History of Sonographers in the United States of America

Historical Perspective

Diagnostic ultrasound is a very new modality when considering it is part of the complex field of medicine. Early pioneers used ultrasound diagnosis on various areas of the body. In 1942, Dr. Karl Dussik and his brother used ultrasound to study sound attenuation in brain tissue, with the intent of mapping the brain to identify brain tumors. In the United States, between 1947 and 1949, Dr. George Ludwig studied the use of ultrasound for the detection of gallstones.

"Dr. John Wild was particularly interested in equipment development to image the bowel, breast, and detection of malignancy. With the help of Jack Reid he built a B-mode contact scanner in 1951. Wild produced the earliest handheld contact scanner for clinical use. The images produced by this instrument were made in 'real time.' Wild's most significant insight was the recognition that malignant tissue might be distinguished from nonmalignant tissue. . . .

"In 1956, Dr. Ian Donald began work at the University of Glasgow in Scotland. He had become interested in ultrasound two years earlier while in London. However, upon arriving in Glasgow he was unable to apply ultrasound in his field of obstetrics and gynecology because of fear by grant-giving institutions that ultrasound might have toxic effects on the fetus and mother"(from *Medical Diagnostic Ultrasound: A Retrospective of its 40th Anniversary,* Rochester, NY: Eastman Kodak Company, 1988). Donald performed the first fetal head measurements and related them to age and weight.

Donald also was the first to report ultrasonic evidence of a gestational sac, and he used ultrasound to study ovarian cysts, polyhydramnios, and molar pregnancy.

Meanwhile, in Sweden, Dr. Edler was involved in the study of the valve motion and contractility of the heart. The detection of blood flow using continuous wave (CW) Doppler techniques began with Shiego Satamura in 1956 and evolved to the point of physiologic and clinical applications by Dean Franklin in 1959 and Donald W. Baker in 1963 and 1964. This research was performed in the Department of Physiol-

ogy and later in the Center for Bioengineering at the University of Washington. Pulsed Doppler blood flow detection and imaging developments began in 1967. Its use evolved over many decades into multiple applications throughout the cardiovascular system, ranging from the fetus to the elderly patient. Among the many early clinical collaborators was Eugene Strandness, M.D., in the Department of Vascular Surgery. Finally, Howry and Holmes and the Dussik brothers, working with the brain, led many neurologists to enter the burgeoning field of diagnostic ultrasound. Approximately 60% of all articles published before 1970 related to ultrasound applications in either neurology or ophthalmology. Although this list is incomplete, it still serves as a reminder that most of the essential concepts underlying modern diagnostic ultrasound already had been demonstrated by 1963!

Development of Ultrasound Technical Specialists

In 1969, many of those working with ultrasound believed it was premature to consider the organization of technical, nonphysician personnel. Nevertheless, it is obvious that the "sonic boom" that hit the field of ultrasound in the 1970s could not have been fully realized without technical personnel performing the clinical studies. Lack of manpower was the primary concern of the many newly formed ultrasound companies that were barely succeeding in a fiercely competitive market.

In the early years, the sonographer was known as an ultrasound technical specialist. There was only one professional organization devoted to ultrasound—the American Institute of Ultrasound in Medicine (AIUM). In 1969, six technical specialists (Joan Baker, Marilyn Ball, Margaret Byrne, James Dennon, Raylene Husak, and L. E. Schnitzer) wrote a proposal for the formation of a professional society. The proposal was taken by Joan Baker and L. E. Schnitzer to the AIUM Board of Governors' meeting. This act resulted in the formation of a Society for those individuals exclusively performing ultrasound procedures.

Although the Board members of the AIUM did not oppose their request to establish a technical Society, most board members believed that they were wasting their time; this activity was premature. Many AIUM Board members were physiatrists who used therapeutic rather than diagnostic ultrasound. Some were not convinced that ultrasound was "here to stay." Dr. Denis White, President of the AIUM, was concerned that a technical society could grow in numbers and become larger than the physician society. Nevertheless, in the absence of majority opposition, the new group received permission to proceed. In Win-

nipeg, Manitoba, at the 1969 AIUM Annual Convention, the new society was formed.

The following year, the constitution and bylaws were written by L. E. Schnitzer and prepared for presentation to the technical specialists who were expected to attend the 1970 AIUM convention in Cleveland. With the help of ultrasound commercial salespeople, an attempt was made to contact all technical personnel performing sonographic procedures to promote the new society.

The selection of a name for this society was the subject of great debate. The terms "technologist" or "technician" were considered poor choices, since these terms already were the source of serious controversy within the field of radiology. Since the term was already being used, Schnitzer used the term technical specialist in the draft document of the constitution merely as a point from which to start discussion regarding the name. This name was adopted, and the society officially became known as the American Society of Ultrasound Technical Specialists (ASUTS).

1970 to 1972

Joan Baker

The Fifth Annual Convention of the AIUM was held in Cleveland, October 12 to 15, 1970. On October 12th, the ASUTS made its debut. Of the 187 registrants and 12 exhibitors at the meeting, only 13 were technical specialists. Through the tedious process of line-by-line voting, these 13 individuals approved the constitution and bylaws, which called for a Board of Directors comprised of 11 members, each serving 2-year terms. All board members were required to be active members of the Society and employed in the field of ultrasound technology. The North

1970

"Bridge Over Troubled Water" wins the Grammy Award for Album of the Year.
The American Society of Ultrasound Technical Specialists (ASUTS) is founded at the AIUM Annual Meeting in Cleveland, Ohio.
Floppy disks for computer data storage are introduced.

American continent (including Canada) was divided into six geographic regions, each to be represented by an elected Regional Director who also would serve a 2-year term. In accordance with the constitution and bylaws, the officers were elected. Joan Baker became the ASUTS's first President and L. E. Schnitzer its President-Elect.

The Articles of Incorporation and application for tax exempt status were filed with the Internal Revenue Service without the assistance of legal counsel because of lack of funding. Joan Baker ignored the possibility of failure and accomplished this feat in the state of Washington where it remains in place today. The ASUTS tax status became the subject of an Internal Revenue Service teaching session by serving as an example of how an organization or individual could file complex paperwork without the aid of legal assistance. Unfortunately, it also was the reason that the ASUTS was denied 501(c)3 status, the IRS classification for charitable organizations. The IRS students believed that because one of the stated aims and purposes of the ASUTS was to improve the "socio-economic position" of its members, the Society was ineligible to receive the coveted 501(c)3 status and should be classified as a 501(c)6 organization. Such an IRS status separates nonprofit organizations by those who can or cannot confer tax-deductible status for donations.

One of the major issues confronting the Society in its early years was that of identity and visibility. The Society's existence needed to be conveyed to the ultrasound community. The other primary issue was its financial situation. The Society accepted no money from any organization to get started; it was strictly a volunteer organization. The dues of

1971

ASUTS conducts their first series of lectures at the AIUM Annual Meeting.

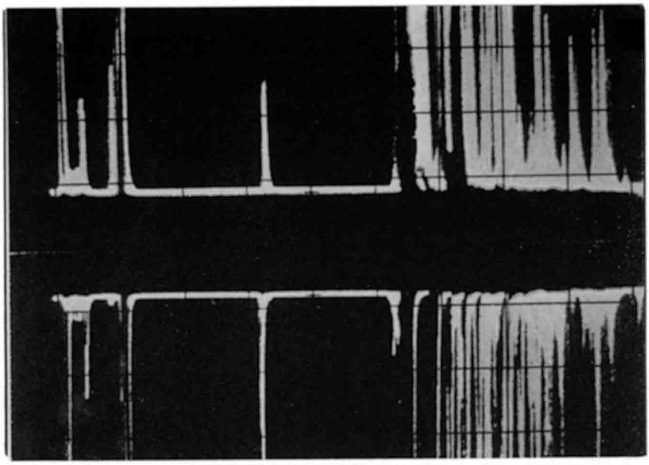
$20.00 for members and $5.00 for students, which included a subscription to the AIUM *Journal of Clinical Ultrasound,* did not generate sufficient revenue to cover all expenses of maintaining the new organization.

The founding of the ASUTS occurred very early in the development of the clinical acceptance of diagnostic ultrasound. The period before 1970 was one of research rather than delivery of health care for the new modality. These early days were very exciting, with both physicians and technical specialists trying to envision how the new modality would develop, and who was going to be responsible for making it possible for the field to grow. An AIUM Quarterly Newsletter dated June 12, 1970, contained a few paragraphs of interest regarding the education of technical personnel. The AIUM had an easier time addressing technical education than physician education: "Devising an effective program for educating and training ultrasonic technicians. . . . In setting up training programs for technicians in ultrasound, a number of approaches have been suggested. In addition to an apprentice-type training in a good diagnostic ultrasonic laboratory, most of the proposed programs seem to be related to training programs set up for x-ray technicians. One approach suggested has been that the individual complete an approved training program as an x-ray technician and then take an additional year of special training in ultrasound at any approved institution.

"The second approach has been to incorporate ultrasonic technicians into the training program designed for diagnostic x-ray technicians, nuclear medicine technicians, and x-ray therapy technicians. In this type of program, the first year or so would be basic courses for all groups. The second year each group would receive specialized training in his specialized area with some degree of overlap so that each is acquainted with the problems of the other group. Both of these programs would probably be integrated into a community college and an associate degree program. Any other suggestions as to proposed training programs would be greatly appreciated. . . ."

1972

The Godfather ***wins the Oscar Award for Best Picture.***
Watergate is everyone's topic of conversation.
Compact disc is invented by RCA.
Mark Spitz wins an unprecedented seven Olympic gold medals.
ASUTS holds its First Annual Meeting in Philadelphia.



A-mode presentation shows a biparietal diameter of 94 mm, 39 weeks gestation. 1971.

Dr. Ian Donald, a pioneer in obstetric ultrasound, was asked to write some comments for this same newsletter. In a statement of his impression about where ultrasound was at the time, he wrote:

". . . Sonar has so far proved very useful in obstetric and gynecologic diagnosis and has become a standard technique in the Gynecological Department at the Western Infirmary and at the Queen Mother's Hospital in Glasgow, Scotland. Various tumors of the pelvic viscera and often the spleen, liver, and kidneys give characteristic pictures according to their gross macroscopic appearances. The appearance of ascites, especially if malignant, are characteristic. Doubts about the cause of bleeding in early pregnancy can be quickly resolved by observing the interuterine growth of the gestation sac which is very rapid and obvious when viewed through a full bladder before the uterus is sufficiently enlarged to be palpable abdominally. Growth rates can be studied both in early and in late pregnancy, the latter by serial measurement of the biparietal diameter which is more related to maturity than to fetal weight. The phenomenon of blighted ovum is also worth studying. Much unnecessary curettage following abortion can be obviated by indicating an empty uterus. In the diagnosis of hydatidiform mole the method is now traditional. Further uses include a simple and direct method of localizing the placenta in cases of antepartum hemorrhage, unstable lie and before amniocentesis. The diagnosis of multiple pregnancy can be made between the 8th and 10th week of amenorrhoea by counting the number of sacs and after the 14th week by counting the number of fetal heads. . . . The Doppler effect provides a very ready

method of observing the fetal heart from the 11th week of amenorrhoea onwards. . . ."

The explosive growth of the profession and equipment sales created a tremendous shortage of trained technical specialists. Commercial ultrasound companies were in danger of going out of business because of the lack of trained personnel to operate their machines. The companies quickly hired the best technical specialists as field application specialists to teach any personnel their client hospitals designated. Often this educational service provided by the commercial manufacturers made the sale possible. Although the commercial companies did not want to be in the education business, their survival depended on it. While this was an unavoidable situation, it was immediately obvious that the Society must appoint an Education Committee to provide guidelines and requirements for training and to establish and accredit ultrasound schools.

The need to educate and elevate the level of competency of its members was discussed as early as 1969 by those who initiated the Society. The Society needed to establish a credentialing method, thus an Examination Committee was formed that in 1975 became the American Registry of Diagnostic Medical Sonographers (ARDMS). The work of these two key committees would become the centerpiece of Baker's activities for many years.

Education

Coincidentally, at this time, the AIUM also was addressing the need for physician education. The AIUM Education Committee was chaired by Dr. Ross Brown, who also served as advisor to the ASUTS. The Physician Committee eventually proposed a basic education syllabus as a starting point. Although not adopted by the AIUM, the ASUTS Education Committee adopted this syllabus, which became an integral part of the application to the American Medical Association's Manpower division for the creation of the occupation.

Dr. Ross Brown during one of his lighter moments.

Along with the shortage of personnel, another serious emerging problem was that of turf battles. Who should perform ultrasound procedures? Who should or should not interpret them? Where should a department of ultrasound be located within a hospital setting? The physicians who had pioneered this field came from many diverse backgrounds and specialties. In a very short time, some hospitals had many different ultrasound departments under one roof. Others formed "imaging departments" employing technical specialists who worked for physicians from many branches of medicine (e.g., cardiology, neurology, radiology, obstetrics, nuclear medicine, and internal medicine).

The technical specialists came from equally varied backgrounds. Many were from allied health fields such as radiology, nursing, or nuclear medicine; some had bachelor degrees in unrelated fields; some were secretaries or file room personnel. Once these individuals joined the ultrasound field, they tended to ignore their prior background and banded together to improve their knowledge and expertise in this exciting new field of ultrasound. The diversity of the ASUTS members was to play an important role in the decisions that the Society made when faced with issues that might favor one profession over another. The ASUTS was determined to protect the interests of all of its members regardless of their previous backgrounds and irrespective of any majority of members with similar backgrounds.

In 1971, the AIUM Annual Convention was held in Denver, and chaired by Dr. Horace Thompson, an obstetrician and gynecologist and a pioneer in ultrasound. The AIUM announced a plan to discontinue offering educational seminars or lectures at their annual meetings so to devote more time to scientific presentations. Dr. Thompson informed Baker of this decision, but expressed a willingness to work with the technical specialists to create time for educational lectures if the Society believed such a need existed. This momentous decision allowed the technical specialists to demonstrate their ability to lecture and teach. Baker selected a group of technical specialists to present educational seminars in each specialty area. Although a total of only 33 technical specialists were registered at the meeting, the room was filled with physicians to whom education was still very important.

This successful attempt by technical specialists to educate both physicians and their peers logically led to the establishment of an ASUTS meeting the following year. The AIUM and ASUTS entered into a joint venture in which the ASUTS meeting preceded the AIUM meeting. An ASUTS scientific session was provided in addition to the popular basic

education portion of the meeting. The AIUM meeting followed with its advanced education and scientific sessions, and technical specialists and physicians were permitted to attend both meetings.

1972 to 1974

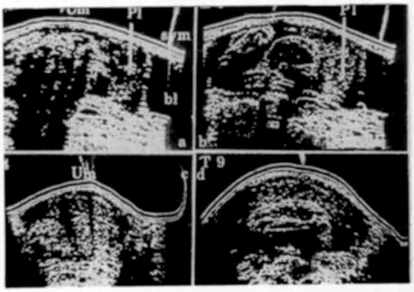
Pat Nuss

The 1st ASUTS Annual Meeting was held in Philadelphia in 1972, in conjunction with the 16th Annual Meeting of the AIUM. The meeting was organized by one of the founders, Jim Dennon. Dennon did an excellent job of setting the stage for the format of annual ASUTS meetings, including a Manufacturer's Commendation Award presented for the best paper.

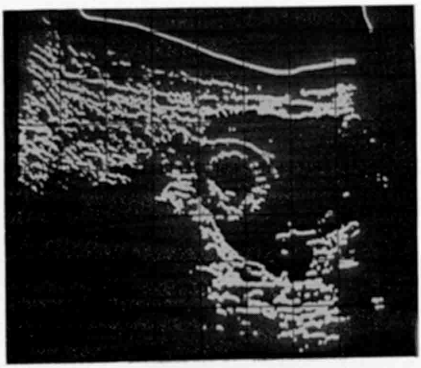
At this 1st ASUTS Annual Meeting, L. E. Schnitzer was elected President of the Society. However, in March 1972, Schnitzer became Director of Education for a commercial company and had to resign because the Constitution and Bylaws prohibited a commercial technical specialist from holding office. Shael Harris, the current Vice-President, assumed the office of President at the Philadelphia meeting, and a new Vice-President, Pat Nuss, was elected.

Within 2 months of taking office, Harris also was hired into the commercial field, and Vice-President Pat Nuss assumed the office of President. Nuss was involved in guiding the Examination Committee and preparing for its transition to the ARDMS and for its role in administering the first registry examinations in 1975. The examinations were first held during the annual meeting in Winston-Salem, where Nuss lived and worked. Society membership continued to match the exploding growth of the profession.

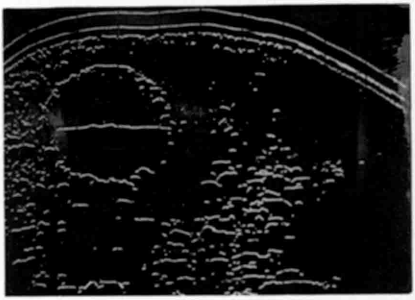
Turf battles continued, making the job of President a difficult one, especially since the Society had to gain the agreement of seven separate collaborating organizations to establish accreditation of training programs. These same organizations were involved in the turf battles, and they were in no mood to cooperate with one another.



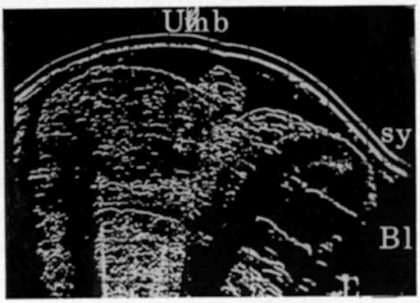
Placenta Previa. 1972.



Bi-stable scan shows early gestational sac (early 1970s).



B-mode presentation of fetal skull measuring 60 mm in diameter, 25 weeks gestation (early 1970s).



Longitudinal scan shows fetus in vertex presentation (early 1970s).

Equipment

Early ultrasound equipment (1970 to 1972) consisted of bi-stable articulated-arm contact scanners that produced images on long-persistence oscilloscopes. At the completion of a single scan, each image was recorded by Polaroid photography. Time-motion or "sweep mode" scanning, introduced in the mid-1960s, was the method used to obtain diagnostic images of the heart. Early echocardiograms required the use of an open-shutter camera technique, which allowed only 2.5 seconds per scan. The Picker Corporation (formerly Physionics) was the major manufacturer of early B-scan equipment. Hewlett-Packard and Smith, Kline and French were popular cardiology companies identified with A-mode and TM-mode instruments. Litton Medical Systems introduced its bi-stable scanner in the early 1970s. A new entrant to the ultrasound manufacturing ranks was the Unirad Corporation (which first saw light in

developer Ray Elliot's garage). In 1970, Picker, Rohe Corporation, Unirad Corporation, Kretz, and Searle companies quickly gained recognition as major ultrasound suppliers.

