President's Message

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Jerry M. Calkins, PhD, MD

The STA events at the 1993 ASA Annual Meeting in Washington DC, were a tremendous success. Much of this success is due to the efforts of Alan Grogono, MD, the Education Committee, and our Executive Director, Kim Roberts, CPA. The Annual STA Dinner was held at the 701 Pennsylvania Avenue Restaurant. The presentation by Commander C.M. Wood, USN (ret.) was extremely stimulating and informative. The next morning, nearly 400 participants attended the sold-out Monday morning breakfast session at the ASA meeting. The presentations were exceptional and the discussion lively.

Annual Meeting

Our Annual Meeting is rapidly approaching. I would like to encourage everyone to attend. This meeting will be held in Orlando, Florida, on January 27-29, 1994 and promises to continue the trend of unique and stimulating annual meetings. The day prior to the annual meeting (Wednesday, January 26), STA will hold its annual business retreat. The purpose of this retreat is to plan for the Society's coming year. The activities for that day will include a Board of Directors' meeting, committee meetings, and an open meeting of all attendees. I highly recommend committee members and anyone interested in becoming more active in this organization to plan on attending. Additional information is available from the National Office.

The videotape series for the *1992 Design of the Workstation* is currently available. I encourage everyone to obtain their copies as soon as possible. All proceeds go to furthering STA's activities.

I have good news! The financial situation of STA has significantly improved over the past several months. Much of this improvement is due to the efforts of our leadership, membership, and the corporate sponsors. I was very pleased to see how everyone has rallied to solve some of the major budgetary problems we have had to face. It is this type of response that truly makes STA a unique organization.

Time to Vote!

I hope everyone voted in this year's election. We are electing a President-Elect and replacing Bob Chilcoat, PhD, from the Board of Directors.

STA Election News

By the time you receive this issue of the newsletter, the balloting for President-Elect and a new member of the Board of Directors should be completed. J.S. Gravenstein will be leaving the office of President-Elect to become the next Society President and Robert Chilcoat will have completed his tenure on the Board of Directors.

Ballots were sent to all members who had paid their dues by December 31, 1993. STA is fortunate to have a slate of highly qualified candidates for the open positions.

Results of the election will be announced at the STA Annual Meeting during the general membership session on Thursday, January 27. Please see page 11 for the slate of candidates.

INSIDE THIS ISSUE:

ESCTAIC Holds 4th Annual Meeting

Magnificent autumn weather welcomed 140 participants to the 4th Annual Meeting of ESCTAIC in the picturesque Alpine village of Goldegg, Austria. Beautifully polychromed walls of lecture rooms located in the 13th century Goldegg Castle complemented the contents of sessions. The Meeting started with an afternoon tutorial. R. Spitz presented the architecture of relational databases and A. Ude explained the principles of SQL languages — two lectures which complemented each other perfectly. D. Jones, with his usual fluency, described the features of the Microsoft operating system of the future — Windows NT. Maria Toro, in a very well prepared lecture, presented the didactic database used at the computer laboratory of the Department of Anaesthesia at Madrid University Hospital.

PDMS

The next two-and-a-half days were filled with continuous parallel sessions which were often difficult to choose between. Presentations of commercial Patient Data Management Systems (PDMS) were interlaced with lectures on practical aspects of their design and problems with implementation. P. Metnitz and K. Lenz presented an ambitious overview of PDMS in Europe. The authors compiled the technical specifications, listed the functions and measured the performance of systems commercially available in Europe.* Andreas Tecklenburg criticized commercial PDMS systems which attempt to cover all aspects of intensive care as too complex and rigid for practical use. He recommended a flexible integration of specialized software components. At the moment, the software to link these specialized components is under development at his department.

Aaron Kari informed ESCTAIC of an international project entitled "European Users' Requirements for Information Systems for Intensive Care" (EURISIC) which was initiated by the European Society for Intensive Care Medicine. The project consists of nine local projects run by clinicians in eight European countries. The goal is to compile the local system requirements to form a common core. The project is financed by corporate partners and is scheduled for completion in June 1994.

M. Harlander reviewed the advantages and disadvantages of UNIX and Novell networks from the technical and network administrative points of view. She underlined the aspects of security and manageability of these networks and advocated the use of UNIX networks and TCP/IP communication protocol.

