundamental change in medical education, consisting of new curricula, new pedagogies and new forms of assessment. Among the authors’

recommendations were: “At both the medical school and residency levels, medical education must ensure, through assessment, that learners achieve predetermined standards of competence with respect to knowledge and performance in core domains.” Yet establishing competency standards can be arduous, and how competency should be defined and measured has not been established.^{13,14} Nevertheless, simulation will likely be a key component of any such curricular changes.

Resources

Want to see firsthand what all the excitement is about? Obstetric anesthesia simulation workshops have been offered at both the SOAP and the ASA annual meetings. Obstetric simulation is a component of many simulation courses offered for the Maintenance of Certification in Anesthesia (MOCA[®]) program.¹⁵

If your institution has a simulation center, but you are not sure how to get an obstetric anesthesia simulation program started, there are many people willing to share their expertise with you. Several simulation centers offer courses to help you design and implement a simulation program.¹⁶ Offerings range from how to start a simulation program, develop a simulation-based curriculum and teach specific skills or topics, including an obstetric crisis team course. If you are comfortable teaching simulation and are looking for ideas or even ready-made peer-reviewed simulation scenarios or curricula, check out *Simulation in Healthcare*, the journal of the Society for Simulation in Healthcare or MedEdPORTAL. Recent offerings include anesthesiology scenarios for spinal anesthesia and a multidisciplinary obstetric bleeding curriculum.¹⁷⁻¹⁹

Obstetric anesthesiologists have played a significant role in the development of simulation-based education. As the use of simulation increases, SOAP members are uniquely positioned to make continued contributions, as obstetric anesthesia, by its very nature, encompasses the domains of anesthesiology that are at the forefront of simulation education and research.

References:

1. Preventing infant death and injury during delivery. *JCAHO Sentinel Event Alert*, 2004; July 21(30).
2. Maslovitz S, Barkal G, Lessing JB, Ziv A, Many A. Recurrent obstetric management mistakes identified by simulation. *Obstet Gynecol*. 2007;109(6):1295-300.
3. Osman H, Campbell OM, Nassar AH. Using emergency obstetric drills in maternity units as a performance improvement tool. *Birth*. 2009; 36(1):43-50.
4. Dalby P, Emerick T, Stein K, Wise N, Gabriella Gosman G. MD Interdisciplinary obstetric crisis team training enhances ACGME competency training. Society for Education in Anesthesia Spring Meeting, 2011.

Continued on page 15

Education: Update in Crisis Resource Management for Obstetrics



*Jill Mhyre, M.D.
Director of Research
Obstetric Anesthesiology
University of Michigan
Ann Arbor, Michigan*

In 2003, 15 labor and delivery units participated in a cluster randomized controlled trial to test the impact of MedTeams training on maternal and neonatal safety measured by the Adverse Outcomes

Index.¹ I work in one of the intervention centers. For us, the intervention involved three-hour didactic sessions that focused on key skills (e.g., call-backs to verify information) and processes (e.g., team meetings) to facilitate teamwork and situational awareness. Participants were enthusiastic at the time and implemented changes in workflow that continue to today (see the boxed comments). But the trial results were disappointing. None of the measured outcomes were different between the intervention and control hospitals in the months following training. Moreover, only one out of 11 process measures was improved following training — the unplanned cesarean decision-to-incision interval was shorter. So is crew resource management (CRM) really useless?

First of all, what exactly is CRM? It is a personnel management system that seeks to make optimal use of all available resources in a complex environment during both routine and non-routine circumstances. CRM attempts to capitalize on the ability of each team member to see, analyze and react to the same situation in ways that reduce the potential for error.¹ Common training modules include structured communication techniques (closed-loop, SBAR [Situation-Background-Assessment-Recommendation], two-challenge rule), situation monitoring and awareness (shared mental model, seeking information from all available sources), mutual support (peer workload monitoring, feedback, task assistance) and leadership (active workload monitoring and distribution, briefings and debriefings, role clarity). While MedTeams was the first to translate crew resource management principles from the airline industry to the labor and delivery suite, a whole series of curricula have been developed over the past 20 years.