Creation of the Occupation

It was imperative that the Society be successful in creating a new and separate occupation. If the field of diagnostic ultrasound had been aligned with any other occupation, students would probably have had to study in a different field before gaining access to ultrasound education.

Establishing a new occupation was not easy. The American Medical Association's (AMA's) Manpower Division was about to disband, and the procedures for creating a new occupation were about to change. The Manpower Division did not want to be involved with a new occupation at this time. In fact, the United States Office of Education (USOE) had released a statement that they wished to discourage the proliferation of allied health occupations and would rather see new occupations incorporated under existing ones. Baker was concerned about this news about the Manpower Division and feared that the occupation would be unable to become officially established. She sought the assistance of the current President of the AIUM, Dr. Gil Baum, who came to the rescue of ASUTS by successfully pressuring the Manpower Division to respond to the ASUTS request. The occupation of Diagnostic Ultrasound Technology was created in 1973. The field of ultrasound technology owes a lot to Dr. Baum for his timely influence.

The next step in the process was to work with the AMA's Department of Allied Health to compose a Document of Essentials and gain the approval of all the collaborating organizations. This task proved to be quite difficult. The escalating turf battles were now being waged worldwide, making agreement difficult. Joan Baker, Jackie Ellis, and Betty Phillips left the October 1973 ASUTS meeting for a Chicago meeting with Dr. Ralph Kuhli, Director of Allied Medical Professions and Services, and Mssrs. Griffin and Naughton, members of Allied Medical Emerging Health Manpower of the American Medical Association. Baker, Ellis, and Phillips presented the aims of ASUTS and discussed in detail the manner in which to proceed with accreditation. The outcome of this meeting required the ASUTS to do the following:

- Provide a job description outlining the responsibilities of Ultrasound Technical Specialists;

- Provide details concerning the Examination Committee, existing training schools, Education Committee, syllabus, constitution, and bylaws;
- Describe training programs for accreditation;
- Detail the need for the profession;
- Approximate the number of Technical Specialists currently employed;
- Determine the projected number of Technical Specialists needed over the next 10 years;
- Provide an explanation for the sudden increase in the number of professionals entering the field;
- Contact physician subspecialty groups/organizations (i.e, American College of Obstetrics and Gynecology, American College of Radiology, and so forth), and inform them of the intentions of the ASUTS;
- Develop both written and practical examinations.

No grandfather clause was allowed. Members of the ASUTS on or before midnight, October 6, 1974, would not be required to take the written examination but would be required to take a proficiency test such as a practical examination.

The AMA had recently defined "grandfather clause" to mean that all those in a field regardless of training were eligible to take an examination and become registered. The ASUTS had hoped that all those who were members would automatically be "grandfathered" (registered). This request was not acceptable.

(The above is quoted from the document communicated to ASUTS by the Allied Medical Emerging Health Manpower Division of AMA.)

Development of Essentials for Program Accreditation

After the occupation was officially recognized by the Allied Medical Emerging Health Manpower Division, the next task was to develop requirements for establishing formally recognized education programs. This task was assumed by the Department of Allied Medical Professions and Services (which later became known as The Committee on Allied Health Education and Accreditation [CAHEA]), which worked with the ASUTS from 1974 to 1979 to develop the "Essentials of an Accredited Educational Program for the Diagnostic Medical Sonographer." The term *sonographer* came to be used because Baker was aware that Technical Specialist was not being well received by the community.

Because she came from England, where the term *radiographer* was used to describe x-ray technicians, it seemed logical to use the term sonographer for those making a graph with sound.

Because of the multidisciplinary nature of diagnostic ultrasound, many interested medical and allied health organizations also collaborated in drafting the Essentials, which were formally adopted by the following organizations:

- American College of Cardiology
- American College of Radiology
- American Institute of Ultrasound in Medicine
- American Medical Association
- American Society of Echocardiography
- American Society of Radiologic Technologists
- Society of Diagnostic Medical Sonographers*
- Society of Nuclear Medicine (withdrew as a sponsoring organization in 1981)

*(The first official documents of the JRCDMS were used after the Society changed its name, which is why the SDMS is listed as a collaborating organization instead of the ASUTS).

The sheer number of organizations involved and the ongoing turf battles explain the fact that it took 5 years to reach agreement. The Document of Essentials was finally adopted by the collaborating organizations named above, permitting formation of a Joint Review Committee on Education in Diagnostic Medical Sonography (JRCDMS). Dr. Marc Lapayowker was elected as its first chairman, and he provided the JRCDMS with the quality of leadership needed to move quickly and productively. It soon became apparent that the JRCDMS required a part-time Executive Director and an office from which to conduct its business. The Joint Review Committee on Education in Radiologic

1973

United States Supreme Court rules in favor of abortion in Roe vs. Wade.
CAT or CT scan is invented by Hounsfield.
Vietnam Peace Pacts are signed.
OPEC oil embargo begins.
Occupation of Diagnostic Ultrasound Technology is created by the AMA's Manpower Division.

1974

President Nixon resigns.
Sears Tower in Chicago becomes the world's tallest building.
"Grandfather clause" is adopted by the ARDMS.

Technology (JRCERT) made an offer that the JRCDMS would have been unwise not to accept. The JRCERT offered shared space and secretarial support as well as the services of the best Executive Director the JRCDMS could have recruited: Marilyn Fay. She came with years of accreditation experience, enabling the JRCDMS to go from start-up to accrediting schools in a minimal amount of time. The first accreditation of educational programs occurred in January 1982. Over a period of 10 years, the JRCDMS accredited 56 schools: 37 in academic institutions, 18 in hospitals, and one proprietary school.

1974 to 1976

Shirley Staiano

President-Elect Shirley Staiano assumed the Presidency at the close of the ASUTS's Annual Meeting in 1974. Staiano inherited the ongoing struggle for the recognition of technical specialists as paramedical personnel rather than as retrained x-ray or EKG technicians. She presented an aggressive and uncompromising position on this issue and also that of the accreditation of educational programs at the numerous Document of Essentials meetings. To lend some force to these meetings, Staiano, as President of ASUTS, as well as Baker, who had been involved since the conception of the occupation, both attended.

The need to stabilize finances and establish a central place for members to communicate was becoming a priority to the Society. A central office was necessary to improve communication to its members. The announced interpretation of the "grandfather clause" for the registry (individuals who were members of ASUTS on or before midnight October 6, 1974), created a mass influx of new

members. However, there were not enough funds to regularly communicate with the rapidly increasing membership.

Development of the journal, Medical Ultrasound

Staiano also inherited a problem faced by all of the previous Presidents: recognition of the technical specialist. An original misconception concerning diagnostic ultrasound was that only physicians had the knowledge to perform ultrasound examinations. From the beginning, however, technical specialists had not only been performing the scanning procedures, they were doing the research as well. The technical specialists began to demand credit for their work. Articles published at the time rarely included the name of the technical specialists as coauthors or even mentioned them in acknowledgments. When a technical specialist actually wrote a paper, they were usually listed as second or third author. The ASUTS established the journal, *Medical Ultrasound,* in 1976 as their official journal, putting an end to the need to find a physician to be named as first author.

In the groundbreaking first issue of *Medical Ultrasound* (August 1976), Sonia Chang wrote the lead article "The Representative Septum." Abstracts also were provided by Sandra Hagen-Ansert on the pancreas; by Brenda Manich on the thyroid; by Martin Resnick, MD, and James Willard on gray scale of the prostate; and by Michael Tenner,

MD, Georgina Wodraska, and Larry Waldroup on characterization of neoplasms in the brain. Marveen Craig wrote a review article about the placenta, and Gene Charney wrote an article entitled, "Improving Your Echocardiogram."

Problems with Short-Term Training

At the same time, demand for new technical specialists was escalating to meet the needs of this rapidly growing field. Many physicians wanted "cheap, readily available" help, who became known as the "overnight wonders." These technical specialists would attend 1 or 2-day courses (usually conducted by the commercial companies) and emerge as trained and ready to be hired! Realizing that this practice could only lower the quality of diagnostic examination results and limit the growth and credibility of this valuable tool, the ASUTS assumed responsibility for protecting the high standards of education required to produce competent practitioners and pushed even harder to establish educational programs. It was an uphill struggle against pressure from both physicians and commercial manufacturers who sought a quick fix to the personnel shortage.

Left to right, Marcus Owens (Children's Hospital, Oklahoma), Linda Gordon, Linda's son, Josh, and Mike Malone (University of Oklahoma).

Who Are We? What Does It Mean?

Staiano was adamant about the use of appropriate terminology when referring to technical specialists. She strongly opposed references such as tech, technician, or technologist. This was more than a simple seman-

1975

Patty Hearst is arrested by the FBI.
JVC and Matsashita invent the VHS system for video recorders
Vietnam War ends.

tic argument, as the AMA and other governing bodies defined a technician as someone with 6 weeks to 6 months of education beyond high school. Because the occupation was so new, Baker, Nuss, and Staiano were determined to establish higher standards than those of most other allied health professions. As they discussed the mutual difficulty they were experiencing in establishing the term *technical specialist,* they agreed that the lack of success stemmed from an inability to prevent the use of the terms technician and technologist. Because the Registry was still in an embryologic stage, they seized the opportunity to adopt a new title. As a result of this, the Registry became the American Registry of Diagnostic Medical Sonographers (ARDMS). This action sent another message to the AMA—that we were indeed what we claimed and that we were serious about setting and maintaining high educational standards.

At the 1975 AIUM/ASUTS Annual Meeting, Dr. William McKinney went to the podium to thank the ASUTS for its contributions to the meeting and to congratulate the Society on its growth. Without intending any insult he talked about the "ASS-UTS!" Baker, Nuss, and Staiano were speechless! The name had to be changed, Nuss remarked privately. Various ideas were suggested by these three. The first name that came to mind was Medical Diagnostic Sonographer. At first this seemed a good one until it became evident that the society would be called The American Society of Medical Diagnostic Sonographers, which would result in the acronym ASMDS and might just get renamed ASS-MD'S. The Society delayed changing its name, however, to leave

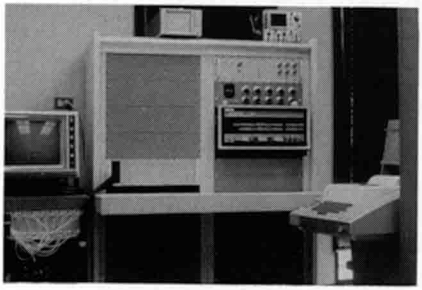
1976

The United States celebrates its bicentennial.
Viking II sets down on Mars.
First issue of the* Journal of Medical Ultrasound *is published.
Jimmy Carter is elected President of the United States.

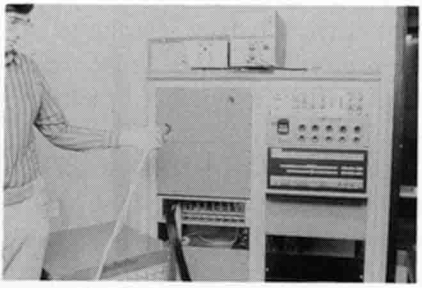
the door open for therapists using ultrasound to join the membership. Therapeutic ultrasound had existed long before diagnostic ultrasound. (The AIUM actually evolved from a therapeutic ultrasound society that had existed for 13 years before the diagnostic interests joined.) It would not be until 1980 that the name change would occur.

Changes in Ultrasound Equipment

Equipment changes began to appear as a result of engineering breakthroughs. Ultrasound equipment changed the field dramatically with images in "leading edge" technology replacing the bi-stable images. Although the articulated-arm, contact bi-stable scanning was still the most popular equipment in use, newer equipment with digital scan converters

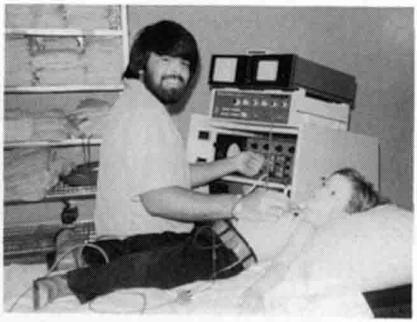


Duke University phased array machine, 1974.



First phased array machine, 1974.

Phased array machine with index M-mode, 1976.



Elias Rodriguez, Oklahoma University, School of Ultrasound student (standing), and Josh Gordon, 1977. Photo courtesy of Linda Gordon.

called "gray scale" was being installed in many of the leading clinical laboratories. In most echo labs, M-mode echocardiography was recorded with a strip chart recorder whose hard copy output appeared on a "pink-tinged" paper that developed slowly under fluorescent room light. Most echocardiography laboratories sported voluminous sheets of pink paper hanging from intravenous poles by the end of the day!

Educational Developments

Many of the real contributions to clinical criteria, as well as to education, were made by technical specialists and echocardiographers, who never received credit for their work because of the practice of physicians' names appearing exclusively on papers and in textbooks. Nevertheless, it was technical specialists who first noticed such things as increased sound transmission through fluid structures and who performed follow-up studies of babies whose fetal echoes had appeared interesting or abnormal. Slowly the ultrasound environment began to develop from the practice of the physician delegating work and the sonographer performing it to a truly "team" approach. In fairness, it must be noted that many of the original pioneers readily recognized their technical coworkers. But with the "sonic boom" in full swing, growing numbers of new physicians were embracing the field and looking to make a place for themselves with little regard for the technical personnel who had taught them. In this era, very few physicians could actually perform sonographic examinations themselves.

Staiano's personal goal as President was to establish an Executive Office with a paid, professional staff. She realized that this was essential if the Society was to grow and deliver the services that the membership needed and expected. Staiano was prevented from realizing this goal because of difficulties in establishing and maintaining communications, which in turn created confusion regarding available funds. Despite growing membership numbers, the financial situation did not seem to improve, which raised many questions. Staiano did the next best thing, by continuing to use the Executive Office of the AIUM, hoping that in the not-too-distant future, her successors would be able to establish an independent Executive Office. The ASUTS also hired Tyra Kite as Executive Secretary for the Executive Office in Oklahoma, whose services were shared part-time with the AIUM.

1976 to 1978

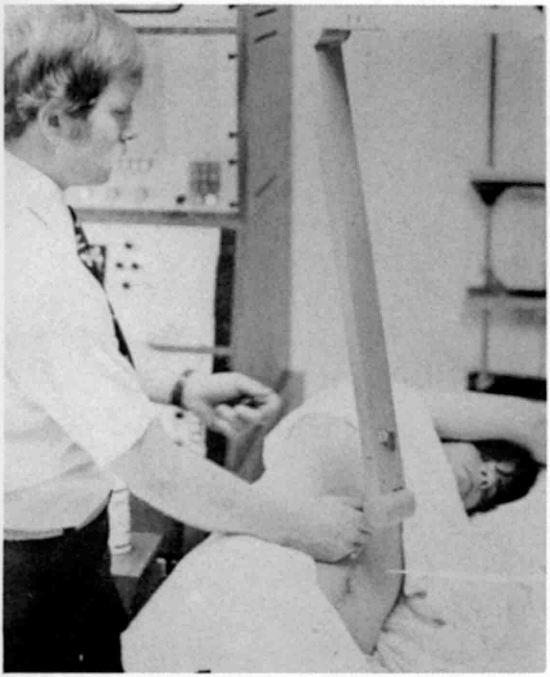
Marveen Craig

The ASUTS Annual Meeting in 1976 was held in San Francisco, where Marveen Craig assumed the helm as President of ASUTS. Just as Staiano had, Craig inherited a very difficult financial situation. The ASUTS had grown, and dues simply did not cover the costs of the new journal, newsletters, and postage. It was always expected that annual meeting revenues would provide whatever extra money was required to meet the growing expenses and needs. However, the AIUM's formula for dividing the proceeds did not generate the income needed. Craig was determined to meet the financial obligations of the ASUTS even if it meant accomplishing fewer of her personal goals during her term.

One of the biggest financial obligations was funding activities related to the Document of Essentials. This activity dragged on for a long time and required many unanticipated meetings of the collaborating organizations. The expenses for travel to these Chicago-based meetings were a major drain on the treasury. (It is not widely known that during these difficult times, some officers personally donated money to the ASUTS treasury to keep the Society afloat.)

The turf battles were still being fought, particularly between the American College of Radiology and the American College of Cardiology. Some of their tactics involved using the Document of Essentials. Radiology wanted everyone involved with ultrasound to become "generalists" and not permit specialization in any single clinical area. Cardiology refused to accept this concept and wanted cardiac specialization. At the time, no allied health personnel affiliated with the cardiology profession were recognized by the AMA. Cardiovascular technologists were usually x-ray technologists first; then they were trained on-the-job in the catheter laboratory to perform other related procedures such as echocardiography. ECG or EKG technicians also were trained on-the-job in hospitals; some were ward clerks and some were medical assistants. This lack of experience and formal training of their allied health personnel created difficulty for cardiology.

The American Society of Radiologic Technologists (ASRT) was a very independent group that did not necessarily conform to the dictates of the American College of Radiology. They sought to control the ul-



Scanning technique in the decubitus position, 1976. Performed by Stephen McLaughlin.

trasound profession, seeing it as an opportunity to increase their membership, disregarding the fact that a new occupation had been created in 1973. The ASRT believed that they should represent this new occupation since most technical specialists had been x-ray technologists before entering the field of ultrasound. However, neither Craig, Staiano, nor Nuss were x-ray technologists. From a survey of the membership, individuals were from such diverse backgrounds that no one had any interest in such an affiliation.

The second year of Craig's term was very productive. The austerity program had worked, and the financial situation was turned around, from an inherited $12,000 bank account and $18,000 in debts to debt-free status and $60,000 in reserves. Achieving a financial reserve was timely because the ARDMS fell victim to escalating examination costs, and only a loan from ASUTS allowed them to stay in business.

Communication, the root of all successful organizations, was a major priority of Craig's for the remainder of her term of office. The membership was approximately 2,000 strong, and Staiano's initiation of

1977

The king of rock and roll, Elvis Aaron Presley, dies at Graceland.
Alaska pipeline opens.

Joan Baker and Jean Lea Spitz (late 1970s).