Ergonomics and the Workspace

Processing overload and not information overload is what anaesthesiologists are suffering from according to Graham Higgins from Hewlett-Packard Labs. Dr. Higgins referred to the observational cognitive psychological study of British anaesthesiologists during cardio-pulmonary bypass procedures. The study indicated once again that, under conditions of high mental load, clinically important data can go unnoticed even by experienced and highly skilled anaesthesiologists. The psychological explanation of this is that the anaesthetist is overloaded with so many physical and analytic tasks that he tends to filter out the information that does not fit the momentary context. Unless a heavily loaded clinician deliberately allocates attentional resources to particular information, this information will be lost. These findings have

implications for both the methods of displaying information to the clinician and the ergonomic design of the workplace.

Process Analysis

John Zelcer, from St. Vincent's Hospital in Melbourne, Australia is deeply involved with ergonomic issues as part of a new hospital construction project.

Record Attendance at ASA Breakfast Panel

The annual STA-sponsored breakfast meeting at the Annual ASA meeting took place on October 11, 1993. The meeting was entitled New Technology: Can We Afford It? Can We Afford Not to Use It? The combination of the topic, the speakers, and the move this year from Wednesday to Monday resulted in a record turn out; every ticket for this breakfast panel was sold. Alan W. Grogono, MD, of Tulane University School of Medicine, organized and moderated the panel where invited speakers focused on new or complex technologies in anesthesia practice. Each speaker was charged to make a brief presentation designed to stimulate discussion. The speakers followed their instructions faithfully and a lively discussion ensued.

Dr. Steven J. Barker of the University of California, Irvine, spoke first on neurophysiological monitoring and provided a neat summary of existing technology. He reviewed the various methods of processing and presenting electroencephalographic signals, and discussed the different uses for evoked potentials. He also introduced the audience to the likely role of new monitors in the future, including the use of near infra-red spectroscopy. He reminded the audience that for many procedures, the best monitor of neurophysiological function is still the alert, conscious patient.

Steve was followed by Dr. Michael K. Cahalan of the University of California, San Francisco, who spoke on transesophageal echocardiography (TEE). Dr. Cahalan noted that the average cost per year per TEE machine was about $50,000 but went on to explain that TEE can be cost effective. In some circumstances, TEE can eliminate the need for a pulmonary artery catheter as a monitor of cardiac function. When used during cardiac valve surgery, he showed convincingly how TEE can reduce the incidence of re-operation as well as morbidity and mortality. He explained that TEE is also capable of diminishing the incidence of post bypass stroke by detecting aortic atheromas, as well as identifying a flawed repair in congenital heart surgery. His conclusion was that there are circumstances where we cannot afford not to use it.

Dr. James B. Eisenkraft of Mount Sinai Medical Center, New York, spoke next on respiratory monitoring in the anesthesia circuit. He provided an analysis of the advantages and disadvantages of monitoring the circuit distally and proximally and illustrated these concepts in various ways. He went on to summarize the current status of side-stream spirometry in adults and to indicate its likely imminent introduction into pediatric practice. He concluded that side-stream spirometry has the potential to become a useful standard method of monitoring the circuit.

Electronic Medical Records

Dr. Michael L. Good of the University of Florida, Gainesville, spoke on automated anesthesia record keepers (AARKs). He emphasized that AARKs may be the only way to obtain consistently accurate data and that, without such data, it is not possible to make good decisions. He did not believe that an automated record keeper will improve safety significantly but it will enable better data to be collected and will facilitate the analysis of events which occur during surgery. He illustrated the advantages of the automated record using an example of a hypotensive episode which was analyzed and clearly explained based upon accurate data collected by an automated recordkeeper.

Dr. Michael F. Roizen of the University of Chicago, spoke on the related topic, electronic medical record keeping. He emphasized that it was imperative to improve the transfer, use and integration of information to improve patient care, and that society needs information to optimize the balance between well-being and expenditures. He added that in the U. S., health care expenditures are out of control and that we do not get healthier by merely spending more money. He also reported the recent publication by Tierney et al which demonstrated that reduced costs from computerized systems can pay for the system in one year. He closed with the exhortation that anesthesiologists must be involved to advocate for the patient and educate health care administrators about the specifics of clinical practice.

The final speaker was Dr. Steven L. Shafer, of Stanford University School of Medicine who spoke on computer-controlled intravenous anesthesia. He discussed techniques for maintaining a steady concentration of drug and the need to adjust infusions to achieve that goal. He also discussed the problems inherent in achieving that goal and the need to use the results of research to improve drug dosing. In particular he stressed that even existing technology, which cannot be easily adjusted for patient variation, is still good at maintaining a given concentration and for making proportional changes in serum concentration. Dr. Shafer closed by noting that the anticipated cost of incorporating controllers for drug infusion into our automatic infusers and pumps is small.