In 2007, Steve Pratt published a description of how Beth Israel Deaconess modified the original MedTeams curriculum by ensuring participation in the training course,

implementing each CRM concept in clinical practice while tracking outcomes in real time, and communicating successes and areas for improvement to the teams.² The adverse outcome index improved 22 percent, and the weighted adverse outcome score and severity index also improved. Fewer women experienced complications and those that did occur were less severe. The number of legal claims filed for high-severity events declined 62 percent from 6.5 to 2.5 per 10,000 deliveries.

Using this experience, the same group developed Team Performance Plus (TPP), which targeted communication and cooperation skills. Within a participating New York community hospital between April and May 2006, all nursing staff, attending anesthesiologists and obstetricians, the director of neonatology, and neonatal nurse practitioners completed the TPP program.³ Team meetings, briefings and debriefings were used to identify areas in which patient care could improve. This led to a number of initiatives, including an in-service for nursing staff regarding the delivery room nurse's role in assisting with general anesthesia. The severity index did not change, but in the span of nine months prior to and a year and half following training, the adverse outcome index improved from 7 percent to 4 percent. In fact, adverse outcome indices have improved in at least half of the TPP centers.

In 2006, the Department of Defense and the Agency for Health Research and Quality (AHRQ) released Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS).⁴ The TeamSTEPPS curriculum was adopted by the Yale labor and delivery unit as part of a comprehensive patient safety improvement initiative.⁵ This program was led by a patient safety nurse who established an anonymous event reporting system, tracked events, presented findings to a patient safety committee, and facilitated the development of a series of clinical protocols to support safe care and limit clinical heterogeneity. Over time, the AOI decreased from 3.5 percent to an average rate of less than 2 percent; a series of questionnaires reported improvements in perceptions of patient safety and teamwork. In response to the inquiry about the role of TeamSTEPPS in this success, lead author Christian Pettker responded, "I would conclude that team training actually had a significant contribution to our success and much of the gain we saw in the SAQ was exclusively due to supporting Team Training in our daily activities. While faculty and staff have not received recurrent training, the obstetrics residents get an update every couple of years... Both the Nursing Manager and I very regularly enforce the basic principles [of team training] when we encounter

staff and work through problems and situations. This reinforcement is critical to its continued use and is why many centers fail in implementing team training.”

This reinforcement is critical...

Grunebaum and colleagues from New York Weill Cornell Medical Center introduced a local CRM training program in 2003; participants repeated training every two to three years and learned a series of patient safety interventions.⁶ Again, the training was implemented as part of a comprehensive obstetric patient safety program that also included consultant review, electronic medical record documentation, clarification of clinical protocols, proactive identification and legal management of significant adverse events, an obstetric patient safety nurse to track events and implement systems solutions, a clear chain of command to ensure that safety concerns could be addressed, increased staffing with physician assistants and a laborist, electronic fetal monitoring certification, and multidisciplinary obstetric emergency drills. Malpractice payouts plummeted from over \$50 million in 2003 to \$250,000 in 2009, while sentinel events per 1,000 deliveries declined from 1 to 0. I wrote to Dr. Grunebaum and asked to what extent he thought team training contributed to this success. He replied that each component was essential. “Patients safety encompasses many aspects, and... when there is a weak link everything may break.” With respect to implementation, Dr. Grunebaum reported that “We meet, discuss, get ideas and change if necessary...Changing and continuously improving culture is essential.”

“...Changing and continuously improving culture is essential.”