Medical Ultrasound as the official Society journal along with Nuss' development of a newsletter provided the vehicles to improve that communication. Craig went on to become one of the greatest communicators in our field, providing thought-provoking issues for discussion in our journal and numerous textbooks used by many educational institutions and programs in the field.

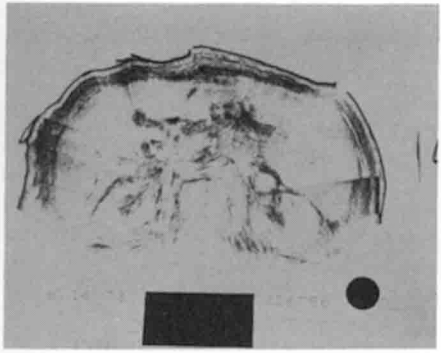
Equipment

At this time, gray scale imaging using scan converters was the main form of image production, and real-time ultrasound was just starting to catch on as a complement to static imaging. Scan-converter technology was developed as a legacy of the Howard Hughes empire and resulting aviation applications. Many technical specialists from the old school preferred their familiar articulated B-scanners, and a tremendous rivalry developed between them and the newcomers who preferred real time! Transducer technology was improving and some offered focusing capabilities. Heat-sensitive paper was replacing Polaroid film. Aided by the improved transducers and recording techniques, cardiac ultrasound was exploding.

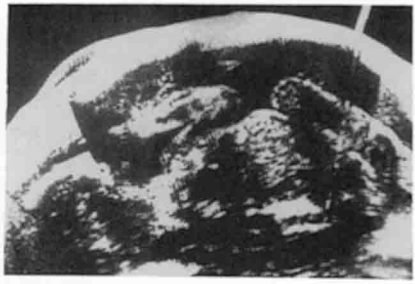
Craig's term of office completed the first 8 years of the ASUTS existence. The Society had traveled far from its humble beginnings. Today's sonographers have no way to comprehend the tremendous dedication and teamwork that it took for a handful of inexperienced but highly motivated "believers" to accept the challenges confronting them as they set out to shape, nurture, and protect a young occupation against many odds and organizations jealous of its apparent acceptance and success in such a short time.

1978

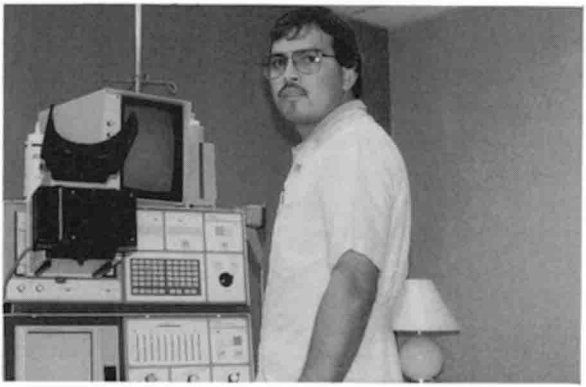
In vitro fertilization discovered by Edwards and Steptoe.
First "test tube baby" born in Great Britain.



Liver and spleen, 1978.



Early pregnancy gray scale.



Joe Rodriguez with Picker machine.

1978 to 1980

Sandra Hagen-Ansert

The 1978 Annual Meeting was held in San Diego, and Sandra Hagen-Ansert, a pioneering educator and author of many textbooks and journal articles in the field of sonography, became President of ASUTS. The ASUTS had grown tremendously, and it was now necessary for the Board to meet twice a year to conduct its business. When the ASUTS was originally formed, the Board requested that the President of ASUTS sit on the board of the AIUM. This did not happen until 1976. In 1982, the ASUTS President became an Ex-officio (nonvoting) member of the AIUM Board of Governors, and this practice continues today.

1979

Nuclear reactor accident on Three Mile Island.
Hostages are taken at the American Embassy in Tehran.
Susan B. Anthony silver dollar debuts.
Sony introduces the Walkman.

With the help of attorney Charles Beuglet, the Constitution and Bylaws underwent their first revision. The new document was adopted at the 8th Annual ASUTS meeting in Montreal. The ASUTS now had many subcommittees, a reflection of the tremendous growth that the Society continued to experience as well as the need to address issues of importance to the ultrasound field. Marveen Craig was named the new ASUTS Executive Director.

The location of Montreal for the 1979 AIUM/ASUTS Annual Meeting created many difficulties. All commercial exhibitor's support equipment and all printed matter for the joint meeting were subjected to rigorous Canadian customs inspections and duties as they crossed the border. This costly, time-consuming lesson prompted the AIUM and ASUTS to create a planning committee for future annual meetings rather than continuing to delegate the complex task to a local volunteer host. The planning committee concept was meant to assure the development of a pool of experienced physicians and sonographers, knowledgeable in the demands and pitfalls of meeting planning. The new committee was called the Convention Program Committee (CPC) and was charged with overseeing every single aspect of meeting planning and production. The ASUTS had three CPC appointments, each to serve for two years. The appointments traditionally included the current ASUTS

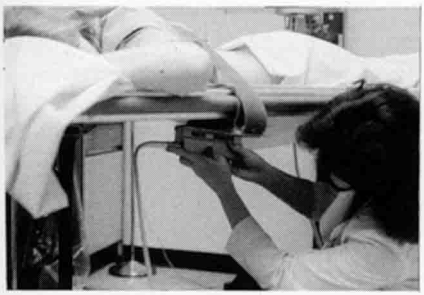
1980

United States boycotts the 1980 Moscow Summer Olympics.
Mt. St. Helens in Washington erupts.
Former Beatle, John Lennon, is murdered in New York City.
ASUTS becomes the Society of Diagnostic Medical Sonographers.

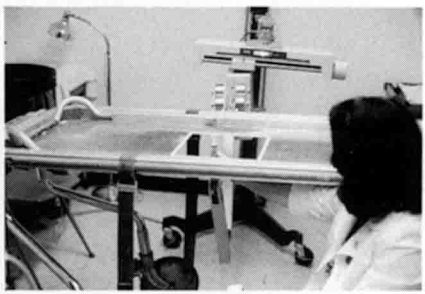
President, who would serve on the committee for the duration of his or her term of office. Another of the appointments would be filled by a resident of the city slated to host the upcoming meeting and the third was the ASUTS Executive Director.

Equipment

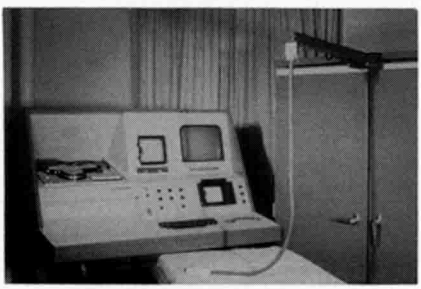
During this period, most hospitals were still using articulated B-scan equipment, which now included a digital rather than analog scan converter, and was capable of demonstrating 64 shades of gray. Real-time instruments were available but were still used as a "crude" check of the information seen on the B-scan. The major manufacturers were still Picker, Unirad, Rohe, Seimens, Searle, Smith-Kline, Varian, Hewlett-Packard, Irex, and Hoffrel, and Aquasonic was still the gel of choice, although many sonographers were still using mineral oil. General Electric purchased the Octoson, an Australian-designed automated water path scanner, for clinical trials.



Prone scanning with real-time, 1979.



Picker B-scanner with prone modification, 1979.



Grumman echo machine, 1978 (only 3 or 4 were made).

Randolph Act

President Reagan's famous budget bill of 1981 was passed into law, and, to the surprise of many, it contained the Consumer Patient Radiation Health and Safety Act. This bill, known as the Randolph Act, was unusual because it dictated to the states that as a protective measure, they must consider passing legislation for the licensure of those using ionizing and nonionizing radiation. This Act boded immediate and serious implications for the field of sonography and was seen by the ultrasound community as yet another attempt by radiology organizations to seize control of all imaging modalities. Nuclear medicine and ultrasound would be strongly affected by this legislation.

The most serious impact to ultrasound was not whether sonographers would be licensed but rather by whom. What representation would sonographers have on any licensing boards? It was obvious that any representation would be minimal, if at all, and certainly would be insufficient to impact any voting issue. Radiology personnel and organizations had always held the position that only x-ray technologists should become sonographers and saw this as way to reach that goal. The field of sonography held internal conflicting views and also was very concerned about patient acceptance of ultrasound. It was felt that directly linking ultrasound to x-ray would raise patient concerns about safety and would seriously weaken the patient trust that had been won to date.

Manpower

There were other concerns. Ultrasound still lacked sufficient manpower. Requiring licensure at this time posed a threat that standards would have to be lowered to meet manpower needs. The ASUTS decided that it was in the best interest of the field of ultrasound to fight this legislation, even though this would be extremely difficult. Louise Berlin, Chairman of the ARDMS at the time, and Joan Baker were delegated the task of turning this situation around. The ASUTS and ARDMS jointly hired Kim Zeitlin, a Washington, D.C., attorney experienced in health care issues, to lead the way and keep both the ASUTS and the ARDMS informed of any developing situations as well as orchestrate a plan of attack. The next 2 years would prove to be enlightening and educational for both Baker and Berlin. (Berlin is today studying law, leaving one to wonder if this experience had any bearing on her career change.)

The ultimate result of this bold effort was that any reference to "nonionizing" was removed from the rules and regulations that are writ-

ten into the model law for the states to follow in their attempt to enact the legislation. Some states have passed and enacted licensure bills regulating ionizing modalities. Only one state has passed licensure for nonionizing modalities, but the bill has not been enacted. The lack of imposed penalties for noncompliance provides an explanation why the many states have avoided full implementation and regulation of the Randolph Bill.

Society of Diagnostic Medical Sonographers

The last major issue of Hagen-Ansert's term was the continuing problem of the name of the organization. The ASUTS Board held long and lively discussions for many months on this issue. Their aim was to select a name that would encompass all practitioners in the field of ultrasound, whether they be clinical, research, commercial, American, or foreign. They finally agreed upon "American Society of Diagnostic Medical Sonographers." This concerned Canadian and other foreign members, so Hagen-Ansert made an executive decision to eliminate the word "American." The new name "Society of Diagnostic Medical Sonographers" (SDMS) became official September 16, 1980.

1980 to 1982

Kathleen McDiarmid

By September 1980, the SDMS had held nine annual meetings with AIUM, and Kathleen McDiarmid was installed as the new President at the Annual Meeting in New Orleans. McDiarmid, who lived and worked in Canada, had been involved in the field for many years, particularly in education, first in Winnipeg with Dr. Ted Lyons and subsequently with British Columbia Institute of Technology in Vancouver. McDiarmid had been associated with the ASUTS since 1972 and had previously served as Western Canada Regional Director.

In the spring of 1980, a survey was dis-

tributed to all known Canadian sonographers. The survey was a result of discussions between many Canadian sonographers who believed it was time to form an independent society in Canada. Of particular concern was the need to have an organized voice to interact with the Canadian Medical Association (CMA) Subcommittee on Accreditation of Paramedical Training Programs. The CMA had been in contact with the Canadian Association of Medical Radiation Technologists (CAMRT) and had begun to work with them on accreditation of ultrasound training programs. While many sonographers were still members of CAMRT because of their x-ray backgrounds, the survey asked sonographers to indicate their preference for an independent society or becoming a defined subgroup of the CAMRT.

The majority of survey respondents supported the formation of an independent society, and a meeting was organized during the AIUM/SDMS meeting in New Orleans in September 1980. The group of approximately 40 sonographers at the meeting each donated $10.00 to support the formation of the new society. A steering committee was appointed, chaired by Vicki Lessoway.

The steering committee established contact with Brian Henderson from the CMA and Arbo Mittila from the CAMRT immediately after its formation and informed them of the existence of the Canadian Society of Diagnostic Medical Sonographers (CSDMS) and their wish to be considered the organization responsible for representing Canadian sonographers. The issue of accreditation was addressed when, in November 1981, the Committee on Allied Medical Education established a provisional conjoint committee on ultrasound training and requested the inclusion of the CSDMS on that committee.

The application for incorporation under the Companies Act was submitted, and the Date of Letters Patent was officially registered as September 30, 1981. Review and signing of the first bylaws were done by Vicki Lessoway, Denise Bourgeois, and Ellen Smith.

1981

Sandra Day O'Connor is appointed to the United States Supreme Court.
Prince Charles weds Lady Diana Spencer.
First space shuttle is launched.
First Annual W. Frederick Sample Award is presented in San Francisco.
Radiation Health and Safety Act (Randolph Act) is passed under Reagan's budget bill.

1982

Equal Rights Amendment is defeated after a 10-year struggle.
Highest unemployment rate since 1940.
Artificial heart is invented by Dr. Jarvik; patient Barney Clark survives 112 days.
The first ultrasound program (Weber State College) receives accreditation.

As McDiarmid assumed office, the Randolph Bill was still a very important issue in the United States. During the next 2 years, the SDMS was criticized by sonographers who felt that legislating licensure was appropriately timed for such a young profession and disagreed with the SDMS policy of fighting this concept. It was difficult to communicate to the membership that this was not an issue of whether sonographers should be licensed, but more an issue of who would control the licensing board and what standards would be set if manpower needs could not be met.

The meeting in New Orleans was a joint AIUM/SDMS meeting, although neither organization had been happy with the joint meeting arrangements for some time. There was mutual continuing dissatisfaction with the financial arrangements of the meeting as well as with the academic portion. The annual negotiations regarding duties and profits had become increasingly strained.

The First Annual W. Frederick Sample Award, developed by Sandra Hagen-Ansert to posthumously honor the contributions of a well-respected young pioneer, was presented to student authors Karen Anderson and Becky Levzow at the San Francisco meeting held in August 1981.

The Australian Ultrasound Society contacted the SDMS regarding participation in the First World Congress of Sonographers to be held in Sydney, Australia, in 1985 as part of the World Federation of Ultrasound in Medicine and Biology (WFUMB) meeting, which is held every five years.

Accreditation

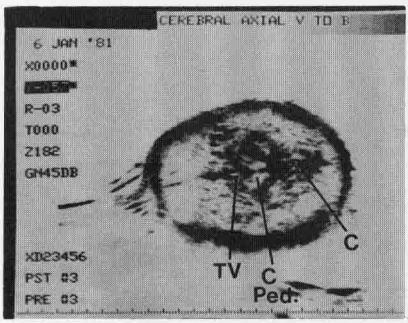
The process of accrediting ultrasound programs became a reality, with accreditation of the first program at Weber State College in January 1982. The SDMS supported this effort by offering site evaluator work-

shops to train site visitors as well as helping ultrasound programs prepare to meet the requirements for accreditation. The Society also began to investigate ways to publicize the accredited programs.

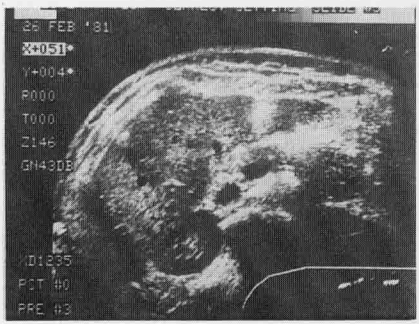
In recognition of the fact that the annual convention was not meeting the needs of the entire membership, the SDMS began providing regional educational seminars as an alternate way to deliver information on new techniques in the field. These meetings were organized and run voluntarily by SDMS Regional Directors.

Equipment

The equipment in use during this 2-year time span remained a combination of static and real-time scanners. The controversy over which one was best was still debated. Patients usually were examined with both instruments; however, the trend was moving toward increasing reliance



Infant head, 1981.



Liver. 1981.

Twins. 1981.

These three images were made using an Octason scanner, which produced the effect of eight transducers firing at once.

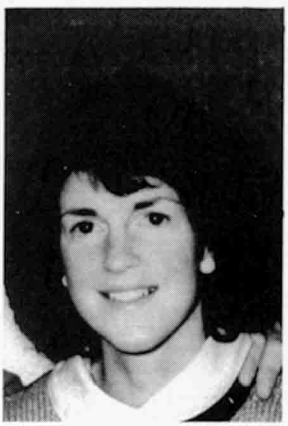
on real-time systems. The use of real-time scanners in cardiology had already become the gold standard, although it took longer for them to be exclusively used in radiology, obstetrics, and gynecology.

Education

Education continued to be the primary issue confronting the Society, and vast amounts of time and energy were devoted to developing ways to raise the educational level of practicing sonographers. The SDMS became a co-sponsoring organization for the cardiovascular technology profession. The task force concerning the Radiation and Safety Act continued to be very active. The SDMS established a Continuing Education Credit System as a service to members who required evidence of CME activity to maintain their ARDMS certification.

The last Annual Meeting held during McDiarmid's term as President was in Denver, Colorado, October 3, 1982. The Executive Board remained the same except that Dr. Terry Silver replaced Dr. Faye Laing as advisor. Student author Dale Cyr won the W. Frederick Sample Award for his paper "Ultrasonic Visualization of the Fetal Pancreas and Hepatic Circulation."

1982 to 1984

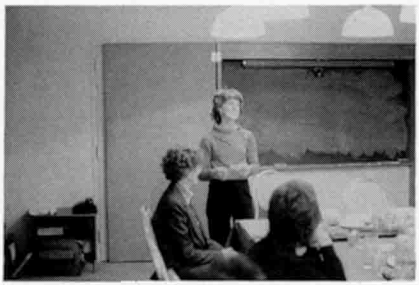


Nici Leibovitz

Nici Leibovitz of Louisville became SDMS President at the 10th Annual Meeting held in Denver, Colorado, in October 1982. The SDMS again found itself in financial trouble because of expanding too quickly to meet the needs of its membership. Marveen Craig, Executive Director, gave the SDMS notice of her intention to retire from the position in one year. The Executive Office was housed in extra space in a sonography school that Craig owned and operated. This meant that SDMS had one year to find new office space as well as replace Craig. At the same time sonographers were asking for easier and more affordable ways to obtain CME credits. These events produced a long list of problems for Leibovitz. Leibovitz worked closely with Craig to find new office space. Finally, in February 1984, interim space was found by taking a lease on a two-bedroom

apartment located near Craig's school. The SDMS finally had its first independent Executive Office. Two full-time employees were moved into the new office, Pat Tune and Debbie Masterson. Leibovitz persuaded Craig to stay in the Executive Director position for one year or until a new Executive Director could be found.

The resolution of the Executive Office issues made it possible for the President to address issues related to the profession itself. The SDMS and AIUM still worked closely together, but as the SDMS membership grew, the Society became more and more independent. During Leibovitz's second year in office, the SDMS held its first independent meeting (called the SDMS First Annual Spring Symposium) in Las Vegas, in April 1984, as a means to offer more CME credits to the members. This project would prove another of Craig's far-reaching accomplishments as Executive Director. Despite a strike by hotel employees, the meeting took place with 84 registrants and paved the way for the SDMS to mark its place in the ultrasound educational meeting arena.



Nici Leibovitz, President, conducts a Board meeting, as Marveen Craig, Executive Director (left) looks on (1983).

The next important agenda item was to find a new Executive Director. Craig and Leibovitz again worked together and hired Gwen Grim who arrived on June 18, 1984. Grim went to work immediately to set up an accounting system, obtain a business license, set up for accurate reporting of state and federal taxes, and all the usual administrative operations. Just as there seemed to be a light at the end of the tunnel, the Internal Revenue Service (IRS) requested an audit for 1983 tax records. The Society records made this request difficult. Grim was able to satisfy the auditors, and no penalties were assessed. However, this did cause

1983

Apple Computer introduces the mouse.
Shirley MacLaine and Jack Nicholson win the Oscar Awards for Best Actress and Best Supporting Actor, respectively, for Terms of Endearment.
Michael Jackson releases "Thriller," best-selling album to date.

1984

Walter Mondale chooses Geraldine Ferraro as his Vice-Presidential running mate.
Indira Gandhi is assassinated.
Vanessa Williams resigns as Miss America.
SDMS establishes its first Executive Office.

the IRS to red flag the Society for future review. The IRS kept their promise and reaudited the books in 1987. All of the IRS activity and the creation of a formal office had focused more attention on the budget. The bills were now paid directly out of the Executive Office, and formal records were kept.

In 1983, Sandi Lindahl became the first President of CSDMS. The same year, the CSDMS became an official conjoint member of the Diagnostic Imaging and Medical Radiations Technologies (DIMRT) of the CMA accreditation process. Competency profiles and accompanying curriculum guidelines were developed to be used as a basis for accreditation of ultrasound training programs. There were 333 members of the new Canadian Society on January 7, 1983.

At this time, sonographers still used both B-scan and real-time scanners, although most of the equipment development involved real-time imaging.

1984 to April 1987

Jackie Carlson

The AIUM/SDMS meeting held in Kansas City in 1984 came around very quickly, and Leibovitz's term of office was complete. Jackie Carlson became the eighth President of SDMS. Carlson faced a major problem immediately upon taking office, when the AIUM informed the SDMS that the meeting in Kansas City had lost money, and that the SDMS would have to pay the AIUM $12,600 as their share of this financial loss. This unexpected setback directly led to the SDMS Board decision to hold separate fall meetings effective in 1986 at Las Vegas.

The SDMS held its Second Spring Symposium again in Las Vegas. The year 1985

was a busy one for meetings: July 14 was the First World Sonographers Congress held in conjunction with the World Federation of Ultrasound in Medicine and Biology Meeting in Sydney, Australia. Carlson attended and was involved on the World Sonographers' Steering Committee.

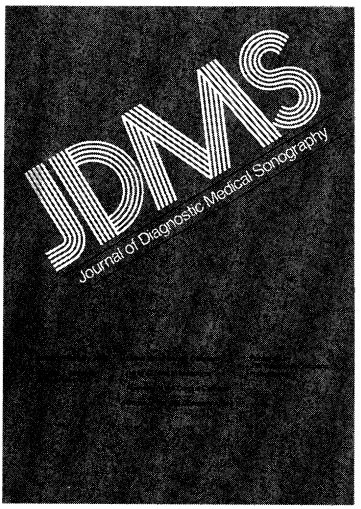
Dallas AIUM/SDMS Convention, 1985. This was the last joint convention.

The CME program grew rapidly, and Pat Tune, Gail Buurma, and Gwen Grim carefully reviewed all applications. There was now a greater need to open lines of communication with other organizations, since the Society was not as closely tied to the AIUM and needed to get input from many different sources. The Society also began to look at membership benefits and in 1985 began offering liability insurance for sonographers.

The Society was again outgrowing its office space. The two-bedroom apartment was no longer big enough, and the electrical power was inadequate for office equipment. In March 1985, the Society made the long overdue move to trade-in the apartment for a real office and moved to a 1000-square foot space at 10300 North Central Expressway, Dallas. With the new space came the decision to bring all computerized membership information in-house. The financial situation improved to such an extent that it was possible to hire an accounting firm to do an annual independent audit. The Society built up enough reserves to have 1 year's operating expenses on hand and a balanced budget.

1985

Mikhail S. Gorbachev takes control of the Soviet Union.
"Live Aid" broadcasts to 152 countries to raise $70 million for African famine relief.
First issue of the* Journal of Diagnostic Medical Sonography *is published.



Attention had turned to the fact that the SDMS did not own the copyright to their official journal. *Medical Ultrasound* was actually owned by John Wiley & Sons publishing company. The contract with Wiley ended, and Leibovitz signed a contract with J. B. Lippincott Company during the Kansas City Meeting in 1984. This led to the formation of the *Journal of Diagnostic Medical Sonography (JDMS)* with the copyright owned by the SDMS. The first issue of this new journal was published in January/February 1985, with Mimi Berman as the founding editor.

Over time, other benefits were added to the new journal. Sonographers could obtain CME credits by reading selected articles, answering a corresponding quiz, and submitting the answers to the Executive Office for credit. The first Gottesfeld Award paper appeared in the July/August 1985 issue. This award was named after Kenneth Gottesfeld, M.D., an obstetrician and gynecologist from Denver, Colorado, who was a pioneer of the field and who had passed away at an early stage in his career. The Gottesfeld award is given each year to the best three papers published in *JDMS* recognizing outstanding research, professional, technical, or review articles.

Professionalism and recognition both within and outside of the medical community were still issues. The Society attended to these concerns by applying for inclusion on committees that addressed ultrasound issues such as the American College of Radiology Ultrasound Technologists Committee, the Joint Review Committee in Education in Cardiovascular Technology (JRCCVT), Radiological Society of North America Associated Sciences Consortium, CAHEA Panel of Consultants, AIUM Standards Committee, and the AIUM Bio-effects Committee. Membership on these committees made the SDMS very visible in matters relating to the use of ultrasound and launched the Society as the only Society that spoke exclusively for sonographers. The Society also used its financial resources to publish a public relations brochure and to undertake the groundwork for a code of conduct statement. Authors of all publications, including journal articles and job descriptions, were encouraged to use the term "sonographer" exclusively.

Diane Burda (left) and Linda Gordon (right).

In 1985, the Canadian Society of Diagnostic Medical Sonographers (CSDMS) voted to adopt the ARDMS registry exams as the official Canadian certification for sonographers. The CSDMS was granted approval by the ARDMS to issue CME points for continuing education programs. A goal of the CSDMS at that time was to attempt to ensure that all personnel performing ultrasound procedures in Canada met the same basic educational criteria, that is successful completion of the ARDMS examinations.

Sonographer education continued to be a major concern of SDMS. Ways to increase the knowledge and educational standards of those sonographers who were trained on-the-job were the subject of many debates. The goal then and today is ultimately to have all sonographers entering the field through accredited programs. Understandably, this goal will take many years to accomplish, but efforts are directed toward continuing support of the *Journal,* maintaining a speakers bureau, offering new avenues leading to CME credits, continually revising and publishing educational guidelines, publishing lists of accredited schools, and others.

Licensure, although a state issue, was important to many members. Member surveys conducted over the years to monitor the feelings of the membership about licensure always were generally split down the middle. SDMS makes it a policy to try to keep members informed about legislative issues in their states so that they may act accordingly.

1986

Martin Luther King day is officially observed.
The space shuttle Challenger explodes, killing six astronauts and one civilian.

Dallas, 1985. Left to right: Jean Lea Spitz, Marie De-Lange, Tom Jones, Gwen Grim, Diane Kawamura; standing: Jackie Carlson, Roy Soares.

The Society's Board also realized that they needed to establish long- and short-term goals to give them better focus and direction as well as assisting in the budget mechanism. The Board also had grown too large with 23 members, 13 of whom were Regional Directors. It was expensive and logistically difficult to host Board meetings. This number was reduced to seven regions, making it possible for all Regional Directors to attend the annual meetings and actively participate in the business of running the Society. Membership services also were expanded to include a salary survey and job listing in the Executive Office.

Orlando, 1986. Left to right: Joe Rodriguez, Linda Gordon, Irwin Kuperberg.

Orlando, 1986. Left to right: Marie De-Lange, Treasurer; Joe Rodriguez, Secretary; Diane Kawamura, Vice-President; Jean Lea Spitz, President-Elect; Jackie Carlson, President.

Equipment

The field continued to grow as new and improved equipment became available. More and more real-time scanners were being purchased as an adjunct to "B" scanners. Doppler was used with increased frequency, especially in cardiac sonography, where two-dimensional imaging was established as necessary.

SDMS was entering what many viewed as its "adolescent" phase.

April 1987 to April 1989

Jean Lea Spitz

Carlson's term continued until April 1987 because the SDMS Annual Conference was held in the spring. At the April 1987 meeting, held in Chicago, Jean Lea Spitz became President. Although the relationship with AIUM was different, nevertheless, SDMS held a fall meeting in New Orleans in the same location as AIUM. The major difference was that the SDMS held a one-day specialty meeting immediately preceding the AIUM convention rather than the previous combined format. SDMS also held its 5th Annual Meeting in Anaheim in 1988, changing the title from Spring Symposium to Annual Conference.

In October 1988, the World Federation of Ultrasound in Medicine and Biology meeting was held in Washington, D.C. During this meeting, the ultrasound community recognized its pioneers and created an exhibit for the Smithsonian Institute. The second World Sonographer's Day also was held as a three-quarter day program featuring sonographers from Australia, Britain, Japan, the United States, and Canada. Considerable time was spent developing a letter of agreement between the SDMS and the AIUM regarding the WFUMB meeting. It was a wonderful meeting from the participants' standpoint.

The year 1989 found the AIUM without a scheduled national meeting. In 1989, the AIUM voted to move their meeting to the spring of each year beginning in 1990, stating that scheduling so close to the Radiological Society of North America meeting was affecting their trade show. The SDMS then moved their Annual Meeting to the fall.

The 1988 WFUMB meeting was to be the last joint meeting of the two organizations. The decision was made during Carlson's term but

1987

The stock market crashes.
***Michael Douglas wins the Oscar Award for Best Actor for* Wall Street.**

did not become effective until 1987. The rationale for meeting separation included providing more meeting time for sonography speakers and concerns, and separating finances so that the SDMS was not forced to contribute to the much larger AIUM administrative overhead whenever a meeting lost money. This difficult decision was justified as being in the best interests of sonography independence and developing professionalism. However, there still were strong nostalgic ties to the AIUM and a sincere hope that a relationship of teamwork would still exist between the physicians and sonographers. The concept of having specialty meetings throughout the year, with one specialty meeting held in the same place as AIUM, was developed. The first of these was the well-attended fall 1987 meeting in New Orleans, held one day before the AIUM meeting but in a separate hotel.

Longstanding SDMS members continued to question the SDMS Board about the relationship between SDMS and AIUM. Jean Lea Spitz addressed this issue in the fall 1986 SDMS Newsletter. Spitz pointed out that the SDMS was very supportive of the AIUM and its multifaceted support of the field of ultrasound. She also commended them for their support of sonographers. However, "the Board recognized that the AIUM is not able to continually give full-time representation to the interests of sonographers any more than they can devote all their time to interests of any one facet of the ultrasound community." It was necessary to focus sonographer issues within the SDMS and maintain the necessary support services to do this.

During the first World Sonographer's Congress in 1985, an effort was made to develop an international sonography organization. The structure of such an organization and a commitment of financial support from the SDMS was in question. At the WFUMB meeting in Washington, D.C., in 1988, an open hearing was held on the formation of an

1988

The Soviet Union leaves Afghanistan.
First Sonography Coalition meeting is held.

international sonographer's society. The general consensus of the SDMS board was that the bylaws for the new group, its organization, membership services, and the financial needs and manner of support needed to be better defined by the international community before SDMS could fully support the concept.

At their 7th Annual Conference in April 1989, the CSDMS made a formal request to the ARDMS to consider a name change to better reflect the international scope of the organization. The ARDMS responded that it was already exploring this possibility.

In April 1989, William O'Brien, PhD, AIUM President, reported to the SDMS Board that representatives from AIUM, SVT, and SVS/ISCVS had met to address the issue of voluntary accreditation of vascular laboratories. This group decided to invite three additional societies, including SDMS, to participate by sending two representatives.

During Spitz's term of office, many new personnel were added to the Executive Office. A director of membership, a meetings director, a receptionist, and an assistant membership person were added late in her term. The reduction in the number of Regional Directors made the Board more manageable, and, along with the continuing experience provided by rotating terms, much more was accomplished. Board meetings were more focused, and their agendas were more reflective of the goals of the Society. A policy and procedures manual was compiled, which defined each position, the term of office, and selection criteria. Board appointments versus Presidential appointments were defined along with criteria for each appointment.

A reserve fund with investment policy guidelines was established to finally put behind the SDMS the specter of financial instability.

The American Society of Radiologic Technologists (ASRT) was actively promoting licensure bills on a state-by-state basis. The SDMS membership indicated equivocal support for licensure with a strong stand against inclusion with another profession in the licensing bill itself. It was the membership response to licensure that led to the appointment of a task force under the direction of Becky Levzow to write a handbook. This booklet was intended to offer members both sides of

1989

Minimum wage increases to $4.25.
Tiananmen Square massacre.
Berlin Wall comes down.

this issue as well as provide them with the knowledge of legislative protocol and language. The committee had difficulty accomplishing their task in a timely manner, and it was not until the next President's term that it was possible to fly the committee to Dallas to work on the project. During Spitz's term, a Conference Management Committee (CMC) was developed to shift the responsibility for meeting programs from the President-Elect to the CMC. The CMC became a strongly independent committee, which functioned both in planning and executing meetings. This led to hiring a full-time meetings director and further definition of the roles of committees and staff.

The Educational Outlines were rewritten as a registry review document, and an honorarium was provided to the volunteers who reviewed and developed the Abdomen, Obstetrics/Gynecology, and Physics documents. The SDMS Board acknowledged the enormity of the task requested of its members when they were asked to write, review, and edit documents that later were going to be sold to members. The Licensure Booklet and Guidelines for Review Series are examples of complex tasks that were funded through honoraria.

Spitz's presidency was to see the start-up of a very important group called the Sonography Coalition. The AIUM, SVT, ACR, ARDMS, JRCDMS, and SDMS met for the first time in Washington, D.C., during the WFUMB meeting. This group is very active and will play a big role in health care reform under the Clinton administration.

The American Healthcare Radiology Administrators (AHRA) Summit on Manpower also was initiated during this time and also has continued. The Summit is a group of radiological society representatives who are involved in gathering data related to manpower needs, recruitment, and retention strategies in radiography, nuclear medicine, radiation therapy, and sonography. Establishing and maintaining this relationship made it possible to point out clearly the difference between "radiologic technologists" and "sonographers," and these positions were described separately in all press releases.

Sonography Coalition, Seattle, 1989. Left to right: Diane Kawamura, Jean Lea Spitz, Marilyn Dean, Andrea Skelly, Bill O'Brien.

The invitation by AHRA to the SDMS to participate in the Summit on Manpower was one of the first occurrences when the SDMS had

been invited to attend and participate in a larger national organization. This was the start of many more invitations for SDMS participation. The membership in SDMS reached 6,000, surpassing that of the AIUM. Dr. Denis White's concern that a technical society could become larger than the physician society, voiced in 1969, was realized. SDMS also organized the World Congress for Sonographers. Many herald these events as the passage of SDMS from adolescence to adulthood.

The SDMS went further by creating the SDMS Educational Foundation. Don Milburn, Director of Education for Diasonics, Inc., approached the SDMS in 1988 to suggest establishing a scholarship program for sonography students. Their financial support, and the initial concept, which was in keeping with the long-term goal of SDMS to establish an educational foundation, was approved by the Executive/Finance Committee during their summer committee planning meeting in Dallas. The Foundation that ultimately developed has made a tremendous impact in a very short time under the inspirational leadership of Marie DeLange, its first President. An initial Board of only five members worked with Gwen Grim, the Executive Director, to establish the Foundation. The Foundation was incorporated, policies were written, administrative procedures were established, and the first scholarships were awarded within one year! Gratitude to Diasonics and many other corporate sponsors is acknowledged, since they helped provide scholarships for numerous student sonographers.

Boston, 1989. SDMS Educational Foundation founding Board of Directors. Left to right, Gwen Grim, Executive Director; Sharon Roberts; Marie Delange; Gale Kennedy; Louise Berlin; and Beth Anderhub.

Equipment

The equipment in use at this time was essentially all real-time. Continuous wave and pulsed Doppler, including color flow, now were available and considered the standard of practice for the field.

It was obvious that the Society was moving from a volunteer-intensive organization to a professional Society. Rapidly increasing membership provided the funds to expand the Executive Office and the support staff. They, in turn, worked with volunteers to develop consistent policies and procedures for the Board, the Committees, the staff, and appointed representatives. The budget went from a haphazard financial record to a fully accountable computerized representation of the Society's goals and priorities. The increasing membership not only allowed expansion of the office but of membership services as well, making it possible to endow the Educational Foundation and to offer additional education to members.

April 15, 1989 to September 28, 1991

Diane Kawamura

This was the second time that the term of office of President extended beyond 2 years. The reason was the same as it was the first time . . . changing the date of the Annual Meeting to occur in the fall rather than in the spring, thus extending the term of office for all Board members by 6 months. Diane Kawamura took over as President on April 15, 1989. She inherited enough issues to keep her busy for longer than her term of office. The Society publications were outdated and needed to be rewritten. An Audio-Visual Committee was formed to establish the process and procedure for producing educational video tapes. The Licensure Committee had been working for two years on the Licensure Booklet, and this publication was in great demand. The President brought this project to conclusion by bringing the Committee to Dallas to finalize the document. This action significantly reduced the time that the President was spending fielding questions about licensure.

It was critically important to establish the SDMS as the organization that was the voice for sonographers. To do so involved making the SDMS more visible and so the ACR, ACC, ASE, AIUM, and ASRT were

1990

Operation Desert Shield leaves for Saudi Arabia.
Mikhail S. Gorbachev (Soviet Union) wins Nobel Peace Prize.

targeted as organizations that needed to hear the message that the Society had the expertise and determination to direct the sonography profession. The SDMS made it a mission to notify these organizations that any references to its members, orally or in printed matter, as anything other than sonographers was wrong. The President also secured invitations to as many organizations' meetings as possible to take the opportunity to answer their questions and to educate them on the sonography profession and the SDMS. This resulted in attendance by the SDMS President or her delegate at the RSNA, ACR, AIUM, ASRT, ASE, SVT, and other meetings. The Intersocietal Commission for the Voluntary Accreditation of Vascular Laboratories (ICAVL) held its first meeting in early 1991. SDMS was represented by Cindy A. Owen, RT, RDMS, RVT, and Polly DeCann Wilson, RVT.

The President also developed the Sonography Program for the ASRT International Conference of the Americas. The final program clearly stated that it was the SDMS that had provided the speakers and topics. It was believed that all of this effort and hard work had a positive effect in that the ACR, AIUM, and ASRT now demonstrated a greater respect and understanding of the SDMS. Spitz began and Kawamura continued the involvement with the Summit on Manpower, which has become very important and ongoing. Other important issues that the SDMS needed to address involved outlining the functions and goals for the Sonography Coalition and implementing a Policy and Procedure Manual. A Scope of Practice statement was the document most logical to produce next.

SDMS Annual Conference, Boston, 1989. Back row (left to right): Karen Hughes, Bill O'Brien, Diane Burda, Gale Kennedy. Middle row (left to right): Reva Curry, Linda Gordon, Kathy Gill. Front row (left to right): Beth Anderhub, Kirstin LaConte. Photo courtesy of Linda Gordon.

Seattle, 1990. Selling Foundation sweatshirts was easy on this chilly Annual Conference evening cruise. Left to right: Dale Cyr, Gwen Grim, George Junginger, Jennifer Fratianni.

The SDMS Board had to learn to accept the role of the Executive Office, permitting it to grow and meet the demands of the membership without being micromanaged by the Board. Executive Director Gwen Grim had been with SDMS for quite a few years and continually demonstrated her ability to hire excellent people, to assist employees to meet their potential, and to recognize when employees required education, critique, or termination to maintain an effective Executive Office staff. Whatever qualities Marveen Craig and Nici Leibovitz recognized as Gwen Grim's talents have been proved and exceeded many times over. The SDMS is very fortunate to have an Executive Director who grew with the organization and successfully answered its challenges.

Kawamura developed the SDMS Policy and Procedure Manual during her term as President-Elect, and as President she implemented and revised it wherever appropriate. Implementation was not as easy as one might have expected or hoped. However, this accomplishment has resulted in a better nominating and voting process.

The sonography profession was without a Scope of Practice statement. If the SDMS was to author such a document, then it was crucial to write it as soon as possible. Kawamura took on this task and spearheaded the writing of the document and obtaining the endorsement of many interested societies and organizations. Endorsement of the Scope of Practice Document took 2 more years and was finally accomplished in 1993. The demands of the Society had grown to a size that stretched a President to the maximum and beyond. The office of President demanded at least 20 hours a week, exceeding what most officials could spend and still hold a full-time job.

1991

Charges against Oliver North are dropped.
Senate confirms Clarence Thomas as United State Supreme Court Justice.
The Soviet Union is dissolved.

In general, numerous publications received "facelifts" during Kawamura's term. The SDMS Newsletter was renamed *SDMS News Wave* after members were given the opportunity to submit suggestions. The new name was submitted by Karen Marr, RDMS, of Port Colborne, Ontario, Canada, and made its debut in September 1991.

No organization's job is ever done; there is always room for improvement. The SDMS continued to try to improve their professional relationship with the ARDMS and build relationships and mutual partnerships with other organizations whenever those partnerships promote the sonography profession without injuring SDMS standards, principles, or philosophies.

Dilemma: Do we name names? A certain Board of Directors shares dessert while celebrating St. Patrick's Day during a long and intensive Board meeting. (1991)

Kawamura's term of office was extremely productive, resulting in an increase in the number of SDMS publications, increased membership, improved professional relationships with other organizations, and an increased respect and appreciation for the Executive Director and staff.

1991 Board of Directors. Left to right: Roger Warner, Kathleen Ritch, Jan Bryant, Cathy Carr-Hoefer, Diana Yankowitz, Karen Hughes, Diane Kawamura, Jean Lea Spitz, Kathy Gill, Reva Curry, Beth Anderhub, Julia Drose, David Adams.

Equipment

Equipment advances were mainly in the area of color Doppler and the use of endocavitary probes. Use of endocavitary untrasound began to stir controversy about who should do such exams, use of chaperones, and other issues. The popular use of contrast media and three-dimensional imaging appear to be on the horizon.

September 1991 to September 1993

Reva Curry

Reva Curry was installed as President of the SDMS at the 8th Annual Conference in Nashville. Curry, along with Gwen Grim, Executive Director, had represented SDMS at the World Federation of Ultrasound in Medicine and Biology in Copenhagen, Denmark, only a few weeks before. Curry was SDMS' appointee to the World Federation of Sonographers, and, as she assumed the Presidency, this appointment went to Cathy Carr-Hoefer of Corvalis, Oregon. The World Federation was still trying to formally adopt a constitution and bylaws, and Curry was instrumental in ensuring SDMS participation during the draft stages. It was evident in Copenhagen that SDMS was going to be viewed as the world leader, having by far the largest membership numbers of all of the countries represented.

The Sonography Coalition, including representation from a number of other organizations, assumed responsibility for the Sonographer Scope of Practice. It was felt by representatives that for this document to wield the most influence in the medical community, it should not be "owned" by one professional society. To guarantee input from all ultrasound professional organizations, SDMS relinquished ownership of the document but retained publication responsibilities. Although it slowed the process, this decision ensured participation and, it was hoped, agreement on the content.

The policy of commercial sonographers not holding elected office in the Society was still maintained. However, some members had expressed a desire for commercial sonographers' viewpoints to be clearly

communicated within the Society; they were rapidly representing a larger segment of the membership. After much research and discussion by an appointed task force, it was agreed that while these sonographers should have much more opportunity for input, the potential for ultrasound companies to gain from having representation on the Board would still be cause for concern. Therefore, the position of Ex-officio (nonvoting) commercial representative was added. Every 2 years, each company would be permitted to submit one name for the position, and a name would be drawn at random from those submitted to avoid preferential treatment to any company.

Diane Kawamura (left) congratulates Dale Cyr on Fellow Membership, SDMS' highest honor (1991).

Philadelphia, 1992. Marie DeLange (left), SDMS Educational Foundation President, presents a plaque to Jean Lea Spitz (right), JDMS Editor, recognizing *JDMS* support of the Foundation.

Philadelphia, 1992. Gwen Grim addresses the membership at the SDMS Annual Conference while Linda Gordon, Beth Anderhub and Roger Warner look on.

1992

Riots occur in Los Angeles after police beat Rodney King.
R. H. Macy Company files for bankruptcy.
Bill Clinton is elected 42nd President of the United States.

The First Annual Sonographer Awareness Week occurred October 7 to 13, 1991. Twenty-nine states and Puerto Rico received official government recognition of the event thanks to some resourceful state representatives, and radio and print advertisements were placed across the U.S. and Canada. Members received posters and buttons and were able to purchase commemorative T-shirts. This event has continued to generate pride and enthusiasm each year.

At the October 1992 meeting of the Committee on Allied Health Education and Accreditation (CAHEA), the American Medical Association announced that CAHEA would cease to exist as of October 1993. With notice of only 1 year, this sent programmatic accreditation into a tailspin! What would be the structure of a new accrediting body, and how could it be operational in such a short time frame? The AMA appointed a task force to design a CAHEA "replacement" proposal for all sponsoring organizations of Review Committees to evaluate. In the meantime, some professions chose to go independent, meaning that their Joint Review Committees would have to seek approval from the U.S. Department of Education. SDMS, along with the other sponsoring organizations of the JRCDMS, had to begin evaluating options.

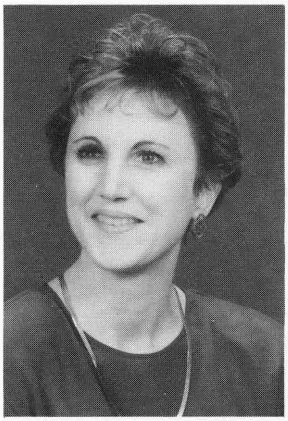
On July 7, 1992, membership reached 10,000! This milestone demonstrated that SDMS had indeed taken its place in the ultrasound community. It also was significant in that more than 40% of members had more than 10 years' experience in the profession.

Equipment

In 1992, the Department of Health and Human Services, Office of the Inspector General issued three reports detailing the results of studies centered on the appropriateness of Medicare reimbursements for tests conducted with "less sophisticated ultrasound equipment" such as the popular "Pocket Dopplers."

1993–1994 Board of Directors. Seated left to right: Diane Burda, Secretary; Gale Kennedy, Vice-President; Beth Anderhub, President; Terry DuBose, Treasurer; Reva Curry, Past President; Roger Warner, President Elect; standing left to right: Nancy Spangler, Director, Region 4; Julia Drose, Director, Region 2; Jeanette Burlbaw, Director, Region 3; Joan Baker, Director, Region 1; Diane Black, Director, Region 7; Charlotte Brookshire-Quinn, Director, Region 6; Stephen McLaughlin, Director, Region 5; Gail Buurma, Ex Officio Commercial Representative.

September 1993 to the Present



Beth Anderhub

Beth Anderhub was installed as President at the 10th Annual SDMS Conference in Anaheim. Gail Buurma, RDMS, Diasonics, Inc., assumed the role of the first commercial Ex-officio representative to the Board. One of the first accomplishments was completion of the Sonographer Scope of Practice Document. After the *eighth* draft was reviewed, the document was endorsed by the SDMS, the American College of Radiology, and the American Society of Echocardiography. It was published in December 1993 and distributed to SDMS members without charge.

Anderhub's immediate challenge as President was the issue of the future of program-

1993

Tennis great Arthur Ashe dies of AIDS-related complications.
Bomb goes off in the World Trade Center.
First edition of the* Sonographer Scope of Practice *is published.
Standoff occurs between ATF and Branch Davidians in Waco, Texas.

matic accreditation. Was the sonography profession mature enough to attempt independent accreditation? Did it have the personal and financial resources to achieve it so quickly? After much thought and debate, the SDMS voted its support through the JRCDMS to participate in the Commission on Accreditation of Allied Health Educational Programs (CAAHEP), the successor to CAHEA. Anderhub was elected Vice-President of CAAHEP's first Board of Directors.

The radiography profession announced its intent to establish independent accreditation. This would effect sonography because management services had been "loaned" at a reasonable cost by the JRCERT since the JRCDMS began operating in 1981. Because they were becoming independent, it would mean that they could no longer house the JRCDMS. After lengthy discussion, the SDMS Board voted to submit a proposal for management services to the JRCDMS. A few of the other sponsoring organizations also offered, but the JRCDMS voted to retain

Anaheim, 1993. Immediate Past President Reva Curry passes the gavel to incoming President Beth Anderhub. Past President Diane Kawamura looks on.

1994

Republicans sweep Congress.
Jacqueline Kennedy Onassis dies.

management services from a group independent of any sponsor. It is now managed by the Accreditation Review Committee on Education in Surgical Technology.

The first year of the Clinton White House brought with it Health Care Reform. Over time, it became apparent that health care would not be reformed at the federal level but rather by third party reimbursement and state legislation. However, the very threat of imposed cost containment made the industry reel. Sonographers who had worked in the same place for 15 years suddenly found themselves being replaced by part-time, sometimes lesser educated people at a lower wage rate. Smaller private practices began merging or closing, eliminating some sonographer positions. One of the most significant blows was that across the country continuing education budgets were reduced or even cut, forcing registered sonographers to fund their own continuing education.

About this time, Blue Cross of Massachusetts drastically reduced outpatient ultrasound reimbursement and required that sonographers doing such examinations be registered by ARDMS, forecasting a possible trend. Both the American College of Radiology and the AIUM announced intent to establish ultrasound laboratory accreditation similar to ICAVL. Both organizations stated that they would require that sonographers be ARDMS registered or "Registry eligible." Both organizations are expected to debut these programs some time in 1996.

In 1994, the U.S. Department of Health and Human Services appointed a National Commission on Allied Health to evaluate the role of allied health in health care reform. This came about after Clinton's original health care reform plan did not even mention allied health professions. At the same time, an informal group met voluntarily to form a "Coalition of Allied Health" to initiate cooperation among the professions on a nongovernment level. Beth Anderhub and Gwen Grim attended two steering committee meetings of this coalition.

The purported health care reform essentially died in Congress, and at the end of 1994, elections ushered in a very new group of Senators and Representatives. Even so, the wheels were in motion, and cost containment had taken hold. Hospitals were being gobbled up by huge cor-

1995

SDMS celebrates its 25th Anniversary.

porations. The biggest threat to allied health and eventually to ultrasound was the concept of "multiskilling," which demands despecialization of health care professions. The concept of patient-focused care, where a team brings care to the patient rather than sending the patient to different departments for different services, required those caregivers to adapt certain skills from other professions (e.g., a respiratory care person taking a chest x-ray, and so forth). Sonographers were going to be forced to determine whether to embrace and initiate their own "multiskilling" or sit and wait for it to happen to them.

The SDMS issued a Position Statement on the concept in November 1994, stating essentially that it endorsed multicredentialing within ultrasound as the most practical approach in this modality. If a sonographer is registered in both abdomen and cardiac, for example, then he is truly a multiskilled, multicredientialed sonographer who can cross departments within an institution.

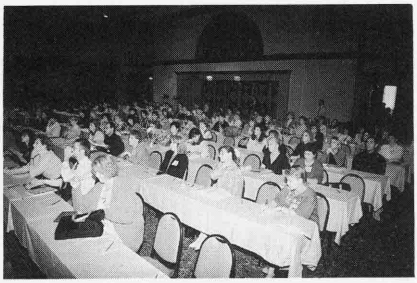
Equipment

The health care reform climate which began with the Clinton Administration severely curtailed progress in the ultrasound equipment industry. New developments tend to be in the area of contrast media.

Conclusion

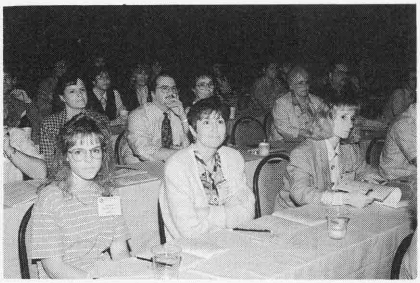
As the decade of the 1990s continues, it does so with the SDMS clearly recognized as the organization that represents sonographers in every specialty and in every career path that sonographers can select: management, education, commercial sales and applications, staff, and so forth. From this base, the Society is poised to move the profession into arena of new health care delivery, which will undoubtedly be a part of the 90s. There is no doubt that the evolution of the SDMS over the past 25 years has prepared it well for the challenges of the future.

Chicago, 1994. Left to right: Cindy Owen, Marsha Neumyer, Gail Buurma.



Chicago, 1994. SDMS Annual Conference attendees listen to an educational lecture.

Beth Anderhub, MEd, RDMS, President (1993 to 1995) presents SDMS' first Honorary Membership to Marilyn Fay, former Executive Director of JRCDMS, on September 15, 1994.



Chicago, 1994.

Sandy Katanick (right) promotes vascular laboratory accreditation at the SDMS Annual Conference, 1993. Sandy was SDMS' first appointment to the ICAVL Board and was later hired by ICAVL to be their Executive Director.

The SDMS' first 12 years can appropriately be termed its infancy. Baker, Harris, Nuss, Staiano, Craig, Hagen-Ansert, and McDiarmid steered the ship during this period of time.

The early officers of ASUTS/SDMS had a particular commonality: they all were dedicated teachers who had been involved in the early, rapid growth of this new modality. All were acutely aware of the serious shortage of technical specialists—but more importantly, they understood that the future of ultrasound was dependent on the ability of the field to provide qualified manpower.

It is impossible to completely chronicle the countless number of successful and visionary contributions of these Presidents, who collectively represent the first 12 years of the ASUTS/SDMS. Many of the individuals they trained in the early days of our profession have themselves gone on to become teachers.

SDMS Presidents Leibovitz, Carlson, Spitz, Kawamura, Curry, and Anderhub who represent the presidential roster of the most recent 13 years of the organization, have brought the Society through its adolescence. They too are dedicated teachers. All of these sonographers were chosen for their abilities to manage and lead the Society to newer and more challenging levels.

Through their experience in teaching and sonography, these outstanding people breathed life into and sustained an emerging profession. Their most important contribution was the selfless love and demonstrated generosity of knowledge and expertise they provided.

All the Presidents of SDMS have provided the history that is presented here. Most of these events have never been published, and the only source of information was from the participants themselves. I thank all of them for the memories and input, which made it possible to write this remembrance. One past President, however, went beyond sharing her memories. Without the help and guidance of Marveen Craig, this assignment would not have been completed. Thanks also to Gwen Grim and the staff of the SDMS office, who spent time researching the records and data bases for the names of previous officers and verifying the accuracy of information written in this chapter.

Society of Diagnostic Medical Sonographers: Focus on the Future

A History of SDMS' First 25 Years

JOAN P. BAKER, MSR, RDMS

Lippincott–Raven Publishers, Philadelphia

Personal Memories

I've been an SDMS member since about 1980. I began scanning in 1977 and haven't stopped since. I'm also your representative in the state of Maine. The story I'm about to tell occurred in the mid-1980s, while I was scanning for dollars.

I was one of two sonographers in a three-room ultrasound department in a busy medical center in Maine. I was hired as a per diem sonographer, and there was only one staff member. We were doing 20 to 30 cases a day. Needless to say, we were busy!

While I was performing an obstetric examination, the patient's husband asked me if I would tell them what sex their baby was going to be. I told him that I would try if I could. I forgot the request almost as soon as he made it and concentrated on the task of providing evidence that the fetus was healthy.

Conversation was friendly, and some of the barriers we put up in interpersonal communication came down. The parents-to-be enjoyed looking at the screen and seeing their baby. At the end of the examination, the husband said to me, "So, no sex, huh?" I replied, "No, by the time I get home, I'm just too tired."

Happy 25th Anniversary from a long-time member.

Beverly J. Cowan, RT, RDMS

I have been involved with sonography since the mid-1970s and have been working with students in some form since 1983. I have several remembrances.

Several years ago, one of my male students was beginning to scan abdominal studies. He had a female patient who made a nice scan model

even though her liver was very high. This was possible because she could take in a very deep breath and maintain it well. In an attempt to compliment the patient, the student said, "You take in very good breast." You can imagine the embarrassment on the student's part and what a chuckle the patient and the clinical instructor had.

I have had other students tell me about what awkward situations they find themselves in when they ask the question, "When did you get pregnant?" The patient responses have included patients beginning to tell them specific details as to not only when, but how and where.

Another patient, a 13-year-old boy having a testicular study, asked me if he could read his book while I performed the examination. I told him that he could. I never mentioned to him, however, that during the entire examination he held his book upside down. Students love this story because it helps them develop a better understanding of a patient's uneasiness during an examination.

In the laboratory setting, I try to help students understand the apprehension of patients by having them stand behind the machine and face the student sonographer, who is receiving instruction on scanning. At some point, I begin imitating the facial expressions of the scanning student sonographer. The observing student usually sees me and begins to laugh. It is a fun way of helping students become more aware of their behavior in an attempt to help them develop and maintain a professional demeanor and help reduce patient anxiety.

Lynne Schrieber, BS, RT(R), RDMS

One day, while performing a 20-week obstetric study, I was scanning my patient, who had some members of her family present. As has been my experience several times in the past, patients inquire about the gender of their unborn fetus. They also are curious regarding my experience, accuracy, and proficiency in determining a fetus genitalia. This particular patient was no exception. However, the way she posed the question was very new to me. With her husband, children, and in-laws watching the screen intently, she asked me, "Are you very good at sex?" The temptation was too much for me to bear. I paused for several moments and then replied, "Well, I've never had any complaints, but if you really want to know, you can call my wife." When she realized what she'd said, it was too late. We all got the best laugh and made several more jokes about it. It has been one of the funniest experiences I've ever had with patients and ultrasound.

On another occasion, under similar circumstances, I was scanning a woman for a 20-week study. The patient's family was present, including her husband and three children. In the middle of the examination, one of the younger siblings asked the mother, "Where do babies come from?" I anxiously waited for the mother's wise reply, hoping to gain some pearl for use with my own family. Just as she was ready to respond, the oldest child beamed in, "Oh, don't you know, they come from Friday night and Saturday morning activity." As you well might expect, mom, dad, and I had a chuckle over it. Now, whenever people ask, "Where do babies come from?," that's what I tell them.

Brad Watts, RDMS

I started my ultrasound career in 1981, learning my craft on a Technicare EDP1000 and a Picker 801L. Without real-time, the first obstetric examinations I performed, in which only fetal lie, placental position, cardiac activity, and BPD measurements were taken, took me as long or longer than it now takes to perform a level III examination. In 1982, however, the mobile company for which I worked provided me a with a Toshiba linear array. We weren't sure whether this real-time "fad" would persist or not, but we knew that we couldn't be without it, competitively speaking.

Annular array certainly enhanced the penetration and resolving capability of gray scale real-time imaging, but the most important change in the field of ultrasound (since the development of the digital scan converter) was ACUSON's introduction of the phased array transducer with selective transmit zone focusing. Color Doppler imaging (CDI) may have been considered an expensive luxury just 7 years ago, but I can't think of starting an examination today, whether it's abdominal, obstetric, cardiac, or vascular, without having it at least nearby. CDI as we know it today would not have been possible without ACUSON's contribution. (Don't get a big head ACUSON, what you did for me yesterday isn't nearly as important as what you, or your competitor, can do for me today.)

Customer satisfaction is the guiding force in all of medicine today, as managed care becomes the predominant producer of health care. Contracts will go to those institutions with the lowest cost and highest ratings in customer satisfaction. This trend is not just affecting the medical industry, but all industry in the United States. The "educated consumer" has grown accustomed to service excellence. What this means

to the field of diagnostic ultrasound is longer evening hours and opening for business on both Saturday and Sunday. Deal with it.

I first began to appreciate my profession when I presented a case for the first time, confident that I had correctly identified all structures and made the correct diagnosis. I realized for the first time the dynamic characteristic of diagnostic sonography, which separates it from all other imaging modalities. More and more, invasive procedures are being added to the sonographic inventory and will provide some room for expansion in the field, but the growth of the need for new technologists has surely lessened since its peak 5 years ago. I am not currently encouraging potential students. I am hopeful that this is only a momentary lull, due to the present crises we're in. I still believe, however, that only enough students to replace those leaving the field now should be encouraged to enter. This also may be a personal bias of mine, as I reside in an overly saturated area—Chicagoland.

David A. Bozarth, BS, RDMS, RDCS

I started in the field of ultrasound in 1975 with a bi-stable Picker machine and mineral oil for "gel." Two experiences I fondly remember involve the way in which we would look for structures and the mineral oil.

At the hospital where I worked at that time, we gave classes to the new OB-GYN residents so that they could pick up basic structures if they needed to do an emergency ultrasound at night. We would tell them, "just look for a straight line in the uterus, then turn up the gain to see if it fills in. If it does, that's the placenta."

When we used mineral oil, our hands were always greasy. The director of our radiology department would tell me that he always knew where I had been because I left a trail of oily fingerprints behind me!

Patty Moraino-Braga, RT, RDMS, RVT

During a retrospective of a career in a profession that for me was not a conscious selection but a purely serendipitous occurrence has brought back interesting memories.

In 1975, I had just about completed training as a radiologic technologist when I asked to be allowed to observe the one technologist who was in charge of the ultrasound examinations. Two months after grad-

uation, she left the hospital for a position in a private office, and I was catapulted into her position. Not by virtue of ability, but because I was the only other technologist in the department who had ever been near that equipment.

The intervening years have seen changes no less amazing than going from horseback to space flight. What do I remember? Scanning on a bistable, static-arm B-scanner with an oscilloscope and interrogating a cyst on A-mode as well as doing echoencephalography to check for midline shift. When we upgraded from 8 shades of gray to 16, the radiologist and I had to learn more detailed anatomy because we had never seen interior detail of the liver and had mistakenly identified the falciform ligament as a liver mass. Initially, we performed echocardiography sans two-dimensional Doppler or color and looked at all the squiggly M-mode lines and said, "that's a heart?"

The most memorable discussions during a seminar at a roundtable luncheon was not about the recent advances but about which was better: scanning black on white or white on black.

The registry examination itself has improved greatly. It took me 2 years of scanning to get up enough courage to sit for the abdomen specialty. I found the written examination not too strenuous; however, the hands-on was at first a daunting thought. I was fortunate in that I was allowed to scan on the same type of equipment that I used every day, and the technologist asked very straightforward questions. What almost undid me was the session of "reading" case studies with a physician. I do not remember his name, but I do remember that he was very friendly and that he corrected my mistakes and gave me the pertinent information so as to help me avoid the same mistake in the future. I passed him in the parking lot later, and his comment to me was, "see, it wasn't as bad as you thought." I waited with the same trepidation that anyone taking examinations has experienced and celebrated when I got "the" letter. I have since gone on to register in not only abdomen, but OB-GYN, vascular, and adult echo.

In my 20 years of scanning, I still find myself fascinated with the modality and excited by the changes that occur by leaps and bounds. What more could a profession offer than a chance to help in patient diagnosis/treatment, continual challenges to improve one's knowledge and technique, and something new and different on the horizon almost continuously. I hope that I find the next 20 years as interesting and fun as the first 20.

Pamela J. Chismar, RT, RDMS, RDCS, RVT

I was introduced to ultrasound in 1974. The medical center had just purchased a bi-stable B-mode articulated arm machine whose manufacturer I don't recall. I was a recent RT graduate and was working on becoming eligible to take the nuclear medicine registry. I was asked if I would like to learn ultrasound also. I agreed to learn but was not very impressed with the technology. Many times I found anatomy hard to find and equally as difficult to figure out what I was seeing. Pathology was extremely difficult or so I thought. Nuclear medicine remained my first love in those years.

New horizons began to open in 1977. The medical center purchased a Siemens B-mode articulated arm scanner. I could actually see organs and pathology and detail. It was wonderful! In 1978, our department received an ADR real-time portable unit with a 5-inch square screen. The screen was split down the middle so that two images could be put side by side. The first examination was of a woman who was about 8 weeks pregnant. The fetus was literally doing cartwheels as we watched. I was hooked! Ultrasound became my first love, and that love affair has only grown stronger over the years.

During the 20 years or so that I have been doing ultrasound, I have seen the technology become much more sophisticated with incredible detail. I have grown with these changes and have a deep appreciation for the ease of scanning detailed anatomy that today's equipment provides. The sonographer's technical skills and knowledge also have increased dramatically. As the ad says, "We've come a long way, baby!"

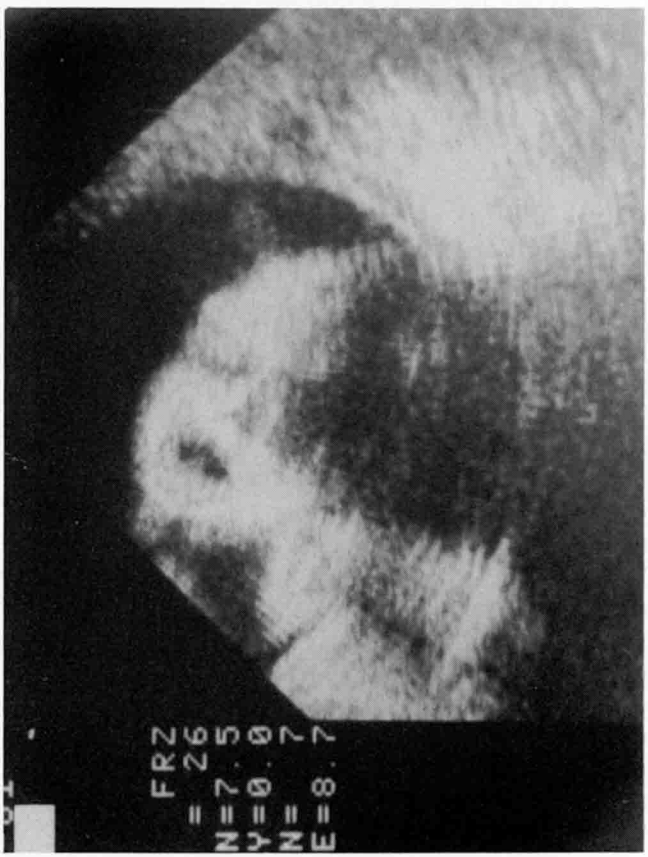
Gale Kennedy, BS, RDMS, CNMT, RT

In 1986, I was elected to the SDMS Board of Directors as the Regional Director for Region 5. The board meeting was to be held before the annual conference, which was in Orlando. My husband came to Orlando with me as a vacation. As I left to attend my first Board of Directors meeting, I naively told my husband that I would probably be about 3 hours, as I could not imagine what would be covered that could possibly take any longer. I met my husband 10 hours later, my head spinning with all the information that had just been covered. I learned there was a medical alphabet that needed to be learned (ACR, AIUM, JRC-DMS, etc.), and numerous committees to which reports were given, and in-

teractions with other professional societies, and current issues to be discussed, and, and, and. . . .

Over the years, as new board members approach their first meeting, I try to reassure them that the first meeting is the hardest, and that the information overload will eventually fall into place. The issues that are discussed will decide the future direction of the SDMS. As the years pass, the issues are complex and numerous. The SDMS Board of Directors now meets for 2 very full days in the spring and once again in the fall before the SDMS Annual Conference.

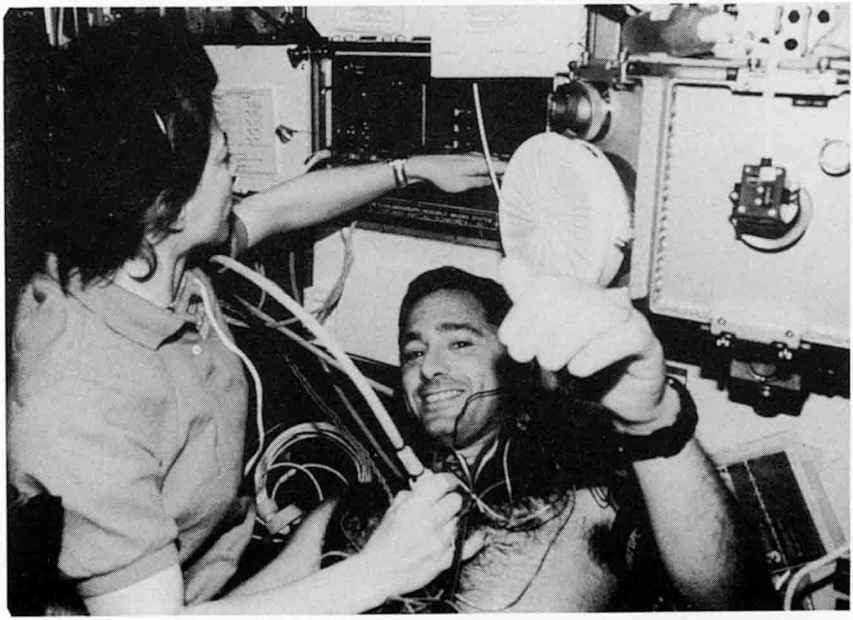
Gale Kennedy, BS, RDMS, CNMT, RT
SDMS Board of Directors
Region 5 Director, 1986 to 1989
Secretary, 1991 to 1993
Vice-President, 1993 to 1995



This fetal face was a real surprise! It was the first time Dr. Lambie and Dayna Hodgen, RDMS, ever believed they had seen this detail. Of course, the two had animated discussions, because Dr. Lambie initially wasn't so sure it was a face. Of course, the excitement of new equipment and being able to see never seen before structures just magnifies the energy of a sonographer. Dayna simply persisted. The conclusion was to show it to one and all because their new UniRad was now, in their eyes, the best thing you could own. The great joy of sharing a wonderful image obtained from new equipment is never lost. Of course, this was 1981 and "real time" was cutting edge.

Jeanette Burlbaw, BS, RDMS
SDMS Region 3 Director, 1993 to 1996

Ultrasound has been used for a number of years in the space program during pre- and post-flight investigations. Astronauts are also trained to perform echocardiographic studies on selected flights, including two flights scheduled for 1995. NASA flight-certified echo equipment is scheduled to fly to the Russian Air Space Station in 1995. Two-dimensional and Doppler echocardiography have been used to determine potential changes in cardiac dimensions, mass, and systolic and diastolic



function. Echo also is used to determine cardiac output during other procedures. In the near future, a three-dimensional ultrasound system will be flying primarily to determine if there is atrophy during prolonged space flight by calculating cardiac mass. Transcranial Doppler of the middle cerebral artery is used to assess perfusion of the brain during periods of possible orthostatic intolerance.

The equipment used in-flight is commercially available equipment that has been modified to meet the safety and power requirements of the shuttle.

Supplied by the National Aeronautics and Space Administration

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From the Editor's Desk (Reprinted from SDMS News Wave, May/ June, 1992)

Many of you have seen the motel advertisement that ends by saying "We'll leave the lights on for you." It's a homey touch, and one of my favorites. I like to think SDMS has some of the same philosophy, with the right marriage of hospitality and professionalism. We'll do our best to take care of you. If you need it, hopefully we have it. If we don't already have it, we'll try to get it for you.

We are now just on the brink of reaching the historic 10,000 member mark. We're gearing up for a move to larger office space and for all involved, this is an exciting, progressive change. For me personally, this is yet another milestone in my tenure with a dynamic organization made up of a wonderful group of people. It's a personal challenge to continue on the fast track without sacrificing the human touch as SDMS becomes larger and more "high tech."

Together, we are succeeding.

In my eight years with SDMS, I've watched elected leadership make thoughtful, proactive decisions. For those members in the position of volunteer elected leadership it is often challenging, requiring time and energy and the ability to put personal feelings aside for the good of the Society. SDMS leaders *listen* to members.

Every day I see evidence of members supporting the Society, not just with dues, but through real, grass roots involvement. If you read "Sonographer Spotlight" you know there are members out there making a difference in their workplace, their community and their family. Many of you take the time to write or phone and respond to issues. You may think one letter or phone call doesn't make much difference, but each and every member's opinion is valued.

At this height of growth and expansion it would be very easy to get into a groove and develop a sterile, unapproachable environment . . . but that's not what SDMS is about. It isn't just a collection of 10,000 individuals with a common interest in a dynamic industry. It goes deeper than that. Each of you has your own contributions to make in your own daily professional life, and that is what SDMS is for . . . to help you do that in the best possible way.

So, here's to each of you and the next 10,000 members. Call us when you need us. . . .

Gwen Grim, MBA
Executive Director

This is the beginning 55 lines of code and 3 resulting graphic printouts for the initial version of BASIC BABY, by Terry J. DuBose, RDMS. This is believed to be the first multiple fetal parameter size/age analysis program for personal computers. This program was conceived and begun in 1982 and shows the first graph ever plotted of the growth of the cranial volume (CV) for the human fetus. This was the program used for the early CV research which was subsequently published in 1985.[1] In 1986, the Society of Diagnostic Medical Sonographers recognized the research by awarding the Kenneth Gottesfeld Award.[2]

The original BASIC BABY was programmed and ran on a Sinclair ZX81 computer with 2K of RAM (later upgraded to 64K), and all code and data had to be saved to an audio-cassette recorder. This system was not failsafe, and many hours were spent recoding lost programs. The accompanying printout was from a 1983 version. The language was Sinclair Basic, thus the name BASIC BABY. Subsequent versions were programmed for IBM-compatible computers using Microsoft Basic and named BASIC BABY II.

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1. DuBose TJ: Fetal Biometry: Vertical Calvarial Diameter and Calvarial Volume. J Diagnostic Medical Sonography 1985;1:205–217.
2. Berman MC (Editor): Winners of the 1986 Kenneth Gottesfeld Awards for Outstanding Papers Published in the Journal of Diagnostic Medical Sonography. J Diagnostic Medical Sonography 1986;2:181–182.

Terry DuBose, BBA, RDMS

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 100 REM      BASIC  BABY©
 110 REM    TERRY J DuBOSE
 120 REM  MIND'S EYE IMAGES©
 130 REM    3606 GROOMS ST.,
 140 REM  AUSTIN, TEXAS 78705
 150 REM      (512) 472-1005
 160 REM          PEACE
 200 BORDER 4
 210 REM    VARIABLES
 220 LET Z$="BBBBBBBBB  BASIC BA
BY © BBBBBBBB"
 230 REM N = ARRAY# 1-100,B(1,N)
 232 REM M = MEASURE#1-14,B(M,1)
 234 REM E = ERROR PROMPT
 236 REM X = GRAFICS COUNTER
 238 REM F = FETAL SEX PROMPT
 240 REM P = PATIENT PLOT COUNT
 242 REM A = MENU PROMPT
 244 REM 0$= MENU PROMPT
 246 REM E$= ERROR PROMPT
 500 BORDER 4
 600 REM  MENU MENU WOMENU MENU
 602 LET A=0
 605 CLS
 610 FOR X=0 TO 21: PRINT Z$: NE
XT X
 620 PRINT AT 2,4;" Welcome to B
ASIC BABY © "
 622 PRINT AT 3,14;" by ": PRINT
 AT 4,6;" MIND'S EYE IMAGES © "
 625 PRINT AT 5,9;" 3606 Grooms
St.": PRINT AT 6,6;" Austin, Tex
as 78705 ": PRINT AT 7,8;" (512)
    472-1005 "
 630 PRINT AT 8,13;" PEACE ": PR
INT AT 9,12;" M E N U "
 640 PRINT AT 11,2;" 1. ENTER AL
L NEW DATA."
 642 PRINT AT 13,2;" 2. ADD MORE
 DATA TO ARRAY."
 644 PRINT AT 15,2;" 3. SEE DATA
 IN ARRAY."
 646 PRINT AT 17,2;" 4. VIEW DAT
A AS A GRAPH."
 670 INPUT "ENTER ITEM NUMBER OF
 CHOICE.";A
 680 IF A=4 THEN GO TO 2000
 690 IF A=2 THEN GO SUB 8100: GO
 TO 725
 695 IF A=3 THEN GO TO 4000
 699 IF A=1 THEN INPUT "Are you
sure? This selection    will err
ase all data currently  in memor
y! Y-N?";0$: IF 0$<>"Y" THEN GO
TO 600
 700 REM      CALL DATA
 702 REM       DIM ARRAY
 705 DIM B(14,100)
 710 PRINT Z$
 720 FOR N=1 TO 100
 725 CLS
 727 PRINT "# ";N
 730 INPUT "PT'S NUMBER? (<7 DEG
ITS)";B(1,N)
 740 PRINT "  ENTER ALL MEASURME
NTS IN mm."
 750 PRINT Z$
 760 INPUT "ENTER PT'S LMP.";B(2
,N): INPUT "ENTER AVER.AGE.";B(3
,N): INPUT "ENTER AGE SPREAD.";B
(4,N)
 770 INPUT "ENTER GEST.SAC.DIA."
;B(5,N): INPUT "ENTER CROWN-RUMP
 LENGTH.";B(6,N)
 780 INPUT "ENTER LSD.";B(7,N):
INPUT "ENTER BPD.";B(8,N): INPUT
 "ENTER PVD.";B(9,N)
 790 INPUT "ENTER FEMUR LENGTH."
;B(10,N): INPUT "ENTER HUMERUS L
ENGTH.";B(11,N): INPUT "ENTER AB
DOMINAL CIRCUMFERENCE.";B(12,N)
 795 INPUT "ENTER FETAL HEART RA
TE.";B(13,N)
 797 INPUT "ENTER FETAL SEX.(F=1
,M=2,?=0)";B(14,N)
 800 REM    VIEW  DATA
 810 CLS
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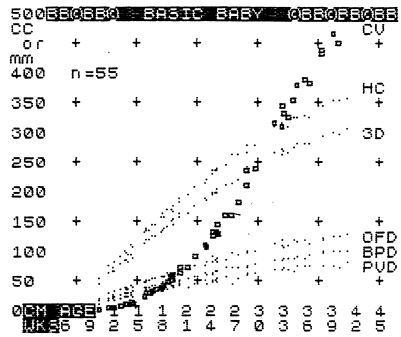
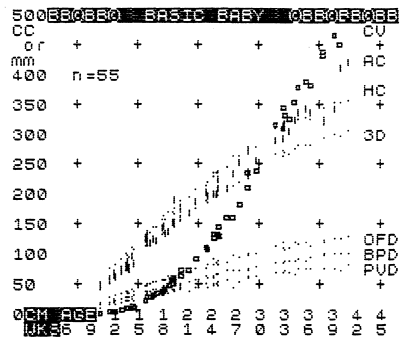
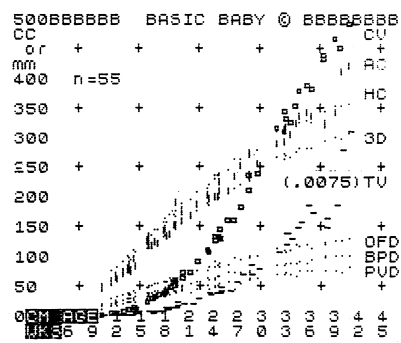






In 1982, I began formal training in ultrasound. At the school I attended, we used a Phillip's B-scanner, an ATL linear real-time machine, and a new "state of the art" Diasonics real-time machine. At school, one became proficient in the art of B-scanning.

At my first employment, we performed echocardiograms on a Diasonics real-time machine (better known as the fridge because it was the size of one). We strictly did two-dimensional and M-mode imaging. Doppler and color imaging came much later.

As you can see, ultrasound is a rapidly changing profession and we must stay educated, updated, and current so we are able to change with it.

Jean Lynch, RT, RDMS, RDCS
Oshkosh, Wisconsin

Sonography has become an integral part of my life. To me, it is an actual visionary approach to revealing existing reality. I am proud to be a part of it.

April 3, 1989, was one the most indecisive days of my life. I had received a Bachelor's degree in botany, zoology, and chemistry, and didn't know whether I wanted to continue studying for a Master's degree. I always had a fascination for medicine and had daydreamed about a career in the field for many years. A friend of mine, a sonographer, stopped by and advised me to get into the profession. She told me that there was an opening at her hospital, and that they were willing to train someone in sonography. I went for an interview on the April 9 and found myself working in the Department of Imaging on April 10, trying to make sense of some black and white specks. My first thought was "can I ever learn this thing." But then, in a span of a few months, I was scanning confidently and had realized I had chosen a profession made for me. I worked in this hospital in India from April 1989 to December 1993, moving from the lowest to the highest levels, and also doing lithotripsy. Toward the end of 1992, I decided I wanted a formal degree and came to America in December 1993 for this purpose, as no course was offered in India. It was a very difficult decision, as I also had an opportunity to study for a Master's degree in Health Administration. Ultrasound, however, had become a part of me. The ultrasound machine I worked on had become my pet. Here I stand today, September

1995, ready to take my boards and looking toward the end of my course. Ultrasound turned my life around. I realize the importance of the registry and how it changed my plans.

Sharanya Reddy

I saw my first sonogram in 1979 when I was an x-ray student. The radiologist was doing an obstetric examination, and it was a boy baby. It was so incredible, I knew I wanted to be a part of the technology. I started doing sonos in 1982, using a Rohe and an ATL for real time. The Rohe was time-consuming, and kidneys were the hardest for me.

The biggest impact was Doppler. The sky is the limit with Doppler technology.

Patients want their entire family involved now—they call it "bonding." We call it ridiculous—it's a diagnostic examination, not a party.

Computer technology is way ahead of transducer technology. I expect the probes to change—small, hand-held probes with no cords—like a remote. There will be no films or videotape—everything will be stored digitally. All hospitals will be linked together, and an image will be able to be transferred immediately to a tertiary center for consultation.

I knew sonography was going to have a big future when I saw my first sono.

Mary Winkler, BS, RT, RDMS, RVT

Vic Wedel has come a long way. You could say he got his start in diagnostic imaging somewhat by "accident."

It was the summer of 1970. Wedel was working on a highway construction crew on the Harbor Freeway in southern California when he was involved in an accident that sent him to the hospital. As he laid on the x-ray table in the clean, air-conditioned radiology imaging room, he compared his hot, dirty, and dangerous working conditions with those of the technologist who was taking his x-rays.

Two weeks later, Wedel had enrolled in the x-ray program at Fullerton College in Fullerton, California. He saw his first ultrasound image

while working as an intern at Brea Community Hospital in 1974. That same year, he began formal training in ultrasound and conducted his first ultrasound examination.

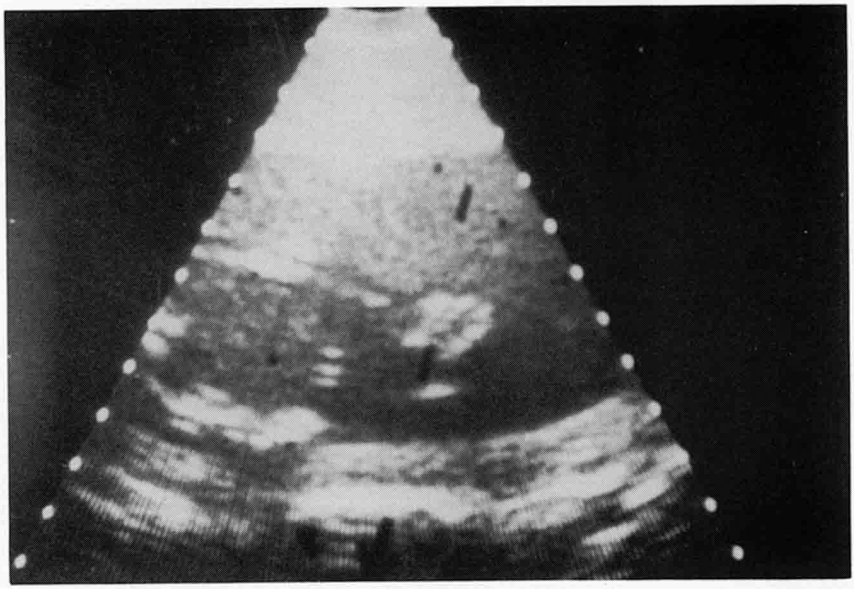
"Looking back on my start in ultrasound, I feel very fortunate to have had the opportunity to learn from some of the leading names in ultrasound's early clinical days. I remember taking my first short course in ultrasound from Sandy Hagen-Ansert at Glendale Memorial Hospital just before she moved to Philadelphia to work with Dr. (Barry) Goldberg. At French Hospital in San Luis Obispo, I had the good fortune to learn the fundamentals of sonography from Don King, MD, of Columbia Presbyterian Hospital in New York. I also was very lucky to have been able to work under the leadership of Ms. Kitty (Filly) Kisslo, formerly of Stanford, and Barbara Carroll, MD, also from Stanford. The instruction and encouragement that I received from all of my early teachers and colleagues provided me with fantastic building blocks for my career in ultrasound. I have not forgotten the valuable early experiences for which I am truly grateful."

"I'll never forget the day I performed my first solo ultrasound examination. It was an M-mode cardiac examination using a Picker A-B and M-mode machine. In those days, there was no such thing as real-time. Back then, we would put the lights down so you could see the imaging screen better. In this case, I turned the lights way down, so the patient wouldn't notice that resting on my lap was a textbook, which I was using to identify anatomy as I imaged with my right hand. I managed to make it through the examination, and, from that day forward, there was nowhere to go but up."

In 1977, shortly after co-founding the Society of Vascular Technology (SVT), Wedel left the peripheral vascular and ultrasound laboratory he started for Dr. Thomas Fogarty in the Stanford Medical Complex.

Wedel moved from California to an Amish farmhouse in Kalona, Iowa (which, until he moved in, had no electricity). As chief technologist and director of education of the ultrasound facility at the University of Iowa Hospitals and Clinics, Wedel started the school's first ultrasound curriculum.

In 1976, before moving to Iowa, Wedel envisioned a device that would attach to an ultrasound probe and make amniocentesis procedures safer and easier under ultrasound guidance. The concept became the RNG (Real-time Needle Guide) series, the world's first real-time needle/biopsy instrument and catheter guide system. Wedel patented it and started his company, CIVCO Medical Instruments. Today CIVCO is a leading supplier of customized ultrasound accessory products to

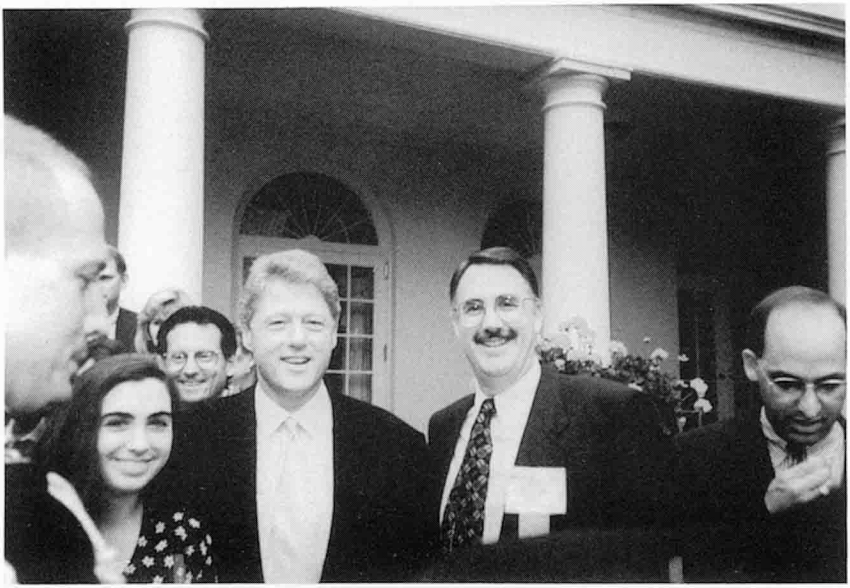


Vic Wedel recorded this one-in-a-million ultrasound image in 1979 at the University of Iowa Hospitals and Clinics, using his patented RNG needle guide. Notice the hand of the fetus actually grasping the amniocentesis needle!

ultrasound manufacturers, hospitals, clinics, and private offices worldwide.

Five years ago, Wedel established the CIVCO CENT$ (Continuing Education Network and Training $upport) program, which provides SDMS members with continuing education funding. Wedel also established the annual CIVCO/SDMS Innovation in Ultrasound Award, recognizing the outstanding contributions of an SDMS member to the field of ultrasound. "The CENT$ program and the Innovation Award are CIVCO's way of giving back to the fantastic professionals that represent the future of ultrasound. We hope to continue to cooperate with professional societies such as the SDMS to offer more and better products and services to the ultrasound community. As a sonographer myself, I have an understanding of the importance of educational support and recognition for ultrasound professionals."

Wedel and CIVCO have been recognized for business success by a number of organizations, including Inc. Magazine and the United States Small Business Administration, naming Wedel as Iowa's Small Business Person of the Year and the Midwest Entrepreneur of the Year. His



Wedel's business success sent him to Washington, DC, to be recognized by President Clinton in a special White House Rose Garden reception for United States business leaders.

achievements sent him to Washington, DC, where he met with President Clinton and shared his views on business and healthcare.

From California roadcrew to an Amish farmhouse in Kalona, Iowa, to an executive office in his growing company, to the White House Rose Garden, Vic Wedel has come a long way. Wedel remarks that his success are "all thanks to radiology, ultrasound, and the outstanding imaging professionals that are the backbone of diagnostic medical imaging."

Victor J. Wedel, RT, RDMS
President/CEO
CIVCO Medical Instruments

Textbook of Diagnostic Ultrasonography
Mosby, 1978

Medicine has always been a fascinating field. I was introduced to it by Dr. Charles Henkelmann, who provided me with the opportunity to learn radiography. Although x-ray technology was interesting, it was not challenging enough. It did not provide the opportunity to evaluate

patient history or to follow through interesting cases, which seemed to be the most intriguing aspect of medicine and my primary concern.

Shortly after I finished my training, I was assigned to the radiation therapy department, where I was introduced to a very quiet and young, dedicated radiologist, whom I would later grow to admire and respect as one of the foremost authorities in diagnostic ultrasound. Convincing George Leopold that he needed another hand to assist him was difficult in the beginning and it was through the efforts of his resident, Dan MacDonald, that I was able to learn what has eventually developed into a most challenging and exciting new medicine modality.

Utilizing high-frequency sound waves, diagnostic ultrasound provides a unique method for visualization of soft tissue anatomic structures. The challenge of identifying such structures and correlating the results with clinical symptoms and patient data offered an ongoing challenge to the sonographer. The state of the art demands expertise in scanning techniques and maneuvers to demonstrate the internal structures; without quality scans, no diagnostic information can be rendered to the physician.

Our initial experience in ultrasound took us through the era of A-mode techniques, identifying aortic aneurysms through pulsatile reflections, trying to separate splenic reflections from upper-pole left renal masses, and, in general, trying to echo every patient with a probable abdominal or pelvic mass. Of course, the one-dimensional A-mode techniques were difficult for me to conceptualize, let alone believe in. However, with repeated success and experience from mistakes, I began to believe in this method. The conviction that Dr. Leopold had about this technique was a strong indicator of its success in our laboratory.

It was when Picker brought our first two-dimensional ultrasound unit to the laboratory that the "skeptics" started to believe a little more in this modality. I must admit that those early images were weather maps to me for a number of months. The repeated times I asked, "What is that?" were enough to try anyone's patience.

I can recall when Seimens installed our real-time unit and we saw our first obstetric case. Such a thrill for us to see the fetus move, wave its hand, and show us fetal heart pulsations.

By this time we were scouting the clinics and various departments in the hospital for interesting cases to can. With our success rate surpassing our failures, the case load increased so that soon we were involved in all aspects of ultrasound. There was not enough material or reprints for us to read to see the new developments. It was for this reason that excitement in clinical research soared, attracting young phy-

sicians throughout the country to develop techniques in diagnostic ultrasound.

Because Dr. Leopold was so intensely interested in ultrasound, it became the diagnostic method of choice for our patients. It was not long before conferences were incomplete without the mention of the technique. Later, local medical meetings and eventually national meetings grew to include discussion of this new modality. A number of visitors were attracted to our laboratory to learn the technique, and thus we became swamped with a continual flow of new physicians, some eager to work with ultrasound and others skeptical at first but believers in the end.

Education progressed slowly at first, with many laboratories offering a one-to-one teaching experience. Commercial companies thought the only way to push the field was to develop their own national training programs, and thus several of the leading manufacturers were the first to put a dedicated effort into the development of ultrasound.

It was through the combined efforts of our laboratory and commercial interests that I became interested in furthering ultrasound education. Seminars, weekly sessions, local and national meetings, and consultations became a vital part of the growth of ultrasound.

Thus, as ultrasound grew in popularity, more intensified training was desperately needed to maintain its initial quality that its pioneers strived for.

Through working with one of the commercial ultrasound companies conducting national short-term training programs, I became acquainted with Barry Goldberg and his enthusiasm for quality education in ultrasound. His organizational efforts and pioneer spirit led me to the east coast to further develop more intensive educational programs in ultrasound.

Sandra Hagen-Ansert, BS, RDMS

Appendix of Officers ASUTS/SDMS

Presidential Roster (1970 to 1995)

Joan Baker, MSR, RDMS
Providence Hospital
Seattle Washington

Seattle University
Seattle Washington

Bellevue Community College
Bellevue, Washington

Shael Harris, RT, RDMS
University of Oklahoma Health Sciences Center
Oklahoma City, Oklahoma

Pat Nuss, RN, RDMS, RDCS
North Carolina Baptist Hospital
Winston-Salem, North Carolina

Shirley Staiano, BS, RDMS
Downstate Medical Center
New York, New York

Marveen Craig, AA, RDMS
University of California
San Francisco, California

University of South Alabama
Mobile, Alabama

Sandra Hagen-Ansert, BA, RT, RDMS, RDCS
University of California
San Diego, California

University of Wisconsin
Madison, Wisconsin

Kathleen McDiarmid, MA, RT, RDMS, RDCS
Winnipeg Health Sciences Center
Winnipeg, Manitoba, Canada

British Columbia Institute of Technology
Vancouver, British Columbia, Canada

Nici Leibovitz, RT, RVT, RDMS, RDCS
Porter Hospital
Denver, Colorado

Jackie Carlson, BA, RDCS, RDMS*
Sonographer Services
Richardson, Texas

Jean Lea-Spitz, MPH, RDMS
Oklahoma University
Oklahoma City, Oklahoma

Diane Kawamura, PhD, RT, RDMS*
Weber State University
Ogden, Utah

Reva Curry, PhD, RT, RDMS
Thomas Jefferson University
Philadelphia, Pennsylvania

Beth Anderhub, MEd, CNMT, RT, RDMS
St. Louis Community College at Forest Park
St. Louis, Missouri

* *Two and a half-year terms because of a change in the annual meeting time.*

ASUTS Executive Board 1970 to 1972

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Joan P. Baker, MSR, RDMS
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Pat Lamb, BS, RDMS
Advisor
Ross Brown, MD
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Bernadine Kovaleski
Region 2
Kathleen McDiarmid, MA, RT, RDMS, RDCS
Region 3
Georgina Wodraska, RDMS
Region 4
Roy Reynolds
Region 5
Bob Curry, RDMS, RVT
Region 6
Lee Kroll, RDMS (deceased)

ASUTS Executive Board 1972 to 1973

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Shael Harris, RT, RDMS
Pat Nuss, RN, RDMS, RDCS

President-Elect
Shirley Staiano, BS, RDMS

Vice-President
Pat Nuss, RN, RDMS
Secretary/Treasurer
Pat Lamb, BS, RDMS
Advisor
Ross Brown, MD

ASUTS Executive Board 1973 to 1974

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President-Elect
Shirley Staiano, BS, RDMS
Vice-President
No replacement
Secretary/Treasurer
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Advisor
Ross Brown, MD
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Bernadine Kovaleski
Region 2
Kathleen McDiarmid, MA, RT, RDMS, RDCS
Region 3
Georgina Wodraska, RDMS
Region 4
Roy Reynolds
Region 5
Bob Curry, RDMS, RVT
Region 6
Lee Kroll, RDMS (deceased)

ASUTS Executive Board 1974 to 1976

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Shirley Staiano, RDMS

President-Elect
Marveen Craig, AA, RDMS

Vice-President
Pat Lamb, BS, RDMS

Secretary/Treasurer
David Love

Advisor
Ross Brown, MD

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Region 2
Gene Charney, RT, RDMS
Region 3
Ellen Campos, BS, RN, RDMS
Region 4
Karen Templeton, RT, RDMS
Region 5
Bob Curry, RDMS, RVT
Region 6
James Willard, RDMS

ASUTS Executive Board 1976 to 1978

President
Marveen Craig, AA, RDMS

President-Elect
Sandra Hagen-Ansert, RT, BA, RDMS, RDCS

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John Forsythe, RDMS, RVT, RDCS
Fred Chavez, RDMS, RDCS, RVT

Secretary
Linda O'Donnell

Treasurer
Fred Chavez, RDMS, RDCS
Fred Gentry, RT,RDMS

Advisor
Richard Meyer, MD

Executive Secretary
Karen Templeton, RT, RDMS

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Wilhelmenia Williams
Joan Shirk
Region 2
Cliff Williams, RDCS
Region 3
L. Allen Pittman
Region 4
Kerry Hunt
Region 5
Barbara Karpell
Region 6
Lewis Shontell, RDMS
Region 7
Joan Persaud, RDMS
Region 8
Denis Gratton, RT, RDMS, RDCS

Regional Directors (1977)
Region 1
Joan Shirk
Region 2
Cliff Williams, RDCS
Region 3
Jackie Carlson, BA, RDCS, RDMS
Region 4
Kerry Hunt
Region 5
Denise Moulton (Levy), RT, RDMS
Region 6
Lewis Shontell, RDMS
Region 7
Derrell Barkman, RT, RDMS
Region 8
Denis Gratton, RT, RDMS, RDCS

SDMS Executive Board 1978 to 1980

President
Sandra Hagen-Ansert, BA, RT, RDMS, RDCS
Vice-President
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Secretary
Joan Shirk
Treasurer
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President-Elect
Kathleen McDiarmid, MA, RT, RDMS, RDCS
Past President
Marveen Craig, AA, RDMS
Advisors
Richard Meyer, MD
Eric Blackwell, MD
Regional Directors (1978)
Region 1
Nanette Grandjean (Skully)
Region 2
Nici Herrig (Leibovitz), RT, RVT, RDMS, RDCS
Region 3
John Geshner, BA, RDMS, RDCS
Region 4
Joyce Edwards
R. Ryan, BS, RT, RDMS, RDCS, RVT
Region 5
Jocelyn Champagne
Region 6
Roy Soares, BS, RDMS, RDCS
Region 7
Derrell Barkman, RT, RDMS
Region 8
Doug Shaw, RT, RDMS, RDCS
Regional Directors (1979)
Region 1
Joan Shirk
Region 2
Cliff Williams, RDCS
Region 3
L. Allen Pittman, RDMS
Region 4
Kerry Hunt
Region 5
Denise Moulton (Levy), RT, RDMS
Region 6
Lewis Shontell
Region 7
Derrell Barkman, RT, RDMS
Region 8
Denis Gratton, RDMS, RDCS

SDMS Executive Board 1980 to 1982

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Kathleen McDiarmid, MA, RT, RDMS, RDCS
President-Elect
Nici Herrig (Leibovitz), RT, RV, RDMS, RDCS
Vice-President
Linda O'Donnell
Secretary
Jackie Carlson, BA, RDCS, RDMS
Treasurer
Fred Gentry, RT, RDMS
Advisors
Fred Kremkau, PhD
Faye Laing, MD
Past President
Sandra Hagen-Ansert, BA, RT, RDMS, RDCS
Executive Director
Marveen Craig, AA, RDMS

Regional Directors

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Gretchen Bjornton, RDMS
Region 2
Peggy Chilton
Region 3
Mary Berg, RT, RDMS, RDCS
Region 4
Sharon McLain, RDMS
Region 5
James Ryva, BS, RT, RDMS
Region 6
Mike Marsh, AS, RT, RDMS, RVT
Region 7
Liz Lawrence, RDMS
Region 8
Pat Donnelly, RT, RDMS, RDCS
Region 9
Mary Anne Alexander, RT, RDMS
Region 10
Sandy Lindahl, RT, RDMS

1981 Executive Board same as 1980

Regional Directors

Region 1
Gretchen Bjornton, RDMS
Region 2
Gary Tillotson, RDMS
Region 3
Diane Kawamura, PhD, RT, RDMS
Region 4
Sharon McLain, RDMS
Region 5
Suzanne Novoselac
Region 6
Gloria Brewster, RT, RDMS
Region 7
Michael Marsh, AS, RT, RDMS, RVT
Region 8
Liz Lawrence, RDMS
Region 9
Judith Ann Dunn, RT, RDMS
Region 10
John Hartwell, RT, RDMS, RDCS
Region 11
Pat Nealey, RDMS
Region 12
Mary Anne Alexander, RT, RDMS
Region 13
Sandy Lindahl, RT, RDMS

SDMS Executive Board 1982 to 1983

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Nici Leibovitz, RT, RVT, RDMS, RDCS
President-Elect
Jackie Carlson, BA, RDCS, RDMS
Vice-President
Sharon McLain, RDMS
Secretary
Gretchen Bjornton, RDMS
Treasurer
Michael Marsh, AS, RT, RDMS, RVT
Past President
Kathleen McDiarmid, MA, RT, RDMS, RDCS
Advisors
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Larry Platt, MD
Terry Silver, MD
Regional Directors

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Heidrun Eberhardt, RDMS

Region 2
Linda Incardine
Region 3
Diane Kawamura, PhD, RT, RDMS
Region 4
Marilyn Harrell
Region 5
Suzanne Novoselac
Region 6
Gloria Brewster
Region 7
Linda Gordon, RT, RDMS
Region 8
Jeannetta Daniels
Region 9
Judith Dunn
Region 10
John Hartwell, RT, RDMS
Region 11
Pat Nealey, RDMS
Region 12
Margaret MacDonald, RDMS
Region 13
Sandi Lindahl, RT, RDMS

1983 Executive Board same as 1982

Regional Directors

Region 1
Heidrun Eberhardt, RDMS
Region 2
Linda Incardine, RT, RDMS
Region 3
Diane Kawamura, PhD, RT, RDMS
Region 4
Marilyn Harrell
Region 5
Joe Rodriguez, RT, RDMS
Region 6
Gloria Brewster, RT, RDMS
Region 7
Linda Gordon, RT, RDMS
Region 8
Jeannetta Daniels
Region 9
Patricia Donnelly, RT, RDMS, RDCS
Region 10
Debbie Frisicco, RDMS
Region 11
Mary Penry, RN, RDMS
Region 12
Margaret MacDonald, RDMS
Region 13
Shirley Klisowsky, RT, RDMS

SDMS Executive Board 1984 to 1985

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Jackie Carlson, BA, RDCS, RDMS
President-Elect
Jean Lea Spitz, MPH, RDMS, RDCS
Vice-President
Diane Kawamura, PhD, RT, RDMS
Secretary
Joe Rodriquez, RT, RDMS
Treasurer
Marie DeLange, AS, RT, RDMS, RDCS
Past President
Nici Leibovitz, RT, RVT, RDMS, RDCS

Advisors
Tom Jones, MD
William O'Brien, PhD

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Heidrun Eberhardt, RDMS

Region 2
Diane Kawamura, PhD, RT, RDMS*
Tim Thigpen, BS, RT, RDMS, RDCS
Region 3
Diane Kawamura, PhD, RT, RDMS*
Region 4
Marilyn Harrell
Kirstin LaConte, RT, RVT, RDMS
Region 5
Joe Rodriguez, RT, RDMS*
Gloria Brewster, RT, RDMS
Region 6
Gloria Brewster, RT, RDMS
Region 7
Linda Gordon, RT, RDMS
Region 8
Rose DiBartolomeo
Region 9
Patricia Donnelly, RT, RDMS
Region 10
Trudy Dubinsky, BS, RDMS, RDCS (deceased)
Region 11
Mary Penry, RN, RDMS
Region 12
Peggy Reid, RT, RDMS, RVT
Region 13
Vicki Scudamore, AS, RT, RDMS

1985 Executive Board same as 1984

Regional Directors

Region 1
Heidrun Eberhardt, RDMS
Region 2
Tim Thigpen, BS, RT, RDMS, RDCS*
Region 3
Tim Thigpen, BS, RT, RDMS, RDCS*
Region 4
Kirstin LaConte, RT, RVT, RDMS
Region 5
Gloria Brewster, RT, RDMS*
Region 6
Gloria Brewster, RT, RDMS*
Region 7
Linda Gordon, RT, RDMS
Region 8
Rose DiBartolomeo
Region 9
Patricia Donnelly, RT, RDMS
Region 10
Trudy Dubinsky, BS, RDMS, RDCS (deceased)
Region 11
Mary Penry, RN, RDMS
Region 12
Peggy Reid, RT, RDMS, RVT
Region 13
Vicki Scudamore, AS, RT, RDMS

** When elected to office, appointments were made for their replacements. This later served as the pilot for reducing the number of regional directors. Replacements were appointed because Kawamura and Rodriguez were elected to the Executive Board.*

SDMS Executive Board 1986

President
Jackie Carlson, BA, RDMS, RDCS
President-Elect
Jean Lea Spitz, MPH, RDMS
Vice-President
Diane Kawamura, PhD, RT, RDMS
Secretary
Joe Rodriguez, RT, RDMS
Treasurer
Marie DeLange, BS, RT, RDMS, RDCS
Past President
Nici Liebovitz, RT, RVT, RDMS, RDCS

Advisor
William O'Brien, PhD
Regional Directors
Region 1
Sharon Roberts, RDMS
Region 2
Jessica Bogni, RDMS
Region 3
Cathy Smith, BS, RDMS
Region 4
Jeanette Burlbaw, BA, RT, RDMS
Region 5
Gale Kennedy, BS, RDMS
Region 6
Rima Block, BA, RDMS, RT, RDCS
Region 7
Diane Black, RDMS

SDMS Executive Board 1987

President
Jean Lea Spitz, MPH, RDMS, RDCS
President-Elect
Diane Kawamura, PhD, RT, RDMS
Vice-President
Marie DeLange, BS, RT, RDMS, RDCS
Secretary
Reva Curry, PhD, RT, RDMS
Treasurer
Louise Berlin, BA, RDMS
Past President
Jackie Carlson, BA, RDCS, RDMS
Advisor
Sid Edelman, PhD
Regional Directors
Region 1
Sharon Roberts, RDMS
Region 2
Jessica (Bogni) Schenck, RT, RDMS
Region 3
Barbara Sovde-Pennell, AS, RT, RDMS
Region 4
Beth Anderhub, MEd, RT, CNMT, RDMS
Region 5
Gale Kennedy, BS, RDMS
Region 6
Kathy Gill, RT, RDMS
Region 7
Diane Black, RT, RDMS

1988 Executive Board same as 1987

Regional Directors
Region 1
Sharon Roberts, RDMS
Region 2
Ellen Donovan, BS, RDMS, RDCS
Region 3
Barbara Sovde-Pennell, AS, RT, RDMS
Region 4
Beth Anderhub, MEd, RT, CNMT, RDMS
Region 5
Gale Kennedy, BS, RDMS
Region 6
Kathy Gill, RT, RDMS
Region 7
Karen Hughes, RT, RDMS, RDCS

SDMS Executive Board 1989

President
Diane Kawamura, PhD, RT, RDMS

President-Elect
Reva Curry, PhD, RT, RDMS

Vice-President
Beth Anderhub, MEd, RT, CNMT, RDMS

Secretary
Kathy Gill, RT,RDMS

Treasurer
Diana Kawai (Yankowitz), RDMS, RDCS

Past President
Jean Lea Spitz, MHP, RDMS, RDCS

Advisor
Sid Edelman, PhD

Regional Directors

Region 1
Cathy Carr-Hoefer, BS, RT, RDMS, RDCS, RVT

Region 2
Ellen Donovan, BA, RDMS

Region 3
Barbara Sovde-Pennell, AS, RT, RDMS

Region 4
Roger Warner, MS, RDMS

Region 5
Kathleen Ritch (Schlauch), BA, RT, RDMS

Region 6
David Adams, AS, RDCS, RCVT

Region 7
Karen Hughes, RT, RDMS

1990 Executive Board same as 1989

Regional Directors

Region 1
Cathy Carr-Hoefer, AS, RT, RDMS, RDCS, RVT

Region 2
Julia Drose, RT, RDMS, RDCS

Region 3
Jan Bryant, BS, RT, RDMS

Region 4
Roger Warner, MS, RDMS

Region 5
Kathleen Ritch (Schlauch), BA, RT, RDMS

Region 6
David Adams, AS, RDCS

Region 7
Karen Hughes, RT, RDMS

SDMS Executive Board 1991

President
Reva A. Curry, PhD, RT, RDMS

President-Elect
Beth Anderhub, MEd, RT, CNMT, RDMS

Vice-President
Linda Gordon, RT, RDMS

Secretary
Gale Kennedy, BS, RDMS

Treasurer
Roger Warner, MS, RDMS

Past President
Diane Kawamura, PhD, RT, RDMS

Regional Directors

Region 1
Cathy Carr-Hoefer, RT, RDMS

Region 2
Julia Drose, BA, RT, RDMS

Region 3
Jan Bryant, MS, RT, RDMS

Region 4
Linda Ontko, MEd, RVT, RDMS

Region 5
Kathleen Ritch (Schlauch), BS, RT, RDMS

Region 6
David Adams, RCVT, RDMS

Region 7
Diane Black, RT, RDMS

1992 Executive Board same as 1991

Regional Directors

Region 1
Joan Baker, MSR, RDMS

Region 2
Julia Drose, BA, RT, RDMS

Region 3
Jan Bryant, MS, RT, RDMS

Region 4
Linda Ontko, MEd, RVT, RDMS

Region 5
Stephen McLaughlin, BS, RT, RDMS

Region 6
Charlotte Brookshire-Quinn, RDMS

Region 7
Diane Black, RT, RDMS

SDMS Executive Board 1993

President
Beth Anderhub, MED, CNMT, RT, RDMS

President-Elect
Roger Warner, MS, RDMS

Vice-President
Gale Kennedy, BS, RDMS

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Treasurer
Terry J. DuBose, BBA, AS, RT, RDMS

Past President
Reva A. Curry, PhD, RT, RDMS

Regional Directors

Region 1
Joan Baker, MSR, RDMS

Region 2
Julia Drose, BA, RT, RDMS

Region 3
Jeanette Burlbaw, BS, RDMS

Region 4
Nancy Spangler, RDMS, CNMT

Region 5
Stephen McLaughlin, BS, RT, RDMS

Region 6
Charlotte Brookshire-Quinn, RDMS

Region 7
Diane Black, RT, RDMS

Ex Officio Commercial Representative
Gail Buurma, RDMS

1994 Executive Board same as 1993

Regional Directors

Region 1
Joan Baker, MSR, RDMS

Region 2
Carolyn Coffin, BS, RT, RDMS

Region 3
Jeanette Burlbaw, BS, RDMS

Region 4
Nancy Spangler, RDMS, CNMT

Region 5
Stephen McLaughlin, BS, RT, RDMS

Region 6
Charlotte Brookshire-Quinn, RDMS

Region 7
Lori Koziol, RDMS

Ex Officio Commercial Representative
Gail Buurma, RDMS