The audience received a booklet summarizing each of the presentations. A few copies of this booklet remain and can be obtained by writing to Dr. Grogono at Tulane University School of Medicine, Box SL4, 1430 Tulane Avenue, New Orleans, LA 70112. ◈

- A. Grogono

STA Dinner at the ASA

Every year, during the American Society of Anesthesiologists (ASA) meeting, STA sponsors a dinner that includes a topical lecture with a technological theme. This year's STA dinner was held on October 10 at the 701 Pennsylvania Restaurant, just blocks from the Capitol. More than 80 STA members, friends, spouses, and guests attended the dinner. The Society owes special thanks to corporate sponsors: BOC Healthcare, Hewlett–Packard, Marquette Electronics, Nellcor Inc., North American Dräger, and SpaceLabs Medical who helped to make the event possible. Following an excellent meal, the diners were entertained by the underwater anecdotes of retired Commander C. M. Wood, a former U.S. Navy nuclear submarine captain.

The restaurant was set aside for exclusive use of STA and the evening began with a cocktail hour, during which time guests mingled and enjoyed the pleasant, modern surroundings. Alan Grogono, Chairman of the ASA Education Committee, recognized the contributions of our corporate sponsors in a presentation following the meal. STA President Jerry Calkins then made a few remarks about the history of STA. Original and former STA officers and Board of Directors were then acknowledged and awarded certificates. Those receiving warm recognition from Jerry and the audience included Dwayne Westenskow (former BOD), Jim Philip (former BOD), Nik Gravenstein, Sr. (former BOD and currently President-elect), Frank Block (first STA Secretary), Alan Grogono (first Treasurer), and Allen Ream (first Vice President). Ty Smith, the Society's founding President, received an ovation as he accepted a certificate acknowledging all he has done for STA and the *Journal of Clinical Monitoring.*

Life of a Submariner

Alan Grogono introduced the evening's speaker, Commander C. M. Wood, USN (retired) and his topic, "Nuclear Submarines: Twenty-five Years and Beyond." Commander Wood graduated from the U. S. Naval Academy in 1965 and went on to serve on one diesel and seven nuclear submarines during his total of five years underwater. He spoke about life aboard a submarine, emphasizing the crew's lifestyle and the many problems that can occur during extended tours of duty. He showed slides of a 1979 mission of the USS Archerfish, during which Commander Wood and his crew traveled 14,000 miles to the North Pole.

Commander Wood discussed the problems associated with shift work (each 24-hour period was divided into six-hour shifts) and circadian rhythm disturbances. His slides demonstrated the close quarters in which the crew was constrained to work and recreate. Tension was released by movies, books, exercise equipment, and practical jokes. The vast majority of cases of psychological disturbance were related to alcohol or family problems. A Navy corpsman and the *Merck Manual* were the only medical experts available. Thus, seriously ill crewmen had to be evacuated by helicopter, which was potentially as dangerous as the illness itself!

Commander Wood described the technical difficulties associated with navigating solely by instruments under the ice. The treacherous and variable ice flows, combined with the limited field of view of the sonar devices make experience critical to insure safe passage. Maintaining stable buoyancy in the face of strong currents, changes in salinity, and temperature gradients is another technical challenge. Perhaps the most demanding maneuver however is surfacing through thin ice.

Monitoring the Atmosphere

Monitoring and regulation of the atmosphere within a submarine is a complex technical endeavor. The atmosphere is monitored continuously for oxygen, carbon dioxide, carbon monoxide, and hydrogen with an infrared device. Oxygen levels are difficult to regulate precisely. Carbon dioxide is scrubbed out of the atmosphere and pumped overboard, a process which is complicated by the extremely cold temperature of sea water in the arctic (28.6° F) which prevents carbon dioxide from dissolving in the water. The submarine must therefore surface intermittently to purge carbon dioxide to the outside atmosphere. Carbon monoxide and hydrogen are eliminated by oxidation using a heated catalyst bed. Interestingly, the refrigeration units must be closely monitored because of the danger associated with freon leaks which can be converted by the catalyst bed to phosgene and hydrofluoric acid.

Commander Wood answered many questions from the audience. One person inquired about the submarine crew's training in disaster response. Commander Wood stated that full-scale realistic simulators are used extensively during pre-mission shore training. He felt that simulator training on rare emergency events was critical to proper crew preparation but emphasized that emergency drills are performed on a daily basis during the mission. Each crew member belongs to a damage control crew with a well-defined and well-practiced function. Commander Wood stressed the importance of good crew communication to a successful outcome during critical incidents.

Next year's STA dinner will be held on the Sunday night of the ASA meeting in San Francisco. ◈

- M. Weinger

SIGnatures
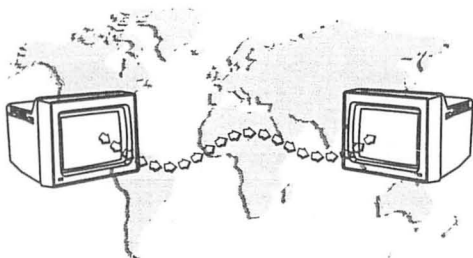
Frank E. Block, Jr., MD
Associate Professor of Anesthesiology
University of Arkansas for Medical Sciences

CompuServe and the Internet

CompuServe users can readily send messages to, and receive messages from the Internet by following a specified format. You are charged per character for these messages, and although it is not exorbitant, costs can add up especially if you participate in a listserver.

To send messages to the internet simply add the characters, >Internet:, to the internet address. For example, to send a message to the NYU listserver, you would address it as: >Internet: anesthesiology@anesthesiology. med.nyu.edu.

To receive messages from the Internet, your CompuServe address can be used but in a slightly altered format. My CompuServe address is 74426,3015. An Internet user can send a message to me by addressing it: 74426.3015@com puserve.com. Note that the comma was replaced with a period. If you send a message to someone on the Internet and they use a "reply" command, the appropriate formatting will be used.
　　　　　　　　　　— J. Feldman

Anesthesia in "Cyberspace"

During the last several months, there have been several new developments in electronic communications among anesthesiologists. This activity in so-called "cyberspace" has taken several forms. Not only has the CompuServe SIG remained active, but Internet activities have increased and the ASA has established a computer network.

MedSIG

The STA section on the CompuServe MedSIG remains alive and well. I am continuing to post the abstracts of upcoming articles in the *Journal of Clinical Monitoring* to give readers a "sneak preview" of articles that have been accepted for publication. Members are encouraged to download these abstracts. A few recent "threads" (sequences of messages) include: ASAnet, a bulletin board for anesthesiologists sponsored by the ASA and operated on the BRS-Colleague network; Computerized anesthesia records and the Computer-Based Patient Record Institute; Anesthetic and quality assurance databases; Use of head-up displays such as the "Private Eye" in the OR; Direct control of devices through thinking (advanced EEG processing); Non-invasive measurement of blood sugar; Perceived stagnation of design of anesthesia machines sold in the USA; Electromagnetic interference found in a certain brand of patient monitor; Motion-sensitivity of automatic defibrillators; Laryngeal masks and sore throats; Case of an epidural air bubble which may have caused spinal cord compromise; Are forum messages on an anesthetic complication "discoverable" in a medical malpractice case?; Heated humidifiers' effects on the speed of anesthetic induction and emergence; Anesthetic management for pediatric hand reconstruction; Combination of acupuncture and general anesthesia; and Total intravenous anesthesia.

Internet Listservers

The Internet is a global information network that was originally developed to facilitate communication amongst academicians but now encompasses a wide variety of commercial, academic and public users. The number of users of this network is increasing at more than 10% per month! Listservers are used on the Internet to facilitate conversations amongst individuals with a common interest. Any message sent to a listserver is automatically forwarded to all members of the listserver. To join a listserver, one need only send an electronic mail message to the listserver with a specially formatted request to join and information identifying yourself.

A warning to CompuServe subscribers: A listserver can generate large quantities of electronic mail. CompuServe charges per character for all incoming and outgoing messages from the Internet. Subscribing to a listserver, although informative, can be expensive.

Every listserver has two addresses: an "operations" address and the "send-to" address. The "operations" address is the E-mail address which is used to send commands to join the list, leave the list, obtain the names of subscribers to the list, etc. The "send-to" address is the address which echoes your message to everyone on the list. These different addresses have the potential for some confusion but once you get it straight, the system works well!

Two to Choose From

There are currently two active listservers dedicated to anesthesiology. Previous SIGnatures columns announced the Internet discussion list managed by Andrew Sopchak based in Buffalo, NY. You can join this list by sending an E-mail message to the operations address: listserv@ubvm.cc. buffalo.edu. The subject of your E-mail doesn't matter, but the first line of the

ESCTAIC Summary
continued from page 2

Along with this building project, a systematic re-evaluation of the old model of care is being performed. Dr. Zelcer described parts of the Clinical Information Systems project. They have found for example, that a routine X-ray examination requires 11 staff and consists of 71 different steps. Patient admission requires 10 staff and 71 steps, and the processing of a medical record consists of 114 different steps. This systematic analysis has lead to the conclusion that the application of modern information technology without re-designing the underlying hospital processes is meaningless. S . Konichezky presented process analysis methodology on a somewhat smaller scale in the form of a study of the information flow in anaesthesia. He found that the factors limiting the usefulness of any information system in the anaesthetic environment are inexplicit patient management strategies, poorly organized information and time-consuming information retrieval. One of the conclusions was that instead of creating automated anaesthesia record systems which imitate the current manual ones, more effort should be directed toward improving the processing and flow of information.

Read Codes, a project to create a comprehensive thesaurus of medical terms, was discussed by A.C. Norton from the U.K. and S. Armbruster from Germany. The anaesthesiology part of this project is almost complete. The pilot stage for the English terms is completed and the translation to German is almost finished. Dr. Armbruster described the problems in adjusting the British term structure to the German terminology. Despite these problems, the Read Code System has the potential to revolutionize the electronic storage of medical records including the translation of anaesthesia-related terms to other European languages. Dr. Armbruster also demonstrated a database of Rare Syndromes and Disorders with their anaesthetic implications. The beta version of this Windows-based software will soon be made available through the newly established ESCTAIC Public Domain Software library.

Another piece of interesting software was NADOS presented by A.

> ### "The application of modern information technology without re-designing the underlying hospital processes is meaningless."

Tecklenburg. This Windows-based program was developed as a complement to the standard record for preclinical emergency medicine introduced in 1991 by the German Society for Intensive Care and Emergency Medicine.

286 Systems??

Several presentations from Russia proved that the 286 AT type computer is not dead. S. Arseniev presented an AT 286 - based anaesthesia monitoring system which integrates data from five different monitors, groups them, presents physiological profiles and features intelligent alarms. This was accomplished by creating a proprietary object oriented operating system with DOS present as one of the objects. I. Sablin showed another anaesthesia monitoring and data management system which included the EEG spectral array among 11 different variables pre-

sented. A. Eremenko used the same hardware platform for a program designed to predict complications to thoracotomy. This Bayes' theorem based program analyzes 13 major risk factors and calculates the risk for the occurrence of pleural empyema. The staged probability determination allows for the early detection of potential primary causative factor(s) and the institution of appropriate prophylaxis.

The organizers of the meeting deserve praise for the scientific content and excellent organization of the meeting. No less important than learning and discussing was the opportunity to meet people, make friends and establish good and lasting contacts. A few participants even found time to enjoy the exciting recreational opportunities, river rafting, mountain-biking and golf, which were provided by the organizers.

- A. Dellermalm

Notes from Down Under

Incident Monitoring

Colleagues who are interested in studies on human error, critical incidents, and accident prevention in anesthesia should look to a recent edition of the journal, *Anaesthesia and Intensive Care* (Volume 21, Number 5, October 1993). This symposium issue is dedicated solely to the findings of the ongoing Australian Incident Monitoring Study (AIMS).

This study was initiated by the Australian Patient Safety Foundation (APSF) in 1987 as a multicenter effort to collect, analyze and report on critical incidents and their contributing human factors elements. The journal edition consists of 30 articles and a detailed editorial addressing the analysis of the first 2000 cases. The papers describe the contribution of equipment, procedures, knowledge and environment to the evolution of incidents and accidents in the data set.

This is a valuable, detailed and comprehensive exploration of many facets of patient safety that should be read by both qualified practitioners and trainees.

1996 Technology Symposium in Australia

The 8th International Symposium on Computing in Anesthesia and Intensive Care (ISCAIC) will be held in Melbourne, Australia on April 20-23, 1996. This will be an official satellite meeting to the World Congress of Anesthesiologists which will be held in Sydney during the preceding week.

The theme of the Symposium will be "Efficacy of Technology in the Workplace" and is intended to emphasize all aspects of computing and technology application. This includes work analysis, human performance and ergonomic research, technology design, performance evaluation, quality impact and cost effectiveness. There will be a strong emphasis on measures and performance data with contributions invited from clinicians, academics and industry. The meeting will be multi-disciplinary, and it is intended to publish the proceedings as a symposium issue of the journal, *Anaesthesia and Intensive Care.*

Preliminary information will be available at the STA meeting in January 1994 and distributed at that meeting and at major anesthesia and intensive care meetings throughout the year. The call for papers and comprehensive meeting details will be distributed in August 1995.

Melbourne is an elegant and sophisticated city situated in the southeast corner of the Australian continent. The early autumn weather of April is pleasantly temperate, and the city and environs offer a large variety of activities and excursions for delegates and their families. The meeting is timed to immediately follow the World Congress to give colleagues a chance to attend both meetings while still having time for some travel in Australia before returning home.

For further information please address inquiries to the Symposium Convenor: Dr. John ZELCER, Interim Fax: + 61 3 4176141. ◆

- J. Zelcer

Computer Record Guidelines Making Progress

David Edsall, MD
Chairperson, STA National Anesthesia Database Committee

October was a busy time for the STA National Anesthesia Database Committee. The committee met at the ASA meeting for two hours, focusing on the process for developing this database and finalizing a process of communication. The meeting was attended by 17 individuals including 10 clinicians, representatives from each of the vendors of CPRA technology and even a representative from a large database management company.

E-mail Makes it Possible

The committee decided to communicate by electronic mail using Compu-serve and the Internet. The text of the draft guidelines is available in Word for Windows format and the convention will be to use underline to indicate deletions italics for additions. Anyone interested in joining the committee can contact John Thompson at INTERNET:THOMPS@WORLD.STD.COM. Three months of activity on the committee are required before voting rights are granted. One vote per institution is allowed. We are in need of legal expertise as well as someone knowledgeable with the SNOMED, READ, or GABRIELLI code structures.

The second draft of the guideline is now 107 pages long and consists of eight sections with a third draft already in progress. The guideline has been organized into the following sections:
1. Scope of this Document
2. Referenced Documents
3. Terminology
4. Significance and Use of CPRA
5. File Structure of the CPRA
6. Anesthesia Data Base Elements (>215 defined)

> ■ *"The government wants to legislate aspects of the CPR but needs standards to support the legislation."*

7. Characteristics of the EAR documentation technology
8. Display features of the electronic anesthesia record (EAR)

Our goal is to have a final document by May 1994.

ASTM, AMIA and CPRI

Since this STA committee is an official taskforce of the ASTM Committee E-31.12 on Computer-Based Medical Records and is charged with developing the anesthesia portion of the electronic medical record, the activities were reviewed by ASTM in late October. The review was favorable, an important step since ASTM will ultimately be asked to sanction the guideline for incorporation into the standard for an electronic medical record. The American Medical Informatics Association (AMIA) workgroup on anesthesia and critical care gave support to our project and, based upon our progress, decided not to duplicate the effort by creating their own document on the anesthesia database.

The CPRI (Computer-based Patient Record Institute) quarterly meeting also took place in Washington in early November. CPRI has developed an award program for the best demonstration project that shows the economic or quality improvement value of a CPR. There is also progress on a white paper on universal coding systems and a white paper on drug coding is about to be published. Members of the workgroups have seen and are involved with these comprehensive and informative documents. Few anesthesiologists are involved however, and many issues that we would think obvious are overlooked. For example, discussions regarding electronic signatures do not account for the needs of the anesthesia environment where several personnel may attend to a patient at separate times and simultaneously for the same procedure.

The government, both on the legislative and administrative side, is very interested in promoting CPRs. There are at least two government reports on the potential economic and quality advantages of the CPR. Members of President Clinton's Health Care Task Force were present and explained parts of the President's proposed system. Computer standard universal claim forms are just the beginning of this process. The government wants to legislate aspects of the CPR but needs standards to support the legislation. ASTM and ANSI are trying to fill the gap. Through them we have the chance to write the government standards. Better us than them! ◈

Committee Reviews User Involvement in Product Development Cycle

Dan Pettus
Chairperson, STA Industrial Liaison Committee

The October meeting of the Industrial Liaison Committee focused on the value of increasing the relationships between manufacturers and users. The objective of the meeting was to make users more aware

■ *...clinicians expressed surprise at the...resources required ...to bring a new product to market.*

of how they can become involved in the product development process, and how their input can have a positive effect on product design and production.

A presentation was made by Tom Campbell, product manager for Arkive Information Systems reviewing Arkive's development process. Mr. Campbell reviewed the entire product development process, from product definition through functional design specification, development of a prototype, manufacturing, service and support. Mr. Campbell pointed out that clinician involvement has been most valuable in the beginning stages of the cycle, when the product's capabilities and basic technology are being defined.

Representatives from other manufacturers addressed the manufacturer's need to be careful about receiving too much input, especially when developing a product that the clinical environment has not seen before. In such a situation, clinical input is most useful for defining user friendliness and other issues where clinicians are expert, and avoiding areas where they will have

insufficient clinical experience with a technology that is simply too new to have a basis in practice. It was pointed out that when limited clinical expertise is available, a manufacturer often has to introduce a product to the market to demonstrate its value, and wait for clinician input as the product develops.

Arkive's Campbell also reviewed the effect of governmental regulations, including FDA, UL and others, on the requirements for good manufacturing practices (GMPs) in product development and production. These requirements control entry to the marketplace in an attempt to ensure that products are safe and serve a purpose. He reviewed the items that the FDA looks at to insure compliance with GMP standards. Several clinicians expressed surprise at the complexity and multiple steps involved in developing a software-based system, and the resources required, both time and money, to bring a new product to market.

The Industrial Liaison Committee's objectives will be supported at this year's STA Annual Meeting, where the theme is "Learning About Technology—Technology for Learning." The need for increased clinician involvement in the product development cycle has received an endorsement from STA's Board of Directors, and the committee has been urged to work with other STA

committees to make sure that these fundamental principles of clinician input during the development cycle are implemented. The Board also endorsed the manufacturer's role in educating the clinical environment on the basic concepts of new product ideas and in certification-level training and education on existing concepts such as EKG ST-Segment monitoring, anesthesia database analysis and other topics related to current clinical practice.

Look for a wide range of manufacturer-supported programs at this year's STA Annual Meeting, where a series of workshops and simulators will be available to support the theme of "Learning About Technology—Technology for Learning." ◆

SIGnatures

message must read JOIN ANEST-L, your first name, your last name and then you should receive all sorts of Internet messages. Recent topics have included: Announcements for meetings of the Canadian Pain Society, Children and Pain, the World Congress on Computational Medicine, and, of course, the upcoming STA meeting!; Announcements for medical informatics training programs at UNC/Duke, Harvard, Oregon, and Pittsburgh; Suggestion that the ASA should list members' electronic mail addresses (The Society for Education in Anesthesia and STA are already working to add E-mail addresses to their lists!); The ASAnet; Anesthesia simulation; Computerized systems for Quality Assurance; Standardized formats for electronic OB anesthesia records; The draft ASTM anesthesia database, being organized by Dr. David Edsall; Computerization of the ICU; Auditory evoked potentials; Waste gases in the OR; and News that the FDA has halted the marketing and sales of certain automated defibrillators for a year. To post a message on this listserver, the "send-to" address is: anest-l@ubvm.cc.buffalo.edu.

A second list-server, based at New York University, was announced by Keith Ruskin in a Letter to the Editor in the October 1993 issue of *Anesthesiology*. One may join the "NYU list" by sending an E-mail message to: listserv@mcan00.med.nyu.edu. The subject of your E-mail doesn't matter, but the first line of the message must read SUBSCRIBE ANESTHESIOLOGY. Recent topics of discussion on the NYU list have included: Data on the safety record of nurse anesthetists vs. anesthesiologists; Proposed publication of an electronic manual of anesthesia (like a "hospital procedure book" with suggested case management protocols); Computerized anesthesia references (such as the SNACC references); Computerized anesthesia recordkeeping and call scheduling; Sources of videotapes to teach fiberoptic intubation; Management of a child known to be susceptible to malignant hyperthermia who now presents with epiglottitis (a very lengthy thread!); Choice of anesthesia for outpatient surgery; Combined epidural-spinal anesthesia; and Cost-effectiveness of muscle relaxants and low gas flows.

To post a message on this listserver, the "send-to" address is: anesthesiology@anesthesiology.med.nyu.edu. Andrew Sopchak and Keith Ruskin have been in contact regarding combining the listservers given the similarity of information on these systems.

A recent discussion has also focused on the need for an anesthesia "gopher." Gophers are another Internet tool which will allow users to find files of interest to anesthesiologists on various computers throughout the Internet. As more information becomes available, it will appear in this column. In summary, the CompuServe MedSIG and the two Internet listservers contain many items of interest to anesthesiologists. Please feel free to join any one or all three of these! ◆

- J. Feldman

President's Message

I would also like to take this opportunity to highlight the efforts of some of the activities of our committees. The Committee for Equipment, Testing, Standards, and Specifications, chaired by Albert Perrino, MD, is considering addressing two topics for computers. One is to encourage the availability to interface protocols by addressing two topics of open architecture and interface protocols. This and many other activities are being handled by that Committee.

A second committee, the ASTM F-29 Anesthesia Workstation, is being chaired by Mark Poler, MD. At the recent Anesthesia Patient Safety Foundation meeting, the Executive Committee endorsed a proposal to have APSF join forces with STA in this endeavor. Hence, two members of the APSF's Committee for Technology have been added to the STA Committee. The interest and scope of this project has significantly increased.

I look forward to seeing everyone at the coming meeting in Orlando. ◆

STA Slate of Candidates

As noted on page one, STA elections are currently in progress. Listed below is the slate of candidates nominated by the Nominating Committee and ratified by the Board of Directors.

President-Elect

Robert T. Chilcoat, PhD

A member of the STA Board of Directors since the Society began, Dr. Chilcoat directs a research group at the BOC Group Technical Center. He has more than 20 years experience in anesthesia technology including completion of his PhD thesis work with Professor W.W. Mapleson at the University of Wales, Cardiff, U.K.

Dwayne R. Westenskow, PhD

Dr. Westenskow has also served in the past on the STA Board of Directors and currently heads the Committee on Research. He deserves credit for numerous innovations in anesthesia technology over the last 20 years and currently directs an active research program at the Department of Anesthesiology, University of Utah.

Member, Board of Directors

J. Sandy Eames

Mr. Eames is currently the Marketing Manager at Datascope Corporation and is closely involved with the definition, design and marketing of many of Datascope's patient monitors. He has made numerous stimulating and entertaining presentations at STA events and is currently active on both the Membership and Industrial Liaison Committees.

Dan Pettus

Mr. Pettus is currently the Director of Customer Education and Professional Services at Arkive Information Systems and has participated in the growth of that company since its inception. He chairs the STA Industrial Liaison Committee. ◆

STA Committee and Section Chairmen

The day prior to the start of the Annual Meeting, Wednesday, January 26, will be devoted to meetings of the Board of Directors and Committees. The committees that will be meeting are listed below.

All members are encouraged to participate in committee activities. If you cannot attend the Annual Meeting but would like to join a committee, please contact the chairperson. They will be pleased to have your help.

SECTION FOR EDUCATION
Jerry Calkins, PhD, MD, Chair

Committee for the Annual Meeting
J. S. (Nik) Gravenstein, MD

Education for Physicians
James H. Philip, ME(E), MD

Education for Non-Physicians
Wesley T. Frazier, MD

STA Activities at ASA
Alan W. Grogono, MD

SECTION FOR LIAISON
N. Ty Smith, MD, Chair

Anesthesia Workstation
S. Mark Poler, MD

Committee for Bylaws
Allen K. Ream, MS, MD

Anesthetic Database
David Edsall, MD

Committee for Fiscal Management
Jan Ehrenwerth, MD

Equipment, Testing, Standards and Specifications
Albert Perrino, MD

Committee for Membership and Promotion
Julian M. Goldman, MD

Industrial Liaison
Mr. Dan Pettus

Committee for Newsletter
Jeff Feldman, MD

Special Interest Groups
N. Ty Smith, MD

Committee for Research
Dwayne Westenskow, PhD

Committee for Archives
Frank E. Block, Jr., MD
Matt Weinger, MD

Society for Technology in Anesthesia

Membership Application

Please print or type.

Name_____ Degree(s)_____

Title/Position_____

Mailing Address_____

_____

City _____ State _____ Zip Code _____

Work Telephone   (_____)_____ FAX (_____)_____

E-Mail_____ Home Telephone (_____)_____

Occupation: ❏ Industry   ❏ Clinical Practice   ❏ Academic Practice

Affiliation_____

Special Interest _____

Membership Categories

	Dues
❏ Full regular member—domestic	$225 *
❏ Full regular member—foreign/Canadian	250 *
❏ Regular member	125 **
❏ Student/Resident member ◆	40 **
❏ ASATT member	40 **
❏ Corporate member	1,000 *
❏ Departmental member	250 *

◆Students/Residents must include a letter from their dean's office, program chairman, or residency director verifying their current status and their level of seniority.
* Includes subscription to the *Journal of Clinical Monitoring*
** Does not include subscription to the *Journal of Clinical Monitoring*

Payment Options

❏ Check (payable to STA)   ❏ VISA   ❏ MasterCard   Amount $_____

Credit Card Number_____ Exp. Date _____

Signature _____

Return completed application with payment to:

Society for Technology in Anesthesia
11512 Allecingie Parkway
Richmond, VA 23235
(804) 378-4959
(804) 379-1386

For STA Office Use Only:
Amount paid _____
Check # _____
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To keep the newsletter intact, photocopies of this application are accepted.