In 1998, the Veterans Administration created the National Center for Patient Safety and developed the medical team training program starting in 2003, and then took the program to scale by deploying it in over 100 facilities by 2010. The program is focused on the perioperative environment. During implementation at each facility, patient safety officers close the operating suite for a full day and engage all frontline providers in a CRM curriculum.⁷ Following training, each center is required to begin preoperative briefings and debriefings in the operating room. The most important predictor of successful implementation is a high level of involvement by facility leaders, which may reflect the ability of a facility to direct ongoing resources toward successful implementation.^{8,9}

In 2010, an analysis of 182,000 sampled procedures demonstrated that every quarter of program participation reduced surgical mortality by 1 in every 2,000 procedures.¹⁰ CRM training differs from multidisciplinary simulation, but CRM principles are often taught and reinforced using simulation techniques.

The most important predictor of successful implementation is a high level of involvement by facility leaders...

CRM training differs from multidisciplinary simulation, but CRM principles are often taught and reinforced using simulation techniques. Multidisciplinary training for acute obstetric emergencies does improve knowledge, skills, task performance and communication among participants regardless of whether the drills are completed in a simulator or a classroom.¹¹ Three randomized trials by Crofts et al.¹²⁻¹⁴ suggest no additional benefit of CRM training above and beyond that achieved by multidisciplinary simulation (“skills drills”) alone. This conclusion was based on written examination of clinical knowledge, impressions of a simulated patient instructor and clinical performance during simulated crises (e.g., eclampsia); no trial has tested the impact of CRM training versus multidisciplinary clinical skills training on day-to-day performance and clinical outcomes in a more complex labor and delivery unit with multiple patients and an entire team of physicians, nursing staff and ancillary personnel.

Simulation-based training allows participants to practice translating declarative knowledge into procedural knowledge.¹⁵ Key components for training in obstetric emergencies include: institution-level incentives to train, multi-professional training, teamwork training integrated with clinical teaching, high psychological fidelity, opportunities for practice and feedback, and local training.¹⁵⁻¹⁷ In situ simulation in the labor and delivery unit may be particularly effective in identifying latent hazards.¹⁵ Explicit sequential handoff of team leadership as the scenario unfolds appears to be important to practice in a simulated setting (e.g., transferring leadership from the nurse in the labor room to the obstetrician to the anesthesiologist in the operating room).¹⁸

My unit is preparing to move to a new hospital, with a new labor and delivery unit. The total physical area is four times as large as the current unit, and distances are twice

Continued on page 10

Education:

Update in Crisis Resource Management for Obstetrics *(continued)*

Continued from page 9

as long. The opportunity for communication errors will almost certainly increase. To prepare, we have constructed eight emergency scenarios and plan 12 four-hour shifts in which each of the scenarios will be drilled in the new unit by teams of frontline providers before the unit opens for clinical care. But the literature suggests that this effort is only just the beginning. Active sustainment of established training programs requires resources, organizational commitment, relevant data and feedback that focus on accomplishments and areas for further growth. Crew resource management appears to be one important piece of a comprehensive patient safety program.

Here are the responses my colleagues supplied when asked: “What did you take away from the MedTeams training? How did it change our unit?”

“Better situation awareness. You have a feel for the whole unit... and can help more effectively, even when it is someone else’s patient... so if there is a cardiac event, I might just bring the crash cart, but then I can update additional team members when they arrive to help.” – L&D nurse

*“We started team meetings with the nursing staff and clerks... in addition to the board sign out between the obstetricians and anesthesiologists. It turns out we miss a lot of information that the nurses pick up and present at team meeting...”
– Obstetrician*

“Communication at any level is better than none... I don’t know if it improves outcomes but it improves relationships between team members.” – L&D nurse

“It’s a chance to remind everyone about airway issues, platelet counts, blood product availability, potentially difficult neuraxial blocks.... We take away info about fetal status and course of labor that impacts our analgesic management, but even the social stuff can be important, like if the baby is up for adoption... it changes what I say...” – Anesthesiologist

References:

1. Nielsen PE, et al. *Obstet Gynecol.* 2007;109:48-55.
2. Pratt SD, et al. *Jt Comm J Qual Patient Saf.* 2007;33:720-5.
3. Shea-Lewis A. *J Healthc Qual.* 2009;31:14-8.
4. Agency for Healthcare Research and Quality. TeamSTEPS. Rockville, MD U.S. Department of Health & Human Services.
5. Pettker CM, et al. *Am J Obstet Gynecol.* 2009; 200:492 e1-8.
6. Grunebaum A, et al. *Am J Obstet Gynecol.* 2011; 204:97-105.
7. Dunn EJ, et al. *Jt Comm J Qual Patient Saf.* 2007; 33:317-25.
8. Paull DE, et al. *Am J Surg.* 2009; 198:675-8.
9. Robinson LD, et al. *J Perianesth Nurs.* 2010; 25:302-6.
10. Neily J, et al. *JAMA.* 2010; 304:1693-700.
11. Merien AE, et al. *Obstet Gynecol.* 2010; 115:1021-31.
12. Ellis D, et al. *Obstet Gynecol.* 2008; 111:723-31.
13. Crofts JF, et al. *BJOG.* 2007; 114:1534-41.
14. Crofts JF, et al. *Qual Saf Health Care.* 2008; 17:20-4.
15. Salas E, et al. *Human Factors.* 2000; 42:490-511.
16. Harris KT, et al. *J Obstet Gynecol Neonatal Nurs.* 2006; 35:557-66.
17. Siassakos D, et al. *BJOG.* 2009; 116:1028-32.
18. Riley W, et al. Structure and Features of a Care Enhancement Model Implementing the Patient Safety and Quality Improvement Act (Vol. 1: Assessment). 2008.

Pioneer's Corner: **Gerard Ostheimer, M.D.**

*William Camann, M.D.
Director, Obstetric Anesthesia
Brigham And Women's Hospital
Boston, Massachusetts*

The name Gerard Ostheimer should be familiar to all SOAP members, owing to the eponymous lecture given each year at our annual meeting. But who was Gerard Ostheimer, the man, and what was his role in our specialty of obstetric anesthesia?

"Gerry," as many knew him, and as he insisted on being called, even to new and casual friends, was one of the most productive and influential obstetric anesthesiologists of his time. Born in 1940 in upstate New York, he received his medical degree at the University of Pennsylvania in 1965, and completed his residency in anesthesiology at Penn. Following residency, he did a fellowship in cardiovascular anesthesia at Mayo Clinic and a research fellowship at Massachusetts General Hospital. Gerry's interests soon gravitated toward obstetric anesthesia, and he joined the staff at the Boston Lying-In Hospital, the forerunner of today's Brigham & Women's Hospital (BWH). Other great legends in our specialty were at or soon joined the faculty, including Jess Weiss, Milt Alper, Sanjay Datta, and eventually, Benjamin Covino.

Gerry served as Director of Obstetric Anesthesia at BWH from 1981 until 1988, and was Professor of Anaesthesia at Harvard Medical School. He was president of SOAP in 1980. Gerry was the author of hundreds of articles, book chapters, reviews, letters and various other contributions to the literature. His prominence extended beyond obstetric anesthesia to include regional anesthesia, serving as president of the American Society of *Regional Anesthesia* in 1991, as well as the Editor-in-Chief of *Regional Anesthesia*. He was the author of numerous books; most notable is "*Ostheimer's Manual of Obstetric Anesthesia*", now under David Birnbach's editorial guidance.



I was fortunate to have known and worked many years with Gerry. As a resident, he was one of my first attendings on obstetric anesthesia rotations. Gerry was no shrinking violet; with a daunting physical presence, over six feet tall, portly, a booming voice and thick hoary beard, you always knew when Gerry was around. When he was in the room, the nurses, obstetricians, and fellow anesthesiologists KNEW that all would be well.

Gerry had a command of language that was masterful. One of his most beloved activities was manuscript editing, which he did with gusto and enthusiasm. Before the days of word processing and track changes, he would return "blue-lined", hand-edited, manuscripts to authors that often had more corrections than original words! His linguistic mastery extended from the written word to the spoken; no one EVER fell asleep during one of Gerry's lectures. Reading his works and edits, and listening to his lectures, you did not just absorb the specific content, you learned HOW to write a manuscript and HOW to deliver a lecture.

Gerry loved life. Meals with him were an experience not to be forgotten. Those who worked with him at BWH will recall his weekend breakfasts for the on-call team of bagels, smoked salmon, and sarsaparilla soda. He was an avid fisherman, who often brought colleagues, including residents, on his many fishing trips. He tied flies with as much skill and precision as when inserting a delicate spinal needle into a difficult back. Sadly, on October 1, 1995, Gerry died of sudden cardiac arrest at age 55. The specialties of obstetric and regional anesthesia lost a giant that day. His legacy lives on through further editions of his books, and through the annual "Gerard Ostheimer What's New in Obstetric Anesthesia" lecture.

His large physical presence belied the gentlest touch; he could work wonders with an epidural or spinal needle in the most anatomically challenging circumstances. If fundal pressure was needed to help a difficult delivery, Gerry was the first to be called.

SOAP 44th Annual Meeting in Monterey, California



*McCallum R. Hoyt, M.D., M.B.A.
SOAP, President-Elect
Chair, 2012 SOAP Annual Meeting
Brigham And Women's Hospital
Boston, Massachusetts*

Our 44th Annual SOAP meeting will be hosted in breathtaking Monterey, California, a charming coastal town about two hours south of San Francisco, home to Cannery Row and the Pebble Beach Golf Resorts.

The meeting will be held at the Hyatt Regency Monterey Hotel & Spa. The meeting promises to be as intellectually inspiring as the view is spectacular. The SOAP Welcome Reception will be held outdoors in the hotel courtyard where you can reunite with old friends and mingle with conference participants. Dennis Shay (meeting host), Cally Hoyt (program chair and SOAP president-elect), and Maya Suresh (SOAP president) look forward to greeting you at the reception. (Marilyn and Elvis will not be there, sorry! Dennis is working on Clint, but has been told, "If you want a guarantee, buy a toaster.")



Two workshops and a new clinical concept seminar will be offered on Wednesday, May 2nd. Jose Carvalho and his colleagues from the University of Toronto will lead the ultrasound workshop. Steve Lipman and his colleagues from Stanford University will lead a High-Risk Obstetric Crisis Simulation. Phil Hess will introduce the new clinical concept seminar with a session entitled "Nuts and Bolts to Cutting Edge: A Seminar on Coagulopathy".

The meeting will officially commence on Thursday May 3rd. The theme of the meeting is "Obstetric Anesthesia in an Evidenced Based Environment." To kick off that theme, Dr. Gordon Guyatt, the "father" of evidence-based medicine concepts, will give the Gertie Marx/FAER special lecture entitled, "Why Bother with Evidence Based Obstetrical Anesthesia?". The traditional SOAP lectures



will be given: the Gertie Marx Competition, the Hehre Lecture by Dr. Gordon Lyons, "What's New in Obstetrics" by Dr. Julian Parer, "What's New in Obstetric Medicine" by Dr. Raymond Powrie, and the Ostheimer lecture by Dr. Alex Butwick. Keeping within the theme of the meeting, Dr. Pamela Angle will offer an interactive, group session on using evidence-based techniques in practice; and Dr. Richard Smiley will host a walk-around session with selected posters during one of the breaks. Because the meeting is on the West coast, it will conclude on Saturday afternoon to make travel more convenient, but an optional wine tasting will be offered Saturday evening for those not needing to hurry off.

Three optional tours are being offered for your loved ones during the meeting; and of course, Friday afternoon will be free for you to join them in an activity of your choice.

Whale watching: On Thursday morning, your family can go on a three hour whale watching





cruise aboard the *Princess Monterey*. In May, common sightings include Humpback and Blue whales as well as orcas and dolphins. Don't forget your camera and scopolamine patch!

Wine tasting: For more adult palates, we have arranged a Carmel Valley Wine Tour where your companions can visit three wineries. California's central coast is known for its award winning grapes—and you're sure to find a few favorite whites and reds to enjoy at the vineyard and ship home!

Big Sur Coastline Tour: This tour takes your loved ones south down the famous Highway 1 to breathtaking Big Sur. Sights may include Point Lobos State Reserve, Julia Pfeiffer Burns State Park, the famous Nepenthe restaurant, and Bixby Bridge.

Finally, Friday night will be the SOAP Banquet, held at the Monterey Bay Aquarium. This event is not to be missed! The Monterey Bay Aquarium is one of the best aquariums in the world, and to better appreciate its offerings, we will have a "strolling" dinner with heavy hors d'oeuvres to allow you to socialize with colleagues from around the world while surrounded by kelp forests, octopi, anemones, and, of course, those cute sea otters. Given the unique nature of this event, the awards presentations

will be made at the beginning of Saturday's conference. Space will be limited for the banquet so be sure you make your reservations early.

**2012 Sol Shnider, M.D.
Obstetric Anesthesia Meeting**

March 22-25, 2012
Grand Hyatt San Francisco, CA

SOAP 44th Annual Meeting

May 2-5, 2012
Hyatt Regency Monterey Resort & Spa
Monterey, CA

Go to www.soap.org to register
and for more details.

We are truly excited about this meeting and believe Monterey will continue to build on the SOAP tradition of being an outstanding conference and event. Please check the website for additional information and watch for the e-blasts we will be sending out. Important information on transportation, registration and other key issues will be found in these sources and in the brochure. See you in Monterey!



SOAP Grants and Awards

SOAP sponsors several grants and awards. For information on grants and awards, please visit our website at soap.org/fellowships-grants-awards.php.

SOAP/Gertie Marx Education and Research Grant

The goal of this program is to provide initial funding for projects and investigators with the intention that the results of these projects will form the basis of subsequent grant applications to other society, foundation (e.g., IARS, FAER) or federal sources. This award is not intended to supplement ongoing projects or to provide additional funding to partially funded projects.

The SOAP/Gertie Marx grant will provide a maximum of \$50,000 over two years to support research in obstetric anesthesia or a closely related area. Fundable projects may include research in basic physiology, clinical practice, or teaching/training methods. Funding requests will be considered in any amount up to \$50,000.

For more information, please visit: www.soap.org/gertie-marx-award.php. Deadline for submissions: October 1, 2012.

SOAP-Kybele International Outreach Grant

The goal of this program is to provide funding needed to get involved with international outreach projects in collaboration with Kybele in order to identify and train future leaders in international outreach from SOAP members. Specifically the grant is designed to encourage research in collaboration with host countries with the goal of enhancing the practice of obstetric anesthesia in those countries.

The SOAP/ Kybele International Outreach Grant provides \$5,000 to cover travel and related expenses for two trips to a country where a Kybele program is ongoing.

The first grant was awarded in 2011 to Dr. Onyi Onuoha, Clinical Instructor, Department of Anesthesiology and Critical Care, Hospital of the University of Pennsylvania, Philadelphia.

Deadline for the 2012 grant is March 30, 2012. The winner of this grant will be announced at the 2012 SOAP meeting. Further details can be found at the SOAP website at www.soap.org.

SOAP Media Award

The goal of the SOAP Media Award is to acknowledge the contribution of a member of the media in furthering public awareness of the important role obstetric anesthesiology plays in the care of the parturient.

Journalists, photographers, producers, directors and any other media professionals involved in the development and advancement of the above content will be considered. All relevant media genres including but not limited to print, radio, television and the internet are eligible. Awards are granted on merit, and categories may not be awarded each year.

The award will consist of a plaque to be presented at the annual SOAP meeting. [Note: While ASA provides

reimbursement of travel expenses (up to \$1,000 maximum), SOAP has been cautious about doing so.] The recipient will have the opportunity to address SOAP members after receiving the award.

Deadline for submission: January 31 (SOAP 2012 – May 3-5).

SOAP Teacher of the Year Award

The goal of the SOAP teacher(s) of the year award are to recognize two outstanding practitioners of obstetric anesthesiology who have demonstrated superior teaching primarily of Anesthesiology residents and fellows, and secondarily of nurses, midwives, Obstetricians, and lay people. Two individuals of differing clinical experience will be acknowledged. First, a practitioner with less than ten years experience post residency/fellowship will be considered, with a focus on local/regional results. The second award will be presented to a practitioner of more than ten years experience, with a focus on national results – with significant contributions to teaching, including how to do research and promotion of obstetric anesthesiology at the national level. The SOAP Awards Subcommittee of the Education Committee is charged with this task and would like nominators to consider the following attributes of the candidates: clinical teaching, mentoring, and research interests.

First, a practitioner with less than ten years experience post residency/fellowship will be considered, with a focus on local/regional results. The second award will be presented to a practitioner of more than ten years experience, with a focus on national results. Documentation of teaching experience, contribution, evaluations, chairman's letter is required.

Will consist of a certificate.

Any member may submit a candidate and media to SOAP. All submissions will be reviewed by the SOAP Awards subcommittee of the Education Committee. Recommendations for Awards granted, if any, are forwarded to the Board of Directors.

Deadline for submission: January 31.

SOAP Research in Education Award

The goal of the SOAP Research in Education Award is to acknowledge the contribution of a member in furthering Education by quality research being presented at the Annual SOAP meeting.

Abstracts submitted to the Annual Meeting of SOAP dealing with Education will be considered.

The award will consist of a plaque to be presented at the annual SOAP meeting as well as a \$500 award.

The Research Committee screens abstracts and identifies which abstracts are eligible for consideration for the Research in Education Award. Recommendations for Awards granted, if any, are forwarded to the Board of Directors.

Deadline for submission: Regular abstract deadline – January 31. (SOAP 2012 – May 3-5).

Membership Committee Report

Continued from page 5

My involvement with the Media Committee has brought about a change in the look of the SOAP website homepage. The listing of membership benefits has now been moved to a more prominent spot on the page so that we can advertise our benefits front and center to non-members who visit us. In addition, SOAP now has a Facebook page (check it out) that provides information about SOAP through social media.

Do You Use SOAP? The best advertisement for our organization is our current SOAP members. The membership committee believes that each of us can help maintain the viability of our organization by recruiting others not only within our own practices, but also among our colleagues at large. One way to accomplish this is by making them aware of the many benefits our organization offers to its members. *I believe that laboring mothers prefer their anesthesiologist to use SOAP!* We are looking into incentives that would encourage such recruitment efforts. We welcome your suggestions. As always, the membership committee wants your input on how we can best serve the society. Feel free to contact me with your comments at vhross@wfubmc.edu.

Simulation in Obstetric Anesthesiology

Continued from page 7

- Pratt S, Mann S, Salisbury M, et al. Impact of CRM-based team training on obstetric outcomes and clinicians' patient safety attitudes. *Jt Comm J Qual Patient Saf.* 2007; 33:720-725.
- Siassakos D, Crofts J, Winter C, Weiner C, Draycott T. The active components of effective training in obstetric emergencies. *BJOG.* 2009; 116:1028-1032.
- Kulsar ZM, Lovquist, E, Fitzgerald AP, Aboulafia A, Shorten GD. Testing haptic sensations for spinal anesthesia. *Reg Anesth Pain Med.* 2011; 36:12-16.
- Magill JC, Byl MF, Hinds MF, et al. A novel actuator for simulation of epidural anesthesia and other needle insertion procedures. *Sim Healthcare.* 2010; 5:179-184.
- Friedman Z, Siddiqui N, Devito I, Naik VN. Clinical impact of epidural anesthesia simulation on short and long-term learning curve and complication rate: high fidelity vs. low fidelity model training. *Reg Anesth Pain Med.* 2009; 34:229-232.
- Nishman R. Regional vs. general anesthesia in obstetrics. *SOAP Newsl.* Spring 2011:14.
- Scavone BM, Toledo P, Higgins H, Wojciechowski K, McCarthy RJ. A randomized controlled trial of the impact of simulation-based training on resident performance during a simulated obstetric anesthesia emergency. *Sim Healthcare.* 2010; 5:320-324.
- Cooke M, Irby DM, O'Brien BC, Shulman LS. Educating Physicians: A Call for Reform of Medical School and Residency. Hoboken, NJ, Jossey-Bass/Carnegie Foundation for the Advancement of Teaching, 2010. Summary, accessed at <http://www.carnegiefoundation.org/elibrary/summary-educating-physicians>.
- Scavone BM, Sprovierio MT, McCarthy RJ, et al. Development of an objective scoring system for measurement of resident performance on the human patient simulator. *Anesthesiology.* 2006; 105:260-266.
- Chalifoux T. Developing an assessment tool for performance in a cesarean section under spinal anesthesia. American Society of Anesthesiologists Annual Meeting. Chicago, IL. 2011.
- The American Society of Anesthesiologists' Simulation Education Program. <http://www.asahq.org/For-Members/Education-and-Events/Simulation-Education.aspx>.
- Society for Simulation in Healthcare simulation center directory. <https://ssih.org/sim-center-directory>.
- McIvor W, Olutunmbi Y, Borrell. Management of profound hypotension secondary to spinal anesthesia: simulation case scenario. *Sim Healthcare.* 2010; 5:61-64.
- Eason M, Olsen ME. High spinal in an obstetric patient: a simulated emergency. *Sim Healthcare.* 2009; 4:179-183.
- Reid J, Wu C, Lombaard S, et al. Obstetric Bleeding Curriculum. MedEdPORTAL; 2011. Available from www.mededportal.org/publication/8305.



520 N. Northwest Highway
Park Ridge, IL 60068-2573

Society for Obstetric Anesthesia and Perinatology 2011-2012 Board of Directors

President

*Maya S. Suresh, M.D.
Houston, TX*

President-Elect

*McCallum R. Hoyt, M.D., M.B.A.
Boston, MA*

First Vice President

*Barbara M. Scavone, M.D.
Chicago, IL*

Second Vice President

*Robert B. Gaiser, M.D.
Philadelphia, PA*

Treasurer

*John T. Sullivan, M.D.
Chicago, IL*

Secretary

*Kenneth E. Nelson, M.D.
Winston-Salem, NC*

Immediate Past President

*Robert D'Angelo, M.D.
Clemmons, NC*

Journal Liaison

*William R. Camann, M.D.
Waban, MA*

Chair, ASA Committee on Obstetric Anesthesia

*Craig M. Palmer, M.D.
Tucson, AZ*

Newsletter Editor

*Michael A. Frölich, M.D.
Birmingham, AL*

Meeting Host 2013

*Vilma Ortiz, M.D.
Boston, MA*

Meeting Host 2012

*Dennis C. Shay, M.D.
San Diego, CA*

Director at Large

*Brendan Carvalho, M.B.B.Ch.
Stanford, CA*

Representative:

ASA House of Delegates

*Richard N. Wissler, M.D., Ph.D.
Pittsford, NY*

ASA Alternate Delegate

*Paloma Toledo, M.D.
Chicago, IL*

Ex Officio Member

*Lawrence C. Tsen, M.D.
Dover, MA*