

# Undersea and Hyperbaric Medical Society 1967 - 2007 A History of 40 Years



UHMS Home Office, October 1973 - January 1994



UHMS Home Office, January 1994 - June 2005



UHMS Home Office, June 2005 - June 2007

Compiled by Don Chandler, Executive Director

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## INTRODUCTION

This booklet chronicles 40 years of achievements, failures, and victories of the Undersea and Hyperbaric Medical Society (UHMS) and is pieced together from several sources. Of particular note are the contributions made by Dr. Christian J. Lambertsen, one of the founders of the UHMS and the first person to hold the office of President. Some of the information herein is excerpted from Vol. 16, No. 6 of *Pressure* which highlighted the 20<sup>th</sup> anniversary of the UHMS.

The initial concept of an Undersea Medical Society grew out of the purposes and close scientific associations of the series of International Symposia on Underwater Physiology. These symposia were initiated in 1955 by the University of Pennsylvania and the Office of Naval Research. The purpose was to stimulate interest in a field of scientific opportunity which was then poorly recognized by universities, navies and industry.

The initial discussions, at which the desirability of a continuing undersea scientific and medical association were expressed, occurred under highly incongruous circumstances. The informal gathering took place in a lodging room of the Sands Hotel in the desert city of Las Vegas, Nevada on 20 April 1966, during the 37th Annual Meeting of the Aerospace Medical Association. The participants in those informal initial discussions included Dr.'s Christian J. Lambertsen, Robert D. Workman, Edward L. Beckman, Walter F. Mazzone, Earl H. Ninow, and Jack L. Kinsey. These six men drew together out of mutual interest in the relations of undersea and aerospace research. A key decision of the members of this group, who went on to become the Founders of the Undersea Medical Society was that C.J. Lambertsen would carry out the procedures involving drafting of the Constitution and officially establishing the Society, utilizing the assets of the University of Pennsylvania for this purpose.

The actions of writing the first Constitution, formally founding the Society, selecting the Charter Members, organizing the first meetings and carrying on the first year of scientific communication and business affairs were carried out from the laboratories at the University of Pennsylvania that have become the Institute for Environmental Medicine.

The six men, who were our Founders, were the visionaries who saw a need and agreed on a solution, which was a professional organization called the Undersea Medical Society. This booklet highlights the first 40 years of the outcome of their vision.

Read on. I sincerely hope you enjoy every page.

Don Chandler  
Executive Director

**FOUNDERS OF THE UNDERSEA MEDICAL SOCIETY**



*Christian J. Lambertsen, MD*



*Robert D. Workman, MD*



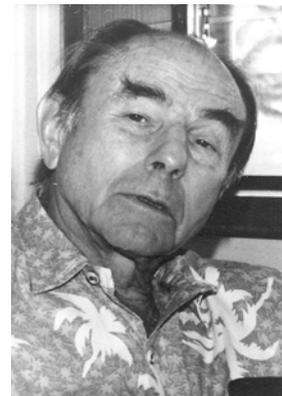
*Jack L. Kinsey, M.D.*



*Walter F. Mazzone, Ph.D.*



*Earl H. Ninow, M.D.*



*Edward L. Beckman, M.D.*

## **A HISTORY OF THE UNDERSEA AND HYPERBARIC MEDICAL SOCIETY**

The Undersea Medical Society did not spring fully-formed in 1967 from Jupiter's brain, without a period of gestational premeditation. Prior events over a previous more than two decades grew out of the extensive experience and experiment related to World War II and its influences on subsequent patterns of medical research and expanded human operations. What were such factors and events?

A peculiar aspect of World War II was that most emphasis to advance human activity was placed upon aviation, submarine human factor cold exposure, and desert environments. The vigorous and imaginative research by now well-known naval, army and aviation medical officers of several countries (in particular the United States, England, and Germany), a large number of civilian scientists worked throughout the War in university laboratories. Undersea medicine was largely unrecognized as an opportunity outside of national experimental diving units.

A factor of broad present significance was provided in World War II by the development of self-contained diving in Italy, England, and the United States. Out of this grew clear wartime interest in determining the effects of increased oxygen pressures on man and enzymes. However, the success of the new forms of military diving (oxygen and mixed nitrogen-oxygen) did little, post-war, to arouse scientific undersea research either in wartime laboratories or in altitude or other environmental chamber systems. Many of these that were used during the war were scrapped to make room for return to civilian pursuits.

The many ambitious young medical and physiological scientists returning to civilian life entered academic medical institutions and contributed heavily to research in pulmonary function, hematology, anesthesiology and other disciplines concerned with classical medicine related to care of the sick. A prominent step forward occurred about 1952, when the National Research Council's prestigious "Committee on Undersea Warfare" established its "Panel on Underwater Swimmer Technology" to aid broad development of manned underwater operations. To the clear distress of the National Research Council, this initially small advisory panel set out to stir interest in diving technology in and outside of the government. It did so within the government by selecting the occupants of responsible positions and making them part of their own advisory system. The result of the massive Panel was a period of active and immediate technical communion among government, industry, and university of a sort not often seen before or since in undersea development.

The members of the Panel on Underwater Swimmers were:

C. J. Lambertsen, Chairman  
C.F. Aquadro, LT(jg), MC, USN  
E.S. Baer, LT(jg), USNR

W.N. Bascom  
R. H. Bass, CAPT, USN  
J. T. Blair

H. Bradner  
R.L. Brown  
P.H. Bucklew, LCDR, USN  
E.L. Burgess, LCDR, USN  
J. T. Dailey  
M. des Granges, CDR, USN  
R. H. Draeger, CAPT, MC, USN  
H. Fraper  
G.J. Duffner, CDR, MC, USN  
J.V. Dwyer, LCDR, USN  
H.E. Edgerton  
G.C. Ellerton, Jr., CDR, USN  
F. D. Fane, CDR, USNR  
R. J. Fay, LT, USN  
R.D. Fusselman, CAPT, USN  
C.A. Gongwer  
J.W. Greeley, CDR, USN  
A.T. Gregory  
G.M. Gaherman, CDR, USNR  
W. A. Hahn  
J.R. R. Harter  
B.A. Hawkins, LT, USNR  
E.C. Hoff  
C.A. Hooper, LCDR, USN

J.L. Kinsey, CDR, MC, USN  
E.H. Lanphier, LT, MC, USNR  
R. B. Livingston  
R. I. Mason  
W.E. Mayberry, LT(jg), MC, USNR  
H.W. Menard, Jr.  
I.G. Nelson, LCDR, USN  
J.T. Olekay, LCDR, USN  
C.P. Phoebus, CAPT, MC, USN  
R.H. Porter, CAPT, USMC  
F.H. Quimby  
M. Radnofsky  
C.A. Sander, CDR, USN  
D.G. Saunders, LCDR, USN  
K.E. Schaefer  
J.M. Seawright  
J.S. Sleeper, LT(jg), USN  
W.K. Smith, LT(jg), USNR  
R. L. Solomon  
H. Specht  
S.N. Stein  
O.E. Van der Aue, CAPT, MC, USNR  
T. L. Willmon, CAPT, MC, USN  
G.F. Wislicenus

A second goal of this period was to awaken interest of civilian biomedical scientists in the large opportunities to advance physiology through investigations contributing to advances in diving. This purpose of stimulus was the basis for the first Symposium on Underwater Physiology in 1955 organized by the University of Pennsylvania and the Office of Naval Research using the NRC Panel on Underwater Swimmers as its vehicle.

The exceptional success (and unusually active approaches) of the Panel on Underwater Swimmer Technology led to its disbanding, in self-defense, by the parent National Research Council with a classical diplomatic note explaining that the Panel has so well accomplished its mission that it was no longer needed. Abrupt loss of its active communications vehicle by undersea biomedical science occurred as the gleam of interest in the potential of manned space flight developed diving and aerospace physiologists came into closer contact through a Second and a Third Symposium (1963), and for some, participation in the Aerospace Medical Association. During this time period a wide swing of the pendulum led the National Academy of Science, Space Science Board to establish a Man-in-Space committee to establish the scope of research required for future manned space flight, as had been developing for manned undersea activity. Undersea and aviation scientists joined together in this important effort, but again with a degree of activity that let it, too, to be relieved in 1962 after two years of work 'having accomplished your mission.'

These parallel successes in arousing awareness of need for undersea and aerospace biomedical research led to the peculiar situation in which the Underwater Physiology Symposium series remained the major organized focus of detailed environmental research communication for many undersea and aerospace investigators. Following the Third Underwater Symposium, it became obvious to a small group of aviation, submarine and diving specialists that a permanent base for the Underwater Medicine and symposium series should be established, to assure continuity of close communication, and in part to ease the extensive investment by the University of Pennsylvania for organizing and documenting successive symposia.

As mentioned in the introduction above, the small group of six men who came to this conclusion went on to become the Founders of the Undersea Medical Society. One was a naval flight surgeon, four were naval officers associated with submarine and diving medicine and psychology, and one was a university physiologist.

The judgment was that the Aerospace Medical Association could provide a convenient initial home for an Undersea Medical Society, thereby providing for still further communication between two great fields of scientific endeavor and human activity.

Characteristically, the five naval officers skillfully selected their civilian colleague as “Presiding Founder,” wishing him luck in writing a constitution, organizing charter membership, meetings, and other minor aspects of founding a new society. The culmination of this exemplary informal process, were the actions of the founding of the Society and the writing of its Constitution, and initial offices in the laboratories now designated the Institute for Environmental Medicine of the University of Pennsylvania. From this founding base, the new Undersea Medical Society held a formative business meeting on 10 April 1967 in Washington, D.C. for introduction of Charter Membership and election of Officers and an Executive Committee.

The Charter Members of the UMS approved on 10 April 1967:

Dr. Emilio Agostoni	Dr. Ralph W. Brauer
Dr. George A. Albright	Dr. Ivan W. Brown, Jr.
Dr. Charles F. Aquadro	Dr. A.A. Buehlmann
CDR A.H. Barsoum, MC, USN	Dr. Edward J. Burger, Jr.
Dr. John W. Bean	Mr. Charles R. Carey
Dr. Edward L. Beckman	CAPT John Caruso, Jr. MC, USN
CAPT A.R. Behnke, MC, USN	Dr. Jacques H. Corriol
Dr. Peter B. Bennett	Dr. James G. Dickson
LT(jg) Thomas E. Berghage, MSC, USN	CAPT C. T. Doudna, MC, USN
Dr. John Billingham	Mr. James H. Dougherty, Jr.
CAPT George F. Bond, MC, USN	Dr. Thomas D. Duane
Dr. Stuart O. Bondurant	Dr. Arthur B. DuBois
CDR Robert C. Bornmann, MC, USN	CAPT Gerald J. Duffner, MC, USN

Dr. Harold V. Ellingson  
WingCdr John Ernsting, RN  
Dr. Wallace O. Fenn  
Dr. Don Flickinger  
WingCdr David I. Fryer, RN  
Dr. Charles F. Gell  
Dr. H. William Gillen  
Dr. Maxwell W. Goodman  
CDR Leon J. Greenbaum, Jr., USN  
Dr. Peter Hall  
Dr. R. W. Hamilton, Jr.  
Mr. Thomas Harrington  
Dr. William Helvey  
Dr. Edwin Handler  
CAPT Yoshutsugu Hiruma, JMSDF  
Dr. Raymond J. Hock, Ph.D.  
Dr. Alvin S. Hyde  
Mr. J.S Impellizzeri  
CAPT Jack. L. Kinsey, MC, USN  
Dr. Johannes A. Kylstra  
Dr. C.J. Lambertsen  
Dr. E.H. Lanphier  
Dr. Richard W. Lawton  
Dr. Leonard M. Libber  
Dr. John C. Lilly  
CDR Paul G. Linaweaver, MC, USN  
Dr. Claes E.G. Lundgren  
Dr. Joseph B. MacInnis  
SurgCdr D. E. MacKay, RN  
Prof. R. Stualet MacKay  
CAPT Walter F. Mazzone, MSC, USN  
LCOL Robert G. McIver, USAF

Dr. James W. Miller  
CDR Earl H. Ninow, MC, USN  
Dr. Poul-Erik Paulev  
CAPT Joseph P. Pollard, MC, USN  
CAPT Carl E. Pruett, MC, USN  
LT Lawrence W. Raymond, MC, USNR  
CDR Elizabeth Reeves, MSC, USN  
Dr. Donald W. Rennie  
LCDR J. C. Rivera, MC, USN  
Mr. Herman P. Roth  
Dr. George E. Rowland  
Dr. Herbert A. Saltzman  
Dr. Karl Ernst Schaefer  
Dr. Heinz R., Schreiner  
CAPT John H. Schulte, MC, USN  
Mr. Stephen Selwyn  
Dr. C. W. Sem-Jacobsen  
Dr. Julius Sendroy, Jr.  
CAPT Vance E. Senter, MC, USN  
CAPT J. Siegel, USN  
LCDR Raymond L. Sphar, MC, USN  
LCDR Robert E. Thompson, MC, USN  
D.r Richard Trumbull  
Dr. Richard R. Uhl  
RADM Frank B. Voris, MC, USN  
LCDR James Vorosmarti, MC, USN  
RADM Charles L. Waite, MC, USN  
Dr. James R. Wamsley  
Dr. Paul Webb  
Dr. G. J. Womack  
CAPT Robert D. Workman, MC, USN

The first Executive Committee was made up of the following persons:

Dr. C.J. Lambertsen  
CAPT R.D. Workman, MC, USN  
CAPT. A.R. Behnke, MC, USN  
CAPT W.F. Mazzone, MSC, USN  
Dr. Heinz R Schreiner

CAPT Jack L. Kinsey, MC, USN  
CAPT George F. Bond, MC, USN  
CDR Earl H. Ninow, MC, USN  
Dr. Wallace O. Fenn  
Dr. Edward L. Beckman

*(The following was excerpted from the AsMA journal Aerospace Medicine, August 1967 Issue, where AsMA reports on the founding of the UMS)*

**“Undersea Medical Society Becomes New Section of Aerospace Medical Association.** On several occasion in this section of the

Journal references have been made of the mutual interest and relationship of scientists engaged in work of deep submergence and in space. The scientists who are involved in supporting and studying man in the hyperbaric state face problems and physiological phenomena that are common to those who deal with man in hypobaric situations.

Great interest was shown in the session on Hyperbaric Medicine during the 1966 meeting in Las Vegas in which an excellent panel discussed the applicability of hyperbaric medicine to space medicine. A similar special session was held this year at the Washington meeting.

At its April 9, 1967 meeting the Executive Council received an application from the Undersea Medical Society to become a Section of the Aerospace Medical Association. A Resolution concerning the Section was unanimously passed by the membership during the Association's Annual Business Meeting (see Report of the 38<sup>th</sup> Meeting p. 658, June, 1967)."

The first of the annual scientific meetings of the new Undersea Medical Society followed on 9 May 1968; this was preceded by the first business meeting held on 8 May 1968. The meeting received the sensitive and welcome recognition of then Vice President Hubert Humphrey, whose roles included chairing national councils on marine and space technology (see below for a copy of the Western Union telegram from the White House). His important telegram marked the end of the beginning of the first chapter of the story the conception, gestation, and birth of the Undersea Medical Society. From its origins it was conceived to serve international scientific communication in undersea biomedical research. Its parallel evolution and blending with research and applications in hyperbaric medicine can similarly serve such international interest in research and applications.

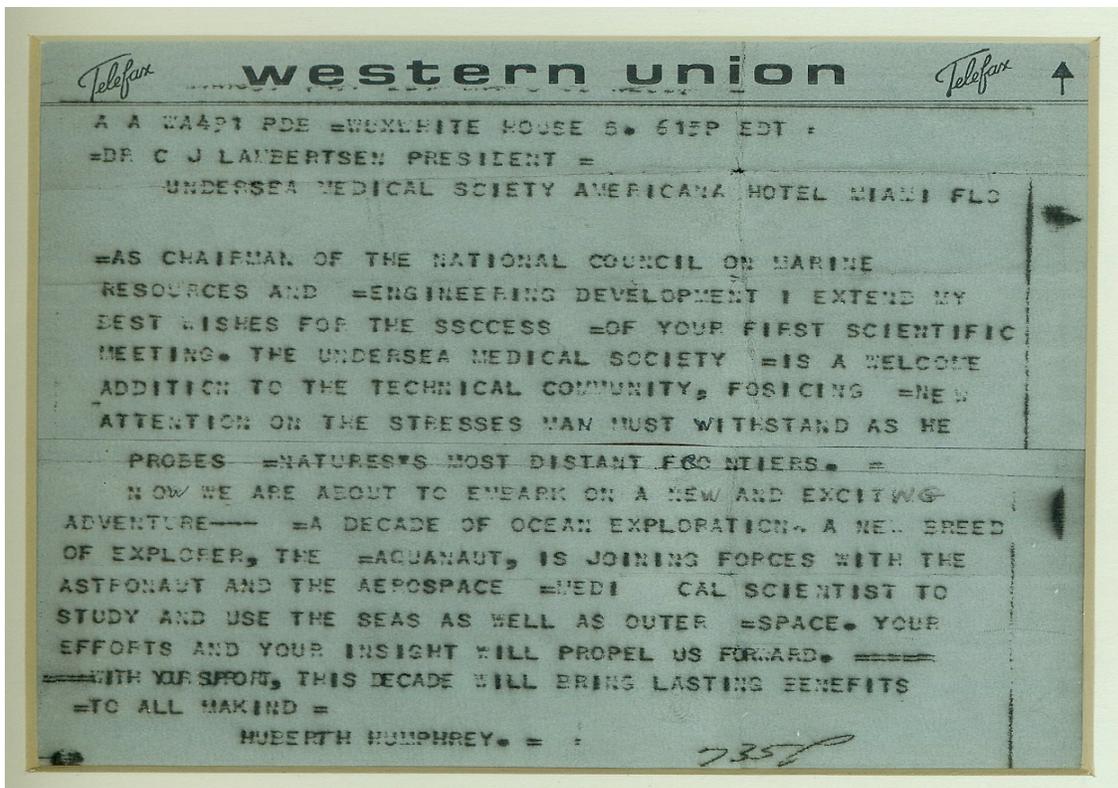
The attendees at the first annual business meeting on 8 May 1968 were Dr.s. E. Beckman, G. Bond, J. Kinsey, C. Lambertsen, H. Schreiner, B. Workman, and F. Voris, ex officio, as President of the Aerospace Medical Association. The meeting was held in the Westward III Room of the Americana Hotel, Bal Harbour, Florida. There were 51 applications for new members to be approved or rejected. When business was done, the membership read 88 charter members, 19 members approved in October 1967, and the 51 new applicants for a total of 158 members. Rather exciting growth for the 13-month old medical society! Dr. R.D. Workman was elected the UMS President, Dr. E.L. Beckman was elected as President-Elect, Dr. W.M. Helvey was elected as Vice President, and Dr. H.R. Schreiner was elected as Secretary-Treasurer...all for the business year 1968-69. The agenda for this first annual business meeting was:

- Announcement of new members.
- Progress in evolution of relationship with the Aerospace Medical Association

- Discussion of constitutional modification.
- Dues
- Election of officers for 1968-1969.
- Discussion of next Underwater Physiology Symposium.
- New business.

The program for the first annual scientific meeting of the UMS at Bal Harbor, Florida was as follows:

- Keynote address by Dr. Edward Wenk, Jr.
- Symposium on Decompression
- Symposium on Modern Aspects of Treatment of Decompression Sickness
  - Evolution of concepts in the etiology of bends.....D.I. Fryer
  - Physics of formation and resolution of bubbles....R. Buckles
  - Limitation in the treatment of diving and aviation bends by increased ambient pressure.....R.C. Bornmann
  - Treatment of diving and aviation bends with oxygen at high pressure.....R.D. Workman
  - Problems in the treatment of bends developing in space operations.....R.G. McIver
  - Potential advances in bends therapy.....C.J. Lambertsen



The second annual business meeting of the young UHM was held in San Francisco, California at the Hilton Hotel on 8 May 1969. The attendees enjoyed a lunch of crab coquille, chopped sirloin steak, O'Brien potatoes, string bean amandine, coffee ice cream with crème de cocoa, and coffee. This second business meeting revealed a membership of 253 persons with representation from 12 countries other than the United States. Seeing members from countries other than the U.S. was good, because from the very beginning the intent of the Society was to be international in scope and purpose. Total income from 10 April 1967 to 8 May 1969 was \$2,620 and the Treasurer reported a bank balance of \$1,322.78. Frugal spending was established from the very beginning and has carried through to even today. The only extravagance in evidence that first year was the generosity shown by the approved honorarium that accompanied the UMS award which continues through today.

*(Excerpt from Pressure Vol 11, No. 3)* “For several years, the UMS had no formal headquarters; it was managed by President Lambertsen and his Executive Committee with a representative in Washington D.C. By October of 1973, the Society has grown to the point that a permanent office was established in Bethesda, MD, on the grounds of the Federation of American Societies for Experimental Biology (FASEB), close to the Naval Medical Research Institute and the National Institutes of Health. That year (1973) UMS not only acquired a home, it acquired its first Executive Secretary (Dr. C.W. Shilling).

With the growth of the Society came the desire for independence and the official break with the Aerospace Medical Association occurred in 1974. Another significant milestone occurred in 1975 when the Society established the category of ‘Associates of the UMS.’ This group of non-professionals became very active and vital to the progress of the Society”

Our Associates continue today as a significant strength in Society affairs. The first Associate was Ms Peg Matzen, an editor of note who worked for Dr. Arthur Bachrach for many years at the Naval Medical Research Institute. Dr. Peter Bennett, then UMS President, presented Peg with the first Associate Member Certificate in October 1975.

From its beginning in 1974, one of the major activities of the Society had been the publication of its scientific journal, known first as *Undersea Biomedical Research* and followed by a name change to *Undersea and Hyperbaric Medicine*. In addition to the professional peer-reviewed journal, a Society newsletter called *Pressure* was first published in June 1972 and continued to be issued every two months. The newsletter had a high level of popularity and was began by its first Editor, Eric P. Kindwall, M.D. under the leadership of the, then, Society President, Prof. David H. Elliott, OBE.

A Long Range Planning Council was organized and met for the first time on 27 May 1981. Dr. Herbert Saltzman served as Acting Chairman in the place of Dr. James

Vorosmarti. In attendance were Dr.'s Elliott, Bennett, Webb, Lambertsen, and Beckman. Topics of high priority for the Council were:

- The purpose of the society, now, later, and how can it be achieved.
- Quality of scientific meetings.
- The non-American international functions of the society.
- Considerations of the present structure administratively in terms of soundness.
- Affiliation with FASEB.
- The service function of the society as opposed to the scientific function.
- Review of the long range plan from 1975.
- Triennial Underwater Symposia.
- Certification of diving medical examiners and diving medical physicians.
- Hyperbaric medicine activities within the scope of the UMS.

By 1982 the activities of the Society had expanded to include a number of books and two continuing monthly abstracting services. The focus of activity had broadened to encompass not only diving medicine and technology but research in hypothermia and the therapeutic uses of hyperbaric oxygen. In the hyperbaric activity a quarterly journal called *Hyperbaric Oxygen Review* was published and an information center was maintained.

Also by 1982, the Society had three active UHMS Chapters: the North Pacific, Gulf Coast, and Great Lakes chapters. The year 1982 also saw the UMS filling an important role in sponsoring and conducting educational and training activities for physicians and diving medical technicians. By this point in time, the UMS conducted a three-week NOAA Physicians Diving Training Course had graduated over 100 physicians who were qualified to treat diving-related emergencies. By this time, the UMS had grown from 450 members to more than 1900. Headquarters had expanded to an entire building, a small two-story former carriage house converted to offices and employed a core staff of 10.

By the time the Undersea Medical Society was 20 years old, it had a new name, the Undersea and Hyperbaric Medical Society (UHMS). Accomplishments during the first 20 years were chronicled in the 1987 Nov/Dec issue of *Pressure*. These following events are listed as the "Society Milestone Calendar:"

- **Decision to found the Society** at the Aerospace Medical Association meeting in Las Vegas, Nevada, 1966.
- **First Business Meeting**, April 10, 1967 in Washington DC. Society officers and Executive Committee were elected. Dr. Christian J. Lambertsen was elected Founding President.
- **First Executive Committee Meeting**, October 1967 at the University of Pennsylvania, where Dr. Lambertsen and the first Executive Committee managed the UMS with a representative in Washington DC.
- **First Annual Scientific Meeting** in Miami, Florida, May 1968. Vice President Hubert Humphrey marked the event with a telegram.

- **Publication of Pressure** as a quarterly newsletter, *Pressure: Medicine and Physiology*, June 1972.
- **Establishment of first formal headquarters** on FASEB campus in Bethesda, Maryland, in October 1973.
- **Society's first Executive Secretary**, Dr. Charles Shilling, takes office, October 1973.
- **First UMS Workshop**, "Labyrinth Dysfunction During Diving," held at Duke University, Raleigh, North Carolina, February 1973. Over 35 workshops have been held since then.
- **Publication of Underwater Medicine and Related Sciences: A Guide to the Literature**, an annotated bibliography of abstracts on diving and submarine medicine, 1973.
- **Establishment of Student Membership**, 1973.
- **Independence from the Aerospace Medical Association**, 1974.
- **Publication of Undersea Biomedical Research**, the Society's first journal, March 1974.
- **Establishment of Associate Membership**, 1975
- **Publication of Undersea Medicine: Abstracts from the Literature**, an abstract journal, January 1986.
- **Society's first Executive Director**, Dr. Leon J. Greenbaum, Jr. takes office, April 1986.
- **Publication of the Journal of Hyperbaric Medicine**, the Society's second journal, March 1987.
- **Society Name Change** from Undersea Medical Society to Undersea and Hyperbaric Medical Society, September 1986. The abstract journal's name was also changed in May 1987 to incorporate the word, "hyperbaric."

In the issue of *Pressure* that was dedicated to highlighting the Society's first 20 years (identified earlier), Dr. Eric Kindwall wrote an excellent summary of how hyperbaric oxygen therapy became a part of our Society. Parts of his article are excerpted below:

"The Undersea Medical Society (UMS) now called the Undersea and Hyperbaric Medical Society (UHMS) was formed in 1967 before the use of hyperbaric oxygen (HBO) had achieved any broad recognition in treating non-diving diseases. All (but one) of the Society founders were associates with the U.S. Navy, and most of the members in the early years drew their HBO experience almost exclusively from diving.

### **HBO Use Spread**

By 1972, however, the use of hyperbaric oxygen for treating diseases other than bends and air embolism had begun to spread in the United States, although there were less than a handful of centers doing significant research. In that year, General Theodore Bedwell (MC), USAF (Ret), who was then head of Medicare for the Social Security

Administration approached me at an Aerospace Medical Association meeting to ask for help in sorting out legitimate hyperbaric claims from those that were improper or fraudulent.

Since the UMS at that time was the only non-military organization in the United States that had knowledge of hyperbaric physiology, (Dr. Kindwall) suggested that he ask George Hart to nominate a panel of UMS members to review Medicare's problems in this area. The panel met in August 1972 in Baltimore, Maryland. The results of (the) one day of deliberations were passed on to the U.S. Public Health Service for review. But the UMS did not maintain an active group dedicated to HBO.

### **No Reliable HBO Guidelines Available**

By 1976, inappropriate use of hyperbaric oxygen had increased and there were still no reliable guidelines for insurers. At a UMS Executive Committee meeting held on Guy Fawke's Day in November 1976, an ad hoc committee on hyperbaric oxygenation was formed. As its first chairman, (Dr. Kindwall) appointed 18 members from around the country.

While (they) were gathering input from committee members, Dean Heimbach and (Dr. Kindwall) visited the newly created Health Care Financing Administration (HCFA) in Baltimore, Maryland. (HCFA had replaced the Social Security Administration as administrator of Medicare.) Later, (Dr. Kindwall) visited with National Blue Cross/Blue Shield in Chicago, Illinois.

### **Determining Needs of Insurers**

The purpose of these meetings was to determine the needs of insurers. A meeting of all the committee members was held in Chicago on April 12, 1977, to produce a preliminary draft of (their) report.

The final report was accepted by the UMS Executive Committee at the Toronto meeting in May 1977. After study, the Medical Advisory Board of the National Blue Cross/Blue Shield accepted the report in toto on September 14, 1977, as its source document. After that time, the HBO Committee became a permanent Society committee.

### **Society Name Officially Changed**

Finally, in September 1986, at Kobe, Japan, the name of the society was officially changed to the Undersea and Hyperbaric Medical Society. There had finally been a realization of the goals stated in (Dr. Kindwall's) introductory note to the first issue of *Pressure* where (he) wrote, 'The title (*Pressure*) is intended to be all embracing. The title should reflect coverage of all submarine subjects... Additionally, a number of physicians practicing hyperbaric

medicine are members of the UMS by virtue of the same immutable laws of pressure and oxygen toxicity that affect their patients as they do divers.’

The Society’s goal then, as it is now, is to serve all who deal with the effects of increased barometric pressure.”

### **Our Associates**

**Historic Profile.** Our Associates have always been an important part of the UMS/UHMS and in the issue of *Pressure*, mentioned earlier, that highlighted the first 20 years of the Society, Jim Persels wrote a very good historical summary of our Associates. Some of his article is excerpted below:

“Prior to the annual meeting of the UMS in San Antonio, Texas in May 1984, the Associates consisted of a small group of clinical and diving personnel, who did not qualify for regular membership in the Society, but who did have enough interest to pay their dues so that they could receive *Pressure* and attend the occasional UMS function. The extent of their participation in the Society was a periodic Associate luncheon at the annual meeting.

At the San Antonio meeting, the incoming UMS President, Dr. Paul Linaweaver, changed the course of Associate history by issuing a challenge to a small group of active Associates. His comment was ‘Here’s your chance; make something of the Associates!’ The listening core group became the Associate Steering Committee. Members of the original committee included Jim Persels as chairman, Chris Wacholz, Nancy Hussey, Barbara Schnitzer, Doug Soule, Valerie Messina, Paul Baker, Tom Jones, Bud Mills, Linda Mones, Diane Norkool, Tom Sellers and Bill Lawrence.

### **Steering Committee Sets Goal**

The Steering Committee recognized the Associates as a diverse group with an abiding interest in the Society. They set as their goal the retention and expansion of current membership. Their approach was to stress areas of common interest, while recognizing and responding to specialty interest through the development of programs that would enhance participation in Society activities. With this lofty goal in mind, the Steering Committee set to work in earnest.

That first year the committee surveyed the associate membership to build a data base of member profiles, and constructed a significant educational program for the 1985 meeting in Long Beach, California. Both projects met with outstanding success. The survey verified the diversity of the group and indicated that there were 278 Associates on the rolls. The ‘Associates Day’ at the annual meeting in

Long Beach received rave reviews from attendees and set the stage for even greater participation in future years.

The next UMS President, Dr. Mark Bradley, followed in Dr. Linaweaver's footsteps by expressing strong support for the Associates efforts. The Steering Committee decided to make a strong push for increased membership during 1985 and to investigate the possibility of holding their own meeting in the continental U.S, since the Society had announced that the next annual meeting would be in Kobe, Japan. Both efforts were extremely successful.

### **150% Membership Increase in Two Years**

By mid-1986, the Associates roll stood at 640, a 150% increase in two years. In addition, the Associates participated with the UMS Gulf Coast Chapter to hold an outstanding and profitable three-day meeting in Key Biscayne, Florida. This meeting caught the attention of the regular membership and made the Associates realize that they were, in fact, a very important segment of the Society.

These successes clearly demonstrated the interest and abilities of the Associates. Therefore, the steering committee set several additional goals to solidify the Associates' place in the Society.

They asked the UHMS Executive Committee for a source of funding for Associates' programs, the ability to sponsor Associate applicants to the Society, an elected (in lieu of appointed) chairman to truly represent the Associates, and a vote on the Executive Committee.

### **Efforts Begin to Bear Fruit**

As Dr. Joe Farmer accepted the gavel as UHMS President in 1986, he assured the Associates continued support for their efforts to gain a meaningful place in the organization. At the annual meeting in Baltimore, Maryland, in 1987, three years of effort began to bear fruit. The Associates were granted the privilege of sponsoring their own members, and a percentage of Associate dues were approved as a source of funding for Associate programs. In addition, an Ad Hoc By-Laws Committee was asked to investigate the mechanism for permitting the Associates to have a vote on the Executive Committee.

### **Executive Committee Approves Vote**

At the October 1987 Executive Committee meeting, the Ad Hoc By-Laws Committee recommended a change to the by-laws that would establish a voting position on the Executive Committee for an elected Associates chairman. This recommendation was presented as a motion and passed unanimously.

The Associates have worked diligently over the past three years to be recognized as an active group that contributes to the overall goals of the UHMS. They have successfully developed their organization and, in the process, have made a significant fiscal contribution to the Society. Moreover, they have helped expand the field of diving and hyperbaric medicine through their educational efforts.

They are today (1987) involved in the changing scene in areas such as credentialing and chamber safety. But this is history. The best is yet to come!”

Stacey Handley, ACHRN, the Associates Historian picks up the history at this point through our 40<sup>th</sup> year:

“The first elected Chair was Dick Clarke in 1989. Associate membership increased to 565. Other past Associate Chairs have included Paul Baker 1991, Delmer Shelton 1993, Sue Laney 1995, Jim McCarthy 1997, Gregory Mann 1999, Steve Wood 2001 and Mike Crouch in 2003. Our current Chair is Kaye McClue; she assumed the role in June 2005.

Membership numbers over the years have remained about the same ranging from 533 to presently 781 (11/06). Considering the increased awareness and growth in this industry our membership into the Associates is not representative. There remains much work to be done in this area to increase the awareness of Associate membership and the opportunities that exist for such membership.

The Associate’s mission statement was established and today remains unchanged and parallels that of the UHMS purpose statement. It is to provide a forum for communication among individuals involved in basic and applied studies concerned with life sciences and human factor aspects of the undersea environment and hyperbaric medicine. To promote cooperation between the life sciences and other disciplines concerned with undersea activity and hyperbaric medicine. To develop and promote educational activities and other programs which improve scientific knowledge of matters related to undersea and hyperbaric environments and the accepted applications of hyperbaric oxygen therapy for the membership, as well as physicians and allied health professionals, divers, diver technicians, hyperbaric technologists and the public at large.

While simultaneously establishing themselves as the Associate body within the UHMS, the early leadership was also reassessing the focus of the National Association of Diver Medical Technicians

(NADMT). In 1989, under the presidency of Dick Clarke, a new name was established and it became the National Board of Diving and Hyperbaric Medical Technology (NBDHMT), acknowledging the emergence of clinical hyperbaric medical technicians in to the field of diving medicine.

A body of five men made up the NBDHMT Executive Committee; Dick Clarke, Paul Baker, Jim Persels, Keith Van Meter, and Brian Foley. The new committee's focus was to develop a testing certification process whereby members would have access to gain recognition for their specialized skills. Candidates would have to show documentation of 40 hours of formal hyperbaric medicine training, maintain continued education, show proof of working in HBO for a minimum amount of time and have a letter of recommendation from their employer. These requirements were established to ensure a higher level of safety and competency of clinicians in hyperbaric medicine settings.

By June 1991, the first ever Certified Hyperbaric Technologist (CHT) examination was conducted at the UHMS annual meeting in San Diego, California with 45 candidates challenging the exam. To date there have been well over 1850 CHTs complete the process for certification. In 1995, Paul Baker became the next NBDHMT president and he still currently holds that position.

In 1997, the Associates established the [Paul C. Baker Award](#). This award is presented at the Annual Scientific Meeting to an Associate member for outstanding contributions to the advancement of safety in hyperbaric medicine worldwide. The award was based on the many enduring contributions from Paul Baker. At the August 2004 Annual Meeting in Dallas, the board approved an increase to \$1000 for this life achievement award.

Past recipients are Paul Baker 1997, Dick Clarke 1998, Jim McCarthy 1999, Brian Foley 2000, Sue Desantis and Ken Rideout 2001, Jay Duchnick 2002, Robert Sheffield 2003, Christy Pirone June 2004 in Sydney and Kevin Corson August 2004 in Dallas, in June 2005 Greg Ralieggh was the recipient.

The [Associates Award for Excellence in Presentation](#) was created in 1999 to recognize outstanding Associates who participate in the Annual Scientific Meeting. Each Associate member who presents a paper is evaluated by a team of judges who rate each presentation on a number of areas, including content, applicability to the profession, and quality of presentation. At the Annual Meeting in August 2004 in Dallas, the board approved creating two Excellence Awards for each

Annual Meeting, as well as increasing the monetary value to \$750 and \$500.

Past recipients are Dawn Ray 1999, Sara Hasan 2000, Dick Sample 2001, Valerie Larson-Loehr 2002, Karen Swaby 2003, Rich Egan June 2004 in Sydney, Dick Sample August 2004 in Dallas and Doug Oberly August 2004 in Dallas. In 2005 Steve Wood was a recipient.

In 1999, Tom Workman, on behalf on the operations committee, was asked to draft a proposal to present to the UHMS Executive Committee for hyperbaric facility accreditation. Tom worked diligently to put to together a safety program for hyperbaric centers nationwide and made numerous presentations on the concept to audiences worldwide. This program would consist of safety compliance standards, which would eventually serve as the accepted minimum requirements to house hyperbaric centers in the US. This initiative would help eliminate those centers and/or home based operations that were producing or at risk for catastrophic fatalities due to a lack of approved safety devices and measures. Additionally, the accreditation was to capture the attention of regulatory affairs to stop reimbursement and shut down centers that do not meet safety standards. Up to that time, safety hazards associated with hyperbaric medicine were not well understood or enforced by government agencies.

After many years, Tom's hard work paid off. He and his team of surveyors were able to raise the bar on safety standards. The first Accreditation survey was conducted September 2002 in Columbia, SC. Since that time over 60 HBO centers have been surveyed and many more centers are waiting their turn for accreditation. The UHMS accreditation is close to becoming the industry standard for hyperbaric centers. Tom's efforts have made a tremendous impact in the lives of the Associates by broadening the awareness of hyperbaric medicine safety.

In response to the need for hyperbaric facility design guidelines, during the 2003 Annual Meeting, the Associates' Executive Board authorized the organization of a committee to develop a set of facility design recommendations for clinical hyperbaric facilities. The committee chair is Steve Wood, and committee membership will represent chamber operators, manufacturers, and clinicians. A draft of the design has been presented thus far. The Associates look forward to the final production of the project.

The UHMS Associates have evolved over the nearly 2 decades since our birth to accommodate to the needs of its members and the settings in which they exist. Thanks to the UHMS leadership who generated the idea of acceptance of the Associate membership, we now have a voice in the UHMS. We have succeeded in fulfilling the mission by providing ongoing collaboration and education through cooperation between the life sciences. As Associates, we have much to be grateful for, however, we still have a great deal more yet to accomplish!”

## UHMS Past Presidents

More than any other group our Past Presidents individually influenced the decision making process within our Society. With their leadership and wisdom in the forefront of their actions, they have shaped what we see today as the Undersea and Hyperbaric Medical Society. As a society, we are the premier professional organization in the fields of medicine we represent and our influence is truly world-wide. Our Past Presidents have served us well and here, in their own words, are what they believe to be the most significant accomplishments of their individual tenure.



*Christian J. Lambertsen, 1967-1968*

Dr. Lambertsen, the founding President of our Society chose to provide his letter to all prospective Charter Members announcing the first meeting of the Undersea Medical Society. He reported that: "The meeting was held and the Active Society Establishment was accomplished officially with designation of initial officers, on the strength of this first meeting." His letter reads:

"The first meeting of the newly founded Undersea Medical Society will take place in the Cabinet Room, Washington Hilton Hotel, from 3:30 to 5:30 P.M. on Monday 10 April 1967. This is during, and at the same location as, the annual meeting of the Aerospace Medical Association. Activities at this meeting will be devoted largely to the formalities of establishing the society, receiving the new members, election of officers,

and discussion of appropriate relationship to the Aerospace Medical Association.

The founders will serve as a nominating committee for presentation of a slate of officers and council members to consolidate the formation of the Society in its first year. The nominating committee will also present nominations for the office of President-elect, who will take office at the time of the regular election of new officers in 1968.

Time will be provided for open discussion of the scope and mechanisms of future meetings and society activities.

Prospective Charter Members should note that, in response to constructive suggestions by many individuals, several improvements in the Constitution have been adopted by the Founders. Opportunity for further improvement in the normal manner will exist in the future.

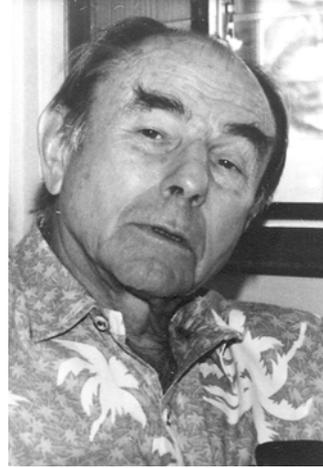
It is hoped that attendance will be great, morale high and suggestions for improvement freely expressed.

C.J. Lambertsen  
R.W. Workman  
E.L. Beckman  
J. Kinsey  
E. Ninow  
W. Mazzone"

*David Elliott (1972-1973) provided thoughts about the past-presidents who preceded him and who have deceased, ending with thoughts about his own tenure (see below).*



**Robert D. Workman, 1968-1969**  
*(Deceased).*



**Edward L. Beckman, 1969-1970**  
*(Deceased)*



**Heinz R. Schreiner, 1970-1971**  
*(Deceased)*



**Earl H. Ninow, 1971-1972**  
*(Deceased)*



**David H. Elliott, 1972-1973**

“The magnificent start given to the Undersea Medical Society by our Founder-President, Chris Lambertsen, was followed by years of great growth and development particularly stimulated by the subsequent Presidents and their Executive Committees. Alas the next four Presidents, Bob Workman, Ed Beckman, Heinz Schreiner and Earl Ninow, have each since deceased and so it is my privilege, as the first after Chris of the surviving Past-Presidents, to acknowledge the dedication, effort and many contributions of all who held this office before me. Together they molded the Society into the acknowledged focal point internationally for undersea medical science, research and development.

One highlight of my tenancy was the first issue of PRESSURE. It appeared in June 1972, edited by the Society's Secretary Eric Kindwall (President 1981-1982) and it contained the first of Chuck Shilling's regular and long-term selections of relevant Abstracts to be circulated to members. The newsletter was published by Joe Wheeler (Chairman of the Membership Committee and also a Corporate Member) who, in my view, has been insufficiently recognized for the vital support that he gave to the fledgling society in its early and impecunious days. His office in Connecticut Avenue regularly hosted our Executive meetings and it also held the entire membership list on some five hundred or more 5x8 cards in an old shoe-box. Simple but it worked.

My President's Message in that first issue of PRESSURE, mentions that the Society contributed to a symposium on "Dysbaric Osteonecrosis" in February at the University of Texas. This meeting was enhanced by a comprehensive annotated bibliography prepared by Chuck Shilling (who would later become our first Executive Director) and Margaret Werts.

The symposium, edited by Ed Beckman (President 1969-1970) and I, was an important milestone that was funded and published by NIOSH.

Several UMS members also participated in Chris Lambertsen's planning committee for the major three-yearly symposium UNDERWATER PHYSIOLOGY V. This was a major highlight of the year especially with the introduction of substantial review papers by invitation each followed by submitted papers on related aspects. It was managed in the Bahamas with his customary enthusiasm and efficiency by Peter Bennett (President 1975-1976). There Ken Donald received the Behnke Award for his wartime studies on oxygen neurotoxicity in Royal Navy divers. In all another memorable occasion.

Before traveling to the Symposium in the Bahamas some delegates had gathered in London to create the European Undersea Biomedical Society. At first it was proposed that the EUBS with Professor Hesser (UMS Executive Committee member) as its Founder-President could be a regional chapter of the UMS but, for tax reasons, the EUBS chose, before holding their first scientific meeting the following year, to become an independent affiliate of the UMS.

This year also saw the introduction of UMS problem-specific "Workshops" at which invited participants were expected to speak to a themed agenda. Among the first were "Labyrinthine Dysfunction in Diving" chaired by Joe Farmer (President 1986-1987) and the second was "Respiratory Problems with Underwater Breathing Apparatus" chaired at Harvard by Mark Bradley (President 1985-1986). The start of a series that deserves to continue indefinitely.

In those early years the existence of the Society depended heavily upon its affiliation with the Aerospace Medical Association, of which most of us were already members. A page of their journal was generously allocated monthly to news written by the UMS and each year, at the end of their 3½ day Annual Scientific Meeting (of which some 14.5% of papers were diving and hyperbaric) they generously let us have space for a luncheon with

keynote address and then the Thursday afternoon programme was just for ourselves and concluded with the business meeting. It was a small start but much appreciated.

Bob Hoke was our representative on the editorial board of AEROSPACE MEDICINE in which more than one third of published papers were related to underwater and hyperbaric environments. Thus it is not surprising that, under the chairmanship of the late Dick Buckles, the UMS Scientific Publications Committee was able to reach an advanced stage of planning our own quarterly scientific journal “UNDERSEA BIOMEDICAL RESEARCH” and of setting up the Editorial Policy Committee.

The dues had stayed at \$5 per year since 1967 but in 1973, at my last meeting in the Chair, they were increased to \$25 (though still only half that of many other societies) but even bigger changes were about to be made. There is no space here to acknowledge the great contributions made at that time by the many other members of the UMS and its committees. They know who they are and I will just say thank you for participating in our great team effort. I announced at our Annual UMS Meeting in Las Vegas that the Executive Committee had decided to establish professional management for the Society and a permanent office by entering into a contract with the Federation of American Societies of Experimental Biology (FASEB).

The UMS Gavel was then passed to President Johannes Kylstra.”



*Johannes A. Kylstra, 1973-1974*

(Received no entry)



*Dennis N. Walder, 1974-1975.*

“I well remember arriving in Washington for my first committee meeting having been elected President to be greeted by the Executive Secretary, Chuck Shilling, stating that a certain man was unexpectedly demanding a large sum of money for services rendered. The Society had been under the impression that these services had been gifted. As we were very impecunious at the time, I said that he must phone the man and say that I had refused to authorize payment. Therefore poor old Chuck had to make a very

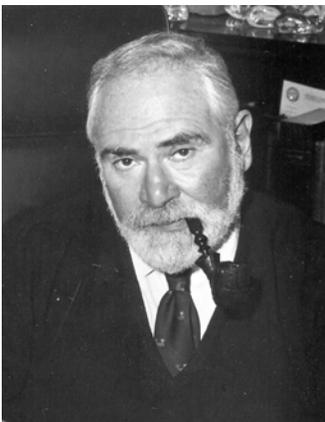
difficult phone call. Eventually it transpired that we ended up paying because a kind member of the Society organized an event which made a significant profit. With regard to the scientific aspects of the Society, in 1974 I was trying to get the international community interested in Dysbaric Osteonecrosis and the UMS was an excellent forum to get my message across to both compressed air workers and the diving fraternity. It started up a lot of interest and showed how woefully inadequate we were at controlling decompression sickness and its after effects. The UMS publications and symposia on this subject were a potent stimulus to set in motion in Britain a determination to formulate new Regulations both for compressed air workers and professional divers.”



*Peter B. Bennett, 1975-1976*

“I was President from 1975 to 1976 in the early days of the society. Previously in 1972 I had organized a HUMS International Scientific meeting at Freeport in the Bahamas which proved a great success with many Naval diving ships and demonstrations. While on the Executive, I also had endeavored to initiate a European organization – possibly a chapter. This proved not possible and with European colleagues we initiated the European society in 1972-73. While President of UHMS I set a campaign level for membership of 1000 members. I promised to provide champagne for the Executive should this be reached and I presented the cork at the annual meeting in 1973 having reached the target!

Subsequent to the formation of EUBS joint international meetings were proposed every 3<sup>rd</sup> year and have been carried out often since. The 1000 members gave UHMS the boost to develop further during the growth of diving research and hyperbaric oxygen therapy during the 1970’s and 1980’s when there was strong federal funding support. From 1976 as Past President until 1979, I was Editor, Undersea and Biomedical Research Journal.”



*Arthur J. Bachrach, 1976-1977*

“I brought up to the Executive Committee the problem that we were communicating to one another in the meetings, workshops and journals. I believed the need to bring information generated by our research to the true consumers – particularly the commercial and recreational diving communities - was critical. Inasmuch as members of these communities were not eligible for membership in the Society, I proposed an Associate Status, which the Executive Committee enthusiastically endorsed. John Naquin was our first really active chair of the Associates. Blue Cross was giving us a hard time in supporting HBO treatments and I appointed Eric Kindwall to head a committee to address the problem. OSHA was developing a set of regulations for the commercial diving community

which had such ridiculous provisions, as I recall, as banning J-valves on masks. I appointed several representatives of the Society to serve on the OSHA Study Group and served on it as well. I pissed off a few people at the annual meeting when I presented Ed Lanphier with the Behnke Award and remarked that, as he had become an Episcopal Priest, his first decompression report, after his ordination, read: “And on the third day, they ascended and they bent at the knee.” Needless to say I had a wonderful time! Let us not get into the battles I had with Chuck over implementing decisions the Executive Committee made with which he disagreed! He did get us started well.”



*James Vorosmarti, Jr., 1977-1978*

“Since my term as President was so long ago it is difficult to remember any details of that time. I have reviewed the issues of PRESSURE for my term, but in those days little or nothing was published about Executive Committee actions or recommendations to aid my memory. I do know that I started my term with one major goal, and that was to increase the advice and influence of the standing committees into the decision making process. I felt that they could be used a great deal more. There was a lot of expertise gathered in them and up until then they seem to have been ignored. The Publications Committee was very busy that year as I remember, putting together a list of Workshops desired in a prioritized list, so that funding could be found for them. The project for collecting

Seminal Documents was suggested by Bill Fife and work began on that project. The National Affairs Committee developed Policy and Guidelines for the establishment of Regional Chapters. The North Pacific Chapter was already in existence and there was strong support for Gulf Coast Chapter and some standard policies were required. The HBO committee was kept busy trying to educate the insurance companies concerning the use of HBO. One difficulty, which was not overcome that year, was that many of the recommendations of the committees were not acted upon because of the inertia of the executive staff and this was to continue for a few more years.”



*Herbert A. Saltzman, 1978-1979*

“During my tenure issues of medical therapy with hyperbaric oxygen became more important to the society. Accordingly, a name change occurred from “Undersea Medical Society to Undersea and Hyperbaric Medical Society”. Officers and committees expended great effort and time to establish, for the many Medical Certification organizations, relevant credentialing methodologies. That undertaking encountered resistance associated with structural inertia and the skepticism engendered by reports that, in an improbably wide variety of medical problems, patients improved significantly after exposure to hyperbaric oxygen. Fortunately, our organization had

the prestige and member skills to address this problem. We began the difficult task of choosing medical problems that clearly deserved treatment with hyperbaric oxygen and reimbursement from third party payers. At the same time we began to identify other medical problems for which evidence of specific benefit was insufficient to justify payment.

Chuck Shilling continued to provide the wisdom and skills needed to administer the society in a unique frugal style. Library, journal and meeting planning benefited from his expertise. During this time, planning began for the very successful 1980 International Meeting in Athens, Greece.”



*Jefferson C. Davis, 1979-1980  
(Deceased)*

*NOTE: This paragraph was provided by Paul J. Sheffield, Ph.D. “In Pressure [8(5), Oct 1979] Dr Jefferson C. Davis wrote: “I can summarize all my desires for this year as President of our young and exciting Society – Let’s relax and have fun attacking real-world problems together....Some matters I hope you will all ponder...are:*

1. How to expand our international influence and membership in a healthy manner.
2. Long-range planning for specialty certification of physicians in undersea and hyperbaric medicine.
3. What should be the scope, function and role of chapters of the UMS?
4. How can we vastly expand say to 50-75, our corporate sustaining members?
5. The role of the UMS in continuing medical education.
6. How can we better serve the needs of our basic scientists?
7. What shall be the role of the UMS in the development of ethical clinical practice of hyperbaric oxygen therapy?
8. What is the role and how can we better serve our Associates?
9. Should UBR (Undersea Biomedical Research) allow a regular Clinical Section?”

*“We are with the era in medicine I call, 'Everyone wants to regulate everyone else, whether they know anything about the subject or not.'”*

*Jefferson C. Davis, MD*

Dr Davis was a visionary who convinced the Executive Committee to put into place during 1979-1980 a number of pivotal events that would define the Society’s role in clinical medicine and advance hyperbaric oxygen therapy into mainstream medicine. The Society flourished under his leadership and benefited from his long-range planning.

In 1979, the Society matured as it dissolved its affiliation with the Aerospace Medical Association (AsMA) and rejected the notion of being affiliated with the American Physiological Society. (Dr Davis also served as AsMA President in 1982-83.)

He set into motion a quest for specialty certification of physicians in Undersea and Hyperbaric Medicine that would be approved by the American Board of Medical Specialties in 1989. The first certification exam would occur in November 1992.

He and the EC were strongly in favor of forming local chapters to meet regional needs of members. The North Pacific Chapter had already been approved, the Gulf Coast Chapter was officially recognized in 1979, and the Great Lakes Chapter was in the process of forming. As of 2006 there are 7 chapters.

UMS sponsorship of CME for diving medicine courses was expanded to include more hyperbaric medicine courses. Associates were offered separate sessions at the Annual Scientific meetings. Corporate Members began to rise, reaching 52 by 2006.

In 1979 the Society was recommending 28 indications for third party reimbursement. Complaints about inappropriate use of HBO resulted in careful review. In 1979, Medicare added osteoradionecrosis to the list of disorders that was reimbursable, expanding their list from 11 to 12 indications. The UHMS currently recognizes 13 pathologic entities for which HBO2 has substantial scientific support of therapeutic benefit.

Losing his battle with cancer on July 30, 1989, Dr Davis did not see all of his dreams fulfilled. But the events he put into place had a profound impact on the Society. His profound interest in both Diving Medicine and Hyperbaric Medicine endeared him to both groups and enabled him to bridge the gap between the two specialties. His clinical input made it possible for increased numbers of clinicians to join the Society, which justified a 1986 name change to Undersea & Hyperbaric Medical Society.”



*Paul Webb, 1980-1981*

“During my year the trend toward decreased activity and funding in diving medicine, saturation diving and such continued. At the same time there was increasing activity in hyperbaric oxygen therapy, and excellent committee work sorting the wheat from the chaff. I think the name change from UMS to UHMS came a bit later, but I was one of those who realized that the health of the society depended on encouraging the good clinical uses of hyperbaric O<sub>2</sub> therapy. My year began with induction to office in Greece, together with the International group; it was in early July and uncomfortably hot, but the Hilton hotel was almost chilly until the day the air conditioning broke down. Working with Chuck Shilling all year was wonderful. In his 80’s, as I am now, he was always up

beat and energetic.”



Eric P. Kindwall, 1981-1982

“During my year as president of the Society, we agreed to a request from the European Undersea and Baromedical Society to become an affiliate of the UMS and we also recognized the South Pacific Undersea Medical Society. However, I feel the events most important for me with regard to the Society took place before I became President.

In about 1971 while helping Dr. Ed Tucker, a neurologist, teach a course in diving medicine we felt that it would be helpful if the UMS were to set standards for such courses. Some courses were being offered that were thinly veiled diving vacations that could be written off as “attendance at medical meetings” for tax purposes.

Ed’s course was top notch as he took the course syllabus used at the U.S. Navy School of Submarine Medicine for diving medical officers and gave the same final exam, minus the helium section. Thus I set up the UMS Education and Standards Committee to prescribe course content and instructor competence. The UMS could then grant “approval” to courses that met the specifications and could be so advertised. That committee later became the Education Committee

When the AMA initiated their Continuing Medical Education program, I called on them in Chicago and persuaded them to recognize the UMS as a grantor of CME credits in the name of the AMA.

While serving as Secretary/Treasurer I felt the Society should have a regular newsletter to keep members in touch with what was happening in the field and I founded *Pressure* as its first editor. I chose the name *Pressure* because clinical hyperbaric medicine was rapidly developing and although we had not yet incorporated “Hyperbaric” into the Society’s name, I wanted a title to the newsletter that would encompass all who worked with increased atmospheric pressure.

In 1976, with the vital assistance of Jeff Davis, we decided to form the Committee on Hyperbaric Oxygen, 10 years before we became the UHMS. I became its first chairman. I was able to persuade the Blue Cross/Blue Shield Association in Chicago to recognize our report as its source document for determining reimbursement when it appeared in September of 1977.

Largely through the efforts of Chuck Shilling, I became the first editor of the *Hyperbaric Oxygen Review*, a journal consisting mainly of review articles with at least one original contribution with each issue. That journal was later melded into the UBR.

All of these accomplishments were made possible by the tireless work of others, including Jeff Davis, George Hart, Chuck Shilling and one of the Society’s early major

benefactors, Joe Wheeler of Wheeler Industries. Joe let us use his corporate offices as our first permanent headquarters before we moved to FASEB; he provided his secretaries as editorial staff for *Pressure*, funded its printing and generously provided funds for several of our early projects.”



*John Hallenbeck, 1982-1983*

“I was something of a caretaker President and I generally supported the day to day operation guided by Chuck Shilling during my term. My wisest initiative was to propose and support the candidacy of Fred Bove who succeeded me and became a highly effective activist President.”



*Alfred A. Bove, 1983-1984*

“My tenure was during a time of adequate support for research in diving medicine, and the growing efforts by the HBO community to achieve recognition by payers for HBO care. Two important issues were on the agenda that year:

First was the change of name from UMS to UHMS. This effort was initiated that year, and continued for several more years until it was approved by the trustees and the membership.

Second was the growing need to find a new executive secretary. Chuck was getting busier, the society was growing and there were many items that were in need of more attention. The process of identifying a replacement and defining the scope of the position was begun during my year, and continued into the next year for completion.

The president of 1983 also succeeded to the program directorship for the International Symposium held every 4 years. I became the program director for the Chairman Ninth International Symposium on Undersea and Hyperbaric Physiology and arranged to bring the meeting to Kobe, Japan, Sept, 1986 for the first joint meeting with our Japanese colleagues in the history of the UHMS. The Japanese were gracious hosts, provided substantial financial and logistic support for the meeting, and became lifelong friends of the UHMS.”



*Paul G. Linaweaver, Jr., 1984-1985*

“I have no record of when I was President of the UMS. The only thing I can remember is that I was the last President of the Undersea Medical Society (just prior to the name change).”



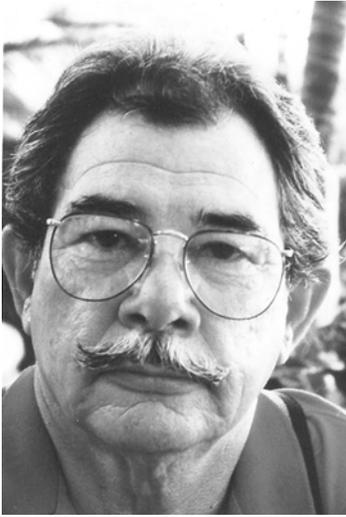
*Mark E. Bradley, 1985-1986*

“My tenure as UHMS President was a year of change for the Society. First of all, the name was changed from "Undersea Medical Society" to "Undersea & Hyperbaric Medical Society" in order to more accurately reflect the interests of the membership; Dr. Chuck Shilling, the first Executive Director of the Society announced his retirement. A search committee was formed to evaluate potential candidates for the position, and based on their recommendation, the Executive Committee appointed Dr. Leon Greenbaum to the position. Lastly, the 1986 UHMS meeting which was scheduled to be held in Europe was found to conflict with EUBS activities, so planning was undertaken to hold the meeting in Kobe, Japan.”



*Joseph C. Farmer, 1986-1987*

(Received no entry)



*George B. Hart, 1987-1988*

“If Memory serves, the following occurred on GB Hart's watch: Dues were raised to prevent bankruptcy, the meeting dates were changed from mid spring to the third week in June, and the organizations name was changed to UHMS to reflect the clinical application of Hyperbaric Oxygen. A failure: have an oversight committee (made of select past presidents) to periodically review actions of the presiding President and executive committee to prevent financially compromising the Society.”



*Richard D. Heimbach, 1988-1989*

“I am sorry for the delay but the event of most significance so overshadows all others in my time as President that it is all I will submit. It is also not at all pleasant, the main reason I have put off sending it to you.

Thirty minutes before I was scheduled to give the Opening Address for the annual meeting, interestingly enough in Hawaii, the phone rang in my hotel room. It was Jeff Davis. He had not come to the meeting because he had been experiencing some on-going abdominal pain for about three weeks and he was not up to making the trip. He told me he had seen a physician and the work up had shown that he had multiple lesions in his small bowel which were almost certainly metastatic CA, the origin of which was undetermined. I told him I would be on the

next plane home. Jeff, being Jeff, simply said, “And what are you going to be able to do for me when you get here?” He then asked me not to talk to anyone about it, except for David Elliott, if I thought it appropriate. I sucked it up, went downstairs and gave the opening address using all the skills I had learned in seven years of professional theater experience to hide what I was feeling. I felt I had done a tremendously good job of that until David Elliott came up to me immediately after the opening talk and asked, “OK, Dean, what’s wrong?” I told him and did carry on with the presidential duties the meeting called for but, obviously, my heart wasn’t really in it. Jeff died two months later.”

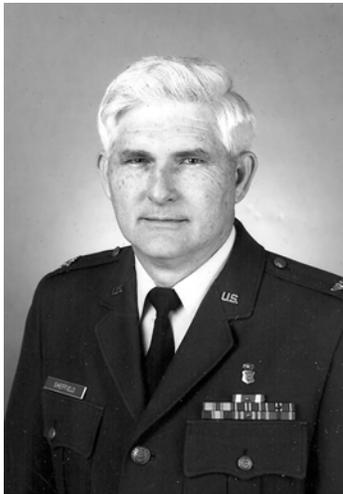


*Tom S. Neuman, 1989-1990*

“I guess the most important thing during my tenure was the challenge of Blue Cross/Blue Shield to stop reimbursement of HBO<sub>2</sub> treatments. It was because of that which caused the UHMS to basically write a monograph that allowed us to escape the noose that time around.

In addition, I started the Diving Committee because I thought it strange that we had a Hyperbaric Oxygen Committee but we did not have a Diving Committee, since we were equally allied to both fields.

Finally, that was the year of our meeting in Amsterdam and walking into the Reichmuseum and the UHMS people being the only people in it was nothing short of amazing.”



*Paul J. Sheffield, 1990-1991*

“My term as 24<sup>th</sup> President of the Undersea & Hyperbaric Medical Society was August 1990 through June 1991.

**It was a time of excitement!** The gavel was received from the 23<sup>rd</sup> UHMS President, Tom S. Neuman, MD, at the meeting in Amsterdam, The Netherlands during 11-18 August 1990. For the first time the UHMS had met with the European Undersea Biomedical Society (EUBS) and the International Congress on Hyperbaric Medicine for a five-day conference. The stated goals of our administration were to expand international membership participation in Society affairs, to facilitate interaction among members, and to encourage a spirit of cooperation as we went about Society business. A number of UHMS initiatives were

underway that would come to fruition in 1991 and beyond. Some of the initiatives spanned several presidents' terms.

**It was a time of growth!** In August 1990, Society membership included 1,579 Regular Members, 654 Associates, and 37 Students. During the next nine months, Society membership increased by 132 members, including 20 international members. The UHMS North Atlantic Chapter, which would later become the UHMS Northeast Chapter, was added to the existing chapters. Vice President Hideo Takahashi increased international member involvement in the Society. Dr Alessandro Marroni, Chair of the International Affairs Committee, reported that the European Committee of Hyperbaric Medicine had

been set up to develop criteria and conditions for HBO treatment. An affiliate of the UHMS, the Baromedical Nurses Association, reported an expansion of their membership to 138 members from the handful of dedicated nurses who had established the BNA in 1985.

**It was a time of struggle!** Funding for diving medicine research was declining. Concurrently, there was a ground swell of interest in hyperbaric medicine and this was reflected in the mix of UHMS membership. Four years earlier the name of the Society had changed from Undersea Medical Society to reflect the increasing presence of hyperbaric medicine. The number of clinical hyperbaric facilities in the USA had doubled in ten years to over 200. The number of international clinical hyperbaric facilities was also increasing.

Previously, Blue Cross and Blue Shield, the insurance intermediary for Medicare, had challenged the legitimacy of hyperbaric oxygen (HBO<sub>2</sub>) therapy and had threatened to deny reimbursement for UHMS-accepted indications. An effective effort led by President Tom S. Neuman to compile a rebuttal had resulted in a detailed, critical review of hyperbaric oxygen therapy that was published in 1991. [Hyperbaric Oxygen Therapy: A Critical Review. Camporesi EM, Barker AC, eds. Bethesda, MD, Undersea and Hyperbaric Medical Society, 1991.] This document provided a succinct compilation of previously peer-reviewed scientific literature for each disorder on the UHMS list of accepted indications. With that effort, the American HBO<sub>2</sub> reimbursement issue was put to rest for almost a decade.

Because of the threat on HBO<sub>2</sub> reimbursement, much of the Society's attention had been directed to hyperbaric medicine issues which caused the diving medicine community to be concerned about being left out. It was emphasized that UHMS is a scientific organization dedicated to the study of man under the sea and in other hyperbaric environments. The Diving Committee submitted a "diving medicine needs assessment survey" to agencies involved with dive training/certification, publishing, and other services to divers. The first official meeting of the committee to formulate actions in response to the survey results was on June 20 1991. Workshop Committees chaired by Drs Claus Lundgren and Caroline E. Fife approved 2 workshops in diving physiology and medicine. A workshop on Diagnostic Criteria for Dysbaric Illness of the Nervous System was chaired by Drs James Francis and David Smith. A second workshop, "What is bends?" was held in Shimizu, Japan and chaired by Drs Ichiro Nashimoto and Ed Lanphier.

**It was a time of controversy!** Since its inception in 1967, our Society has never gone lacking of opinions, no matter what the subject. In 1991, there were two recreational diving controversies that resulted in lively exchanges of ideas. One controversy was about "nitrox" being used by recreational divers. The controversy had both technical and political aspects. The technical issues dealt with the hazards of handling oxygen and the risk of oxygen toxicity. Technically, the term "nitrox" applied to the gas used in shallow undersea habitats that was a nitrogen-oxygen mixture with lower oxygen fraction than air. The political issue was that the use of enriched air was outside the well-defined

envelope of recreational diving. The term “enriched air” was coined to make it less intimidating. The goal of oxygen-enriched air was to reduce decompression risk and allow more bottom time. There were multiple views expressed in *Pressure* [Pressure 20(4), July/August 1991] but the efforts of Dr.’s R.W. Hamilton and Morgan Wells were instrumental in generating acceptance for the use of oxygen-enriched air by recreational divers.

A second controversy was over the UHMS flying after diving (FAD) guidelines. Beginning in the 1960s the literature became filled with FAD “rules” with surface intervals ranging from zero to 24 hours. Few had been human-tested. There were so many “rules” that a conscientious recreational diver had difficulty sorting them out. There were both military and commercial FAD recommendations, but US Air Force and DAN treatment data indicated that these were not adequate for recreational divers. In 1989, the UHMS assembled international decompression experts in a workshop to review and update the fundamental issues of decompression problems related to FAD. As chair of the workshop, Dr PJ Sheffield published the consensus of experts as a guideline for recreational divers. The publication soon became the focus of controversy. The consensus of experts was to: (a.) Wait 12 hours surface interval after up to 2 hours of no-stop diving within the last 48 hours; (b.) Wait for 24 hours surface interval after multiday, unlimited diving; and (c.) Wait 24-48 hours surface interval after dives requiring stops. Scuba certifying agencies adopted the UHMS guidelines. This elicited an immediate objection on the grounds that the DCS risk of FAD was too low to warrant such a long delay and would result in lost business for island diving resorts. To consider these concerns, we reconvened the workshop at the 1991 Annual Scientific meeting in San Diego, California, and included representatives of the scuba certifying agencies and those who had objected to the original consensus opinion. New DAN treatment data were presented. At the end of the day, the experts concluded that the original recommendations should stand, but the objections still remained. Dr Peter Bennett of Divers Alert Network (DAN) saved the day by agreeing to publish a DAN recommendation that divers should wait at least 12 hours after a single no-stop dive and wait more than 12 hours after repetitive dives, decompression dives, and multiple days of diving. This allowed the diver to choose his or her own preflight surface interval, which made the hotel industry happy. DAN subsequently funded a series of trials during 1992-1999 at Duke University. The DAN 2002 Consensus Guidelines for Flying after Recreational Diving suggested that a diver should wait a minimum preflight surface interval of 12 hours after a single no-stop dive and wait at least 18-hour surface interval after multiple dives per day or multiple days of diving. Decompression stop dives are not addressed. [Sheffield PJ, Vann RD, eds. *Flying after Recreational Diving Workshop Proceedings*. Durham NC: Divers Alert Network, 2004.] It is noted that the DAN 2002 guidelines are close to the consensus of experts at the 1989 UHMS workshop.

**It was a time of expanding professionalism!** Yeoman efforts by many of our members to establish board certification finally started bearing fruit in 1991. Certification had generated a plethora of views, some of which were presented in Dr. Kelly Hill’s *Gray Matters* column in *Pressure*. [Pressure 20(2) Mar/Apr 1991] Certification of hyperbaric physicians, nurses, and technologists became one of the UHMS Executive Committee’s

top priorities. Certification was both meaningful to our members and important to our professional colleagues in mainstream medicine.

**Certified Hyperbaric Technologist.** Under the leadership of Dick Clarke and Paul C. Baker, the UHMS Associates Group worked with the National Board of Diving and Hyperbaric Medical Technology to create certification in hyperbaric technology. They began accepting applicants on March 1, 1991. Fifty applicants took advantage of the "Grandfather Clause" that acknowledged our current training and credentials to challenge the exam at the San Diego Annual Scientific Meeting in June 1991. This author is proud to hold CHT number 006. Dick Clarke, Paul Baker and their staffs are credited with making Certified Hyperbaric Technologist (CHT) happen.

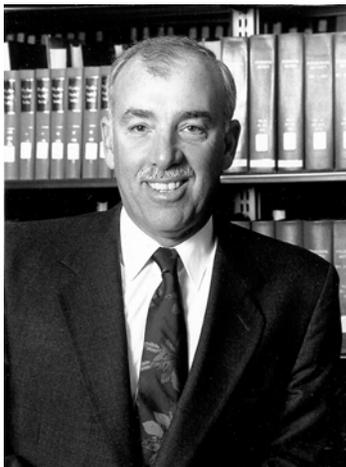
**Physician Certification in Undersea & Hyperbaric Medicine.** An initiative that started in 1984 became a reality in 1991. For many years, the UHMS Executive Committee had actively pursued physician certification in undersea and hyperbaric medicine. In 1984 through an initiative of the UHMS, the American College of Undersea and Hyperbaric Medicine (ACUHM) [not to be confused with the American College of Hyperbaric Medicine] was organized and incorporated separately from the UHMS. At that time, the President of ACUHM was Jefferson C. Davis, MD, who worked diligently to have hyperbaric medicine incorporated into mainstream medicine. ACUHM submitted a proposal to the American Board of Medical Specialties (ABMS) and the American Board of Preventive Medicine (ABPM) requesting approval of a Certificate of Added Qualification to be awarded after a candidate's successful completion of acceptable training and a certification exam. Losing his battle with cancer on July 30, 1989, Dr Davis did not see his dream fulfilled. However, within 2 months of his death (September 21, 1989), the ABMS accepted his proposal by greater than two-thirds vote of the 23 ABMS-recognized specialties. Dr. Richard D. Heimbach was then appointed as UHMS Liaison Officer with the ACUHM to follow up on the action. Dr. Edward Thalmann led the exam writing effort in 1991, but the first certification exam occurred in November 1992. As a first effort, the ABPM offered a Certificate of Added Qualification in Undersea Medicine. Despite hyperbaric medicine questions being on the exam, the ABMS would not accept hyperbaric in the title of the certificate. It would take another seven years for the American Specialty Boards to acknowledge hyperbaric medicine as a medical subspecialty and offer subspecialty certification in undersea and hyperbaric medicine.

In March 1999, ABPM received approval to change the name of its subspecialty certification in Undersea Medicine to Undersea and Hyperbaric Medicine to accurately reflect the expansion of practice during the past decade that included regular use of hyperbaric oxygen therapy for a variety of disorders. In March 2000, the American Board of Emergency Medicine (ABEM) received approval from ABMS to formalize a collaborative arrangement with ABPM to offer the Undersea and Hyperbaric Medicine subspecialty certification examination to its diplomates. Under this agreement, ABPM would also offer the exam to other ABMS-member board diplomates who fulfilled the eligibility requirements.

**Certified Hyperbaric Registered Nurse.** Baromedical Nurses Association (BNA) developed the hyperbaric nursing certification exam. In 1991 nursing certification was discussed, but it would be 1995 before the test bank of several hundred questions was ready to submit to the National Board of Diving and Hyperbaric Medical Technology (NBDHMT) for validation and administration of the certification exam. Future successful candidates would receive the designation of Certified Hyperbaric Registered Nurse (CHRN).

**It was a time of concern!** There was concern about the safety of new hyperbaric facilities because entrepreneurs were entering the market. The concern was that the profit motive could overwhelm their sense of safety. As Chair of the UHMS Safety Committee, W. Tom Workman compiled a hyperbaric facility accident/incident report of accident information from nearly 80 hyperbaric facilities worldwide. These data would become the basis of subsequent publications on hyperbaric chamber fires [Sheffield PJ, Desautels DA, Hyperbaric & Hypobaric Chamber Fires: A 73 Year Analysis. Undersea Hyperb Med 24(3): 1997; 153-164.] and operational chamber safety [Workman WT. Hyperbaric Facility Safety, A Practical Guide. Flagstaff, AZ: Best Publishing, 1999]. In 1991, the Committee published safety guidelines for monoplace facilities. [Weaver LK, Strauss MB. Monoplace Hyperbaric Chamber Safety Guidelines. Kensington, MD: Undersea Hyperbaric Medical Society, 1991] Multiplace chamber guidelines were published three years later [Safety Committee of the UHMS. Guidelines for Clinical Multiplace Hyperbaric Facilities. Kensington, MD: Undersea & Hyperbaric Medical Society, 1994].

**It was a time of jubilation!** The UHMS Executive Committee provided outstanding guidance in setting a course that helped us meet the needs of our members. Dr Leon Greenbaum Jr, Executive Director, Jane Dunne, office manager, and their UHMS home office staff gave excellent support. Dr Claude Piantidosi, the Program Chair, organized a marvelous UHMS Annual Scientific Meeting in San Diego, California during June 19-23, 1991 where the gavel was passed on to the 25<sup>th</sup> UHMS President, Paul Cianci, MD.”



*Paul Cianci, 1991-1992*

“I lost a great deal of hair. I traveled a lot.

More seriously, we were able to effect a defeat of the Blue Cross/Blue Shield attempt to destroy hyperbaric medicine. This was the product of the work of many but did come to fruition during my time as president.

An additional event was the accommodation of the UHMS with the American College of Hyperbaric Medicine. (Prior to this time) animosity and ill will had been the case. We were able to bring the two groups together, and that has eventuated into the college becoming a much more legitimate organization, staffed and run by people who were members of both groups.

I'm not sure that this occurred during my time, but I did make the recommendation that the presidency be extended to a two-year period in order to allow for better utilization of the executive skills of the president. Prior to that time, the duration was one year, and it took you about 6 to 8 months to get your feet on the ground and then you were out. I think this has resulted in a much tighter executive control of the organization and its long term goal. I also initiated a dialog with the American Diabetes Association, ultimately resulting in publication of a chapter on adjunctive hyperbaric oxygen therapy in the 'diabetic foot' by Levin."



*Jon T. Mader, 1992-1993  
(Deceased)*



*James Clark, 1993-1994*

“During my tenure as the last of the one-year UHMS Presidents, many of the significant events that occurred were placed into motion by my predecessors. An important historical event was the purchase of the then new office building in Kensington that released the Society from the cycle of annually increasing rental fees at the old office building in Bethesda and allowed an upgrading of office space, including the establishment of the Charles W. Shilling Library.

Another significant function was facilitation of the recent incorporation of *Undersea Biomedical Research* and the *Journal of Hyperbaric Medicine* into a single new journal, *Undersea and Hyperbaric Medicine* with Dr. Hugh Van Liew as Editor-in-Chief. An important

initiative during my administration as a reaction to the then ongoing health care debate in Congress was the establishment of a Prospective Clinical Trials Committee chaired by

Dr. Lindell Weaver. I was impressed by Dr. Weaver's efforts to develop a database designed to evaluate the efficacy of hyperbaric oxygen therapy in carbon monoxide poisoning. Subsequently, Dr. Weaver and his collaborators successfully performed a double-blind, randomized trial that demonstrated hyperbaric oxygen therapy significantly reduced the risk of delayed cognitive sequelae caused by carbon monoxide poisoning. Although the efforts of the Prospective Clinical Trials Committee enjoyed limited success in stimulating the performance of similar trials relevant to other indications for hyperbaric oxygen therapy, it focused attention on the continuing requirement for such studies."



Richard Moon, 1994-1996

"Looking through some of my old notes from when I was President of the Society in the 1990s is exactly like rummaging through a shoebox full of ancient family photos. Although I held office just over a decade ago, it is hard to believe that some of the innovations from that time, such as the ability to communicate with the Head Office via e-mail and construction of a UHMS web page, were actually new.

For some time, members and ex-Presidents had known that the term of office (one-year) provided barely enough time for an elected President to know what was going on, much less create new initiatives. The Executive Committee had proposed a two year term, and finally it had come to pass. In the spring of 1993 I was in an airport on my way to a meeting, when I was paged via the public address system. I was relieved to find out that it wasn't a family emergency but only temporarily. The caller turned out to be Lee Greenbaum (how he knew where to find me I have no idea), telling me I had won the election. I was about to become the first UHMS two-year President.

It was hard work but worth every moment. Several events stick out in my mind during my term, which began in 1994: opening the Shilling Library in Kensington, Maryland (with Chuck himself in attendance) and helping to select Tom Neuman and Nancy Rufty Schandelmeier as the new Editors, respectively, of *Undersea & Hyperbaric Medicine* and *Pressure*. Through Nancy, I was able to initiate a regular President's column, which continues to this day. Other memorable events included responding to the Agency for Health Care Policy and Research regarding their review of hyperbaric oxygen therapy, spearheading a joint meeting of the UHMS and the Aerospace Medical Association and facilitating the embryonic research fund (now the UHMS Research Foundation).

One of my other priorities was to work toward improving the service for members outside the US. Two parts of the job were especially enjoyable. The first was appointing competent, enthusiastic people to head committees, and watching them succeed. I am

extremely grateful to all of those people who made things happen for the Society. The second was working with the permanent UHMS staff, at that time consisting of Lee Greenbaum (Executive Director), Ann Barker (Managing Editor of the Journal), Jane Dunne (office manager), Denyse Spence, Kathy Davidson (Librarian), Sharon Simons and Hilda Auricchio, all of whom played key roles in making the Society function. In 2007 it is difficult to believe that the number of people working at UHMS Headquarters in the mid 1990s actually represented a reduction from just a few years before. This turned out to be the beginning of a trend. The continued decrease in permanent staff while maintaining the same high level of membership service was made possible by the internet.

The privilege of representing the UHMS was also enormous fun, and the beginning of several friendships. In 1995 I was kindly invited by the Hyperbaric Technicians and Nurses Association to attend their Annual Meeting in Melbourne, Australia. This was immediately followed by most enjoyable visits to hyperbaric facilities in Adelaide and Perth. Perhaps the most incongruous event of my presidency occurred during a visit to Riyadh, Saudi Arabia, where I was asked to address the local dive club. Given its location in the middle of the desert hundreds of miles from water, expecting a group of half a dozen people, I was shocked to find an audience of nearly 100 recreational divers.

Looking back at the more than 11 years that have passed since I turned the gavel over to Steve Thom, I can only be optimistic about undersea and hyperbaric medicine and the UHMS. The Society has taken the lead in developing guidelines, providing a forum for young investigators to present and to receive feedback, promulgating scientific knowledge and much more. In my final speech as President, at the Annual Meeting, I mused that in order to exploit fully the therapeutic value of hyperbaric oxygen, we needed more outcome studies, a better understanding of the pathophysiology of the diseases that we treat and elucidation of the mechanisms of action of HBO<sub>2</sub>. In the years since, although we still need much more, it is gratifying to see that skilled investigators are making progress on all of these fronts.”



*Stephen Thom, 1996-1998*

“Memories of the major events during my tenure as president are many. This was an exciting time when efforts by a large number of people were about to yield important things for the society and for the field of Hyperbaric Medicine. With the support of the Executive Committee, for example, we established the Research Foundation. In the capable hands of Richard Moon the Foundation has slowly grown over the years and continues to support research, although the level of support has been modest.

Also during my tenure the first handbook of the Operations Subcommittee was drafted, something we all believed was an important contribution to clinical

hyperbaric medicine. With the strong support of our brethren in Aerospace Medicine, it was during my tenure that we petitioned the American Board of Medical Specialties to broaden the scope of the sub-specialty “Undersea Medicine” to “Undersea and Hyperbaric Medicine”. While this may seem a nuance, the change was critically important to establish a subspecialty certification that was relevant to clinicians involved in day-to-day hyperbaric oxygen therapy. This last effort did not directly help the world-wide UHMS membership, but I think our work to establish this benchmark for physicians in the United States has helped health professionals world-wide with formalizing training and certification processes.”



*Caroline Fife, 1998-2000*

“During my tenure several events stand out...

#### **Threatened Reduction in Payment for HBOT**

There was a threatened reduction in payment for HBOT by more than 70% to a rate of \$134.27. This was the result of an error in the calculation by HCFA of the ratio of cost to charge data. Using accurate cost to charge data, the appropriate reimbursement should have been approximately \$374.00, in order to cover the actual cost of delivering this care. A national survey was launched to obtain accurate information on cost for HBOT services. This was provided to the Lewin group which worked with CMS to demonstrate errors in the method by which the APC was determined. A correction was made in this facility reimbursement policy which likely saved HBOT as a clinical service in the U.S. It was estimated that the majority of facilities

in the U.S. would have closed with such a significant reduction in payment.

#### **HCFA and Coverage Policy**

In **March 1999** the UHMS discovered that a new "35-10" was being prepared. Problems identified were: deletion the word "preparation" from the indication known as "Preparation and preservation of compromised skin grafts," errors in the covered ICD9 codes to be used for billing, mandated physician credentialing and mandated physician attendance. **The UHMS had never been contacted about the preparation of this document, and implementation was scheduled for April 1<sup>st</sup>.**

We scheduled the first possible meeting with Coverage Policy for April in hopes of delaying the implementation of the new guidelines. Despite receiving written letters outlining the flaws in the document, and before our meeting could take place, *HCFA still sent the new 35-10 on to the regional carriers in the second week of April for implementation on May 1st.*

**At an April 21, 1999 meeting:** The UHMS presented clear evidence that the deletion of preparation was a change in policy but the OCP insisted that it was a “clarification” and that physicians practicing hyperbaric medicine had “misinterpreted” the coverage policy for 20 years. A summary of the scientific literature was presented and the OCP did not indicate that they would review it. No commitment was made regarding whether they would continue to allow patients who had not yet undergone a graft to receive hyperbaric oxygen therapy under "Prep for Graft." We offered to provide patient selection criteria and HCFA indicated they were not interested. **HCFA ignored our request to delay 35-10 for six months to sort through all the credentials and coding issues, and issued a delay of only 8 weeks to JULY 1st.** This worsened the confusion among the Regional carriers because the request for this delay could not be processed through all HCFA channels by the previous May 1st implementation deadline, *leaving national confusion as to whether the policy was or was not in effect.* **On May 20, 1999: at a meeting arranged by Hogan and Harston, the UHMS/HOTA met with** the American College of Emergency Physicians, the American Hospital Association, the American College of Chest Physicians, the American College of Physicians, and the American Medical Association. *As a result of having these organizations with us, in a group phone call, the OCP agreed to a six month delay in implementing 35-10.* We agreed to meet by November to discuss Prep for graft, but scheduled in interim meeting in October to review progress on Physician attendance.

**On October 12, 1999 the UHMS, ACHM, AMA and ACEP meet with HCFA OCP:** The AMA presented their position that credentialing was not the purview of HCFA and HCFA officials indicated that HCFA would not pursue credentials requirements. The results of the Task Force on Physician Attendance were to be discussed, but the HCFA OCP Medical Director suddenly announced that they had *already decided* to create a new code for "non attendance." *This decision was made prior to the results of the task Force being presented, so the recommendations of the group were completely ignored.* **In November, 1999: HCFA published the new CPT code for non attendance of HBOT in Federal Register:** the Texas Regional carrier stated that they will not pay for un-attended HBOT, while in another state, the Regional carrier was no longer paying for attended hyperbaric oxygen therapy, implying that non-attendance is the norm. Just as the UHMS warned, confusion ensued as physicians and hospitals question the idea of requiring that a physician bill for NOT providing a service in order to allow the hospital to bill. **On Jan 24, 2000, UHMS/HOTA meet with OCP:** We began all over with the Acting Medical Director of the OCP, emphasizing the history of “prep for graft.” Data on the benefits of HBOT for wound healing were presented by nationally renowned experts. We appealed for 35-10 to be withdrawn again until the issues surrounding it were resolved and were told that our data regarding “prep for graft” would be reviewed by the OCP. **In Feb 2000:** HCFA published a program memorandum to delay a new 35-10 indefinitely, but in the same document, explicitly ends coverage of “prep for graft” except in cases where a graft had already failed. *This was EXACTLY what we had asked HCFA not to do until the promised data review could take place and a decision made based on scientific evidence. After many more months of effort, the UHMS was able to secure coverage for Diabetic Foot ulcers which is currently in effect.*

## **Physician attendance**

HCFA (now CMS) proposed to “zero out” reimbursement for physician supervision of HBOT (CPT Code 99183), with the rationale that there was no physician work involved in chamber supervision. The UHMS proposed a change in the verbiage regarding attendance. The importance of this was that since HBOT is a treatment which is “incident to” the physicians’ service, if there is no physician service, then there is no mechanism for payment of any HBOT service. The UHMS performed an analysis of the physician work component, and created a survey of the membership, thanks to the Physician Supervision Task Force.

### **Change Request 796**

Physician Supervision Requirement--For HBO therapy to be covered under the Medicare program, the **physician must be in constant attendance during the entire treatment**. This is a professional activity that cannot be delegated in that it requires independent medical judgment by the physician. The physician must be **present, carefully monitoring the patient during the hyperbaric oxygen therapy session and be immediately available should a complication occur**. This requirement applies in all settings: no payment will be made under Part A or Part B, unless the physician is in constant attendance during the HBO therapy procedure.

This recommendation was presented to HCFA, but they ignored our advice and in **November 1999, HCFA published a new CPT code for non attendance of HBOT in Federal Register**: Just as the UHMS warned, confusion ensued as physicians and hospitals question the idea of requiring that a physician bill for NOT providing a service in order to allow the hospital to bill. Eventually in January 2000 this verbiage was withdrawn.

### **The OIG**

In the midst of all the difficulties with HCFA over attendance and coverage policy, the OIG launched an investigation into the use of HBOT. At our initial meeting with them, they stated that their primary interest was nursing homes billing 99183, which we felt certain represented topical oxygen being billed as HBOT. However, it was through the OIG that the UHMS learned of the proposed changes in 35-10. It is our opinion that the office of Coverage Policy prevailed on the OIG to instead investigate the use of HBOT for “prep for graft.” There ensued a year long investigation which eventually led to a nationwide chart review and a subsequent document published by the OIG suggesting that much of the HBOT performed in the US was billed fraudulently. This despite the fact that the response rate of patients to HBOT was over 70%, a response rate which the OIG investigators said was the highest they had seen in any of their investigations. The OIG requested an evidence based review of all HBOT literature, which Mr. Dick Clarke provided within their two week time frame, a heroic effort on his part. The OIG representatives regularly attended our meetings at HCFA headquarters with the Coverage Policy group, further suggesting that their investigations were running simultaneously.

## **Ethics**

As a result of the increasing use of HBOT for unproven indications, I created a task force on Ethics and hired two professional ethicists from Baylor College of Medicine and UTHSC, Houston to review the status of HBOT for unproven indications. While their report was controversial, they applied the current ethical standards for unproven therapies to HBOT and made several recommendations upon which the UHMS acted. **The most important recommendation by the Ethics committee was to have the next UHMS committee report to be created as an Evidence Based Review of the literature. Dr. John Feldmeier did superb job with this and it is now the standard for the committee report.**

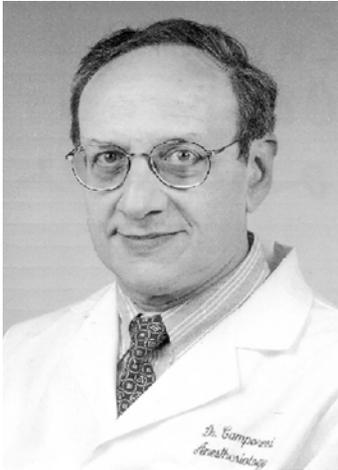
**Other contributions were to define the components of informed consent for off-label use, to define what is “research” requiring an IRB, to recommend that the UHMS define a standard of evidence that needed to be met for an indication to become “accepted,” and to encourage the creation of registries for rare indications which would not be amenable to RCTs.**

## **The FDA and HBOT Advertising**

Information about hyperbaric oxygen therapy was becoming increasingly available on the Internet, but the quality, accuracy and truthfulness of this information varied considerably. I have also received much E-mail and some phone calls from people around the country regarding hyperbaric services, complaining about misleading claims, or to request information from the UHMS regarding published literature. The FDA has received similar calls. Tom Workman and I met with three FDA officials from the Center for Devices and Radiological Health, Office of Compliance. They emphasized what we already knew, which was that according to the 510(k) pre-market notification process, all hyperbaric chambers are approved ONLY for those conditions that are listed as approved in the UHMS Hyperbaric Oxygen Therapy Committee Report. A chamber could certainly be approved to treat an indication not on this list, but this would require that data to support the use of HBOT in that condition be submitted to the FDA for review. **Despite this limitation, many facilities, clinicians and manufacturers were freely advertising the use of HBOT to treat conditions that are not included in the UHMS list of approved indications. Such marketing was not in compliance with the FDA requirements.** The FDA emphasized that **advertising hyperbaric treatments for unproven indications violates FDA regulations.** Furthermore, per the verbal comments of the officials we met with, **a facility or clinician can not disseminate information regarding on-going clinical investigations.** Applying to the field of hyperbaric medicine the same requirements as other Class II medical devices, research on conditions not currently approved by the UHMS requires an IDE (Investigational Drug Exemption). So far, the FDA stated that they had received only one request for an IDE, and it was granted. IDEs are site specific, so if one facility has an IDE to investigate a new use of HBOT, another facility would need to apply for an IDE even if investigating the same application.

**In my President’s column in Pressure, we stated that the UHMS expected all U.S. corporate sponsors and individual members to comply with the FDA guidelines on**

**advertising and promotions.** Non-U.S. manufacturers, facilities and clinicians are expected to comply with the regulations of their own countries.”



*Enrico Camporesi, 2000-2002*

My tenure was spent devising ways to meet financial obligations. Working with our Executive Director, we met our obligations, but only by using our investment funds. By the time my tenure ended, our investment funds were all but gone, but we had begun an upward climb to financial solvency. Additionally, I was instrumental in changing the format of our annual meeting which, with some tweaking in the following years has resulted in a format that is being used by many professional societies. My two years as your President were interesting and rewarding in many ways.



*Neil Hampson, 2002-2004*

“When I assumed the UHMS Presidency in San Diego in 2002, the membership was disenchanted with the poor fiscal situation of the Society and fractured into a number of small groups. Many members predicted that I might be the last President of the UHMS. During my term, Executive Director Don Chandler and I were able to restore both financial health and morale through a number of initiatives, some of which were actually unpopular at the time. We authorized a retrospective audit of Society finances which demonstrated no evidence of the fiscal malfeasance that some had suspected, instituted a prospective annual audit program, raised dues for the first time in over a decade, and initiated the transfer of the UHMS library holdings to Duke University, a move that later allowed the Society to sell its old office in Kensington, Maryland at significant gain. During my

tenure, I attended numerous hyperbaric meetings across the country and around the world, promoting the Society and recruiting members. My proudest moment was when I passed the gavel to Lin Weaver in Sydney in 2004, having accomplished a major turnaround of the Society and avoiding being the last President!”



Lindell Weaver, 2004-2006

“I had the advantage of following Neil Hampson, MD, whose leadership of the UHMS pulled them out of economic problems and laid the foundation for many changes effected during my tenure. As a president-elect, I recognized that several aspects of the UHMS should be changed. The Constitution and By-laws had served the UHMS well, but I felt they should be modernized. Through the efforts of many, most notably chair of the By-Laws Committee, Ron Bangasser, MD, new, modern By-Laws were adopted by the UHMS. These new By-Laws give the Board of Directors more authority and the UHMS can react much more swiftly when necessary than previously.

Also during my tenure as President, we moved our Library Holdings to the Duke University Medical Library. This was done to make our office more efficient, to preserve and categorize our holdings properly, and to make available our material to anyone in the world. Duke University, in return, offered library privileges to any UHMS member, which is a terrific benefit. Although, not yet complete, the Board agreed to out-source our website, which, when complete, will bring the UHMS website up to modern expectations.

I was fortunate to have two very successful Annual Scientific Meetings, one in Las Vegas, the other in Orlando, during my tenure in office. Yet, I cannot really take credit for the success of these meetings since these locations, and work to make them successful occurred long before I was President. In conclusion, it was, indeed, an honor to have served as the UHMS President. The level of volunteerism within the UHMS is truly remarkable and this effort on the part of many led to many changes that benefited the organization. I do thank all the members that made my tenure successful and rewarding.”

### **UHMS Seeks Approval of Specialty Board Certification in Undersea and Hyperbaric Medicine**

The afore mentioned 1987 issue of *Pressure*, that highlights the UHMS 20<sup>th</sup> anniversary reported that in 1985 The Executive Committee mandated the establishment of the American College of Undersea and Hyperbaric Medicine to “seek certification procedures for physicians in undersea and hyperbaric medicine.” The approach that year was to apply for a Certificate of Added Qualification (CAQ) from appropriate medical specialty boards as defined by the American Board of Medical Specialties (ABMS). By 1987 several of the 23 primary or conjoint boards had expressed interest, but had not, as yet, established a CAQ in Undersea and Hyperbaric Medicine.

As reported in the Society's application to the ABMS to revise the subspecialty certification in undersea medicine it is reported that in 1989, the American Board of Preventive Medicine (ABPM) received approval from the American Board of Medical Specialties to offer a Certificate of Added Qualifications in Undersea Medicine. The first examination for this certification was given in November 1992. In 1993 interest was expressed by several Member Boards regarding changing this certificate to a Certificate of Special Qualifications (CSQ) in order to make it available to Diplomates of all ABMS Member Boards.

During 1993, two meetings were held and a survey was sent to the membership of the Undersea and Hyperbaric Medical Society. Based on the results of these undertakings, on February 4, 1994, the ABPM filed a letter of intent to change the Certificate of Added Qualifications in Undersea Medicine to a Certificate of Special Qualifications with the ABMS. This letter was circulated to the ABMS members on February 22, 1994. Since that time, the ABMS has discontinued the use and differentiation of CAQ and CSQ. Another survey of interest was circulated that showed even greater interest in certification than was previously evident.

The subspecialty of medicine referred to as Undersea Medicine had advanced considerably over the previous ten years. In particular, the use of hyperbaric oxygen therapy and the science supporting this modality of therapy had become an established part of medical practice. Consequently, the ABPM decided to proceed with a formal proposal for a modification of the current subspecialty certificate for approval for a change in name to Undersea and Hyperbaric Medicine. Stephen R. Thom, M.D., Ph.D. once wrote an article for *Pressure* to explain the subspecialty of Undersea and Hyperbaric Medicine...part of his article follows:

“Questions have arisen regarding the relevance, and perhaps merits, of the subspecialty board certification in Undersea and Hyperbaric Medicine that is recognized by the American Board of Medical Specialties (ABMS). Clearly, physicians worldwide do not need to hold a certification recognized by this organization. In the United States, however, clinical privileges within a hospital may sometimes be granted to only those physicians with ABMS certification. Certifications by alternative bodies have a limited value in this regard.

The requirements for ABMS recognition of a medical specialty are very stringent. In many ways, ABMS approval represents a benchmark for a clinical specialty in American medicine. The UHMS leadership sought ABMS recognition to provide a pathway for standardizing high quality clinical care, and to solidify the perception that hyperbaric oxygen therapy was within the mainstream of modern medical care.

In November 1992, the American Board of Preventive Medicine (ABPM) administered the first examination for certification in Undersea Medicine. As hyperbaric medicine was not a component of the certification, it had

limited appeal and only a small number of individuals took the examination. The governing boards of the ABPM and UHMS subsequently worked to broaden the scope of the certification process to Undersea and Hyperbaric Medicine, and this change in name for subspecialty certification was granted by ABMS in March 1999. In March 2000, the ABMS approved a request by the American Board of Emergency Medicine (ABEM) to offer the same subspecialty certification to its Diplomates. Therefore, representatives from AMPM, UHMS, and ABEM now compose the certification examinations.

(Until recently there were) two eligibility pathways by which a candidate (could) gain admission to the certification examination in Undersea and Hyperbaric Medicine. For both pathways, an applicant (had to) have current certification from one of the 24 primary member boards of the ABMS. The first pathway is for the applicant to have completed an approved fellowship in Undersea and Hyperbaric Medicine. Through 2003, there (was) also a practice pathway wherein a physician (could) petition for eligibility based upon clinical experience in the field. The detailed requirements, application forms, and examination content outline are available on the web site of the American Board of Preventive Medicine ([www.abprevmed.org](http://www.abprevmed.org)).”

### **The UHMS’ Historical Link to the American College of Hyperbaric Medicine**

As earlier reported, in 1985 the Executive Committee mandated the establishment of the *American College of Undersea and Hyperbaric Medicine* (ACUHM) to “seek certification procedures for physicians in undersea and hyperbaric medicine.” Dr. Jefferson Davis set up the ACUHM that, reportedly, was incorporated in Delaware. The idea was that the ACUHM would write a certification exam for credentialing purposes.

The overriding reason for the ACUHM was that if someone were not granted a certificate, they could sue the, then, UMS for being capricious and arbitrary, or for restraint of trade. The ACUHM would not have the deep pockets to make a lawsuit worthwhile and the UHMS would then be protected. Meanwhile, Dr. Davis got busy pushing the American Board of Preventive Medicine to offer a real board exam that would be recognized by mainstream medicine. The incorporation of the ACUHM eventually ran out, was not pursued, and the ACUHM languished. It was not until 1999 that Jeff Davis’ early work (and that of several other UHMS members) saw fruition with the ABPM.

Two years earlier than the initial Executive Committee action that created the AUCHM, a group of physicians formed the *American College of Hyperbaric Medicine* (ACHM). The purpose of the ACHM was to represent the practicing clinical physician in hyperbaric medicine. As Dr. Eric Kindwall reports, these were well meaning physicians, although some believed them to be somewhat controversial because their initial published list of conditions that were responsive to HBO<sub>2</sub> therapy, was not in accord with the official position of the UMS. In time, the ACHM membership was infiltrated by reputable scientists, such as Dr. Caroline Fife and Jon Mader and the initial list of disorders that were responsive to HBO<sub>2</sub> therapy was made identical to that of the UHMS.

The initial incorporation of the ACHM lapsed and it was taken over by Dr.'s Tom Bozzuto, Bob Bartlett, Jeff Niezgod, and others, who quickly got it on solid ground. The ACHM was re-incorporated in Milwaukee, Wisconsin and Dr. Eric Kindwall was appointed it's Executive Director. The College is open to physicians only and the goal is to serve the physicians practicing legitimate HBO<sub>2</sub> therapy in hospitals and reputable clinics. The ACHM has a seat in the House of Delegates of the American Medical Association and thus has some national clout in mainstream medicine.

Dr. Kindwall reports that the ACHM currently sponsor educational courses and seminars for the practicing hyperbaric physician and now offers a tough certification exam (not a Board) as a means of meaningfully credentialing competent physicians with the requisite training and experience. The ACHM requires as prerequisites essentially the same training and experience as did the ABPM and the ABEM during the grandfathering period.

All the members of the ACHM are also members of the UHMS and it is their desire to work closely with the Society to advance the field of Hyperbaric Medicine and enhance its scientific reputation.

The ACHM's former president (for seven years), Dr. Tom Bozzuto, said this about the current state of this organization he led for so long: "(The ACHM) is an organization that was founded with good intentions, went through some rough initial years, got it's act together, and is an integral part of hyperbaric medicine in the US with a collegial relationship to the UHMS. Just a look at the college members who serve on the UHMS Executive Committee or other committees is a tribute to the two organizations getting along."

**The UHMS' Historical Link  
to the  
Divers Alert Network (DAN)**

Most of the information below was provided by Mr. Christopher J. Wacholz of DAN and Dr. Paul Sheffield, formerly of the U.S. Air Force, now of ATMO (editor prerogative has been taken herein).

The idea for a network for injured divers came from a U.S. Air Force Colonel named Jefferson Davis, a former President of the UHMS. When Dr. Davis was stationed at Brooks Air Force Base he recognized that divers who needed treatment for one type of decompression illness or another had no one to call for advice. He established a military hotline that any diver could call if he/she needed assistance for treatment of the dreaded “bends.” The hot line was nick-named “LEO-FAST” because of its number 536-3278.

LEO-FAST worked for a few years and provided injured divers with telephone numbers of hyperbaric chamber facilities where treatment could be obtained. In serious cases, an Air Force flight surgeon was sometimes consulted for advice, but typically a caller did not receive individual attention for which DAN has become famous.

The increasing popular sport of SCUBA diving resulted in numerous cases of decompression sickness and military hyperbaric facilities, like those at Pearl Harbor and the Submarine Base at Groton Connecticut, were overwhelmed with the volume of civilian treatment cases and detracted from their primary military mission. This was a national problem and needed a solution.

Dr. Davis spoke with representatives of the Undersea Medical Society concerning the problem and on 29 November 1977 a meeting of an advisory group was held at the UMS administrative office. Those present were Jefferson C. Davis, M.D., Paul G. Linaweaver, Jr., M.D., Martin J. Nemiroff, M.S., C.W. Shilling, M.D., J. Morgan Wells, Ph.D., and David A. Youngblood, M.D. (in absentia). The result was a proposal to the National Oceanic and Atmospheric Administration (NOAA) “To investigate the feasibility of developing a U.S. National Diving Accident Network capable of giving medical advice and rendering emergency treatment of diving casualties.” The initial award by NOAA to the UMS was \$35,665 and then an additional need of \$20,000 was identified and, presumably, funded.

Regional coordinators were identified and included: Northeast: Christian J. Lambertsen, M.D.; Southeast: Ronald Samson M.D. and William H. Spaur, M.D; Midwestern: Eric Kindwall, M.D. and Martin J. Nemiroff, M.D.; Gulf Area: Jefferson C. Davis, M.D.; Northwest: Merrill P. Spencer, M.D.; South west: Paul G. Linaweaver, M.D.; Pacific Oceanic: Jon Pegg, M.D. The initial responsibility of these regional coordinators was to visit hyperbaric facilities in their region to assess their suitability for treating diving casualties. In our 40<sup>th</sup> year this sounds like it would be an overwhelming job, but remember that in the 1970’s there were only about 30 civilian chamber facilities in the United States.

A second meeting of the Advisory Group was held in June 1978 at the F.G. Hall Environmental Biomedical Research Laboratory at Duke University. At this meeting the group determined the physical characteristics of the chambers that would be selected to participate in the network. Additionally, steps were identified to develop an Operations Plan for the network. Said list of chambers and the Operations Plan would then be turned over to NOAA for implementation.

The implementation plan included sending small posters for display in the 7,000 U.S. Emergency Rooms throughout the United States. The posters would have local emergency phone numbers and a brief summary of diving accident symptoms and signs. Also, a 24 hour telephone number manned continuously by a physician trained and experienced in recognition of diving accidents. Other small posters in layman's language were to be distributed to dive boats and ambulances. The implementation plan included maintaining a database of accurate information on air ambulance capabilities nationwide. The initial estimate of cost to operate the National Diving Accident Network (NADAN) would be \$125,000 per year.

In preparation to fully implement the plan, NOAA trained six physician members of the UMS in recognition and treatment of diving casualties. These physicians were to be utilized in the network to advise divers who telephoned for assistance. It was stated that the UMS was capable of handling the effort to support the proposed NADAN and within the membership were many qualified physicians to consult and assist with identifying appropriate treatment for injured divers.

In June, 1980 Dr. Jeff Davis wrote a letter to the Chief, Procurement and Grants of NOAA and withdrew the Advisory Group (and the UMS) from consideration due to increased workload. In the letter he recommended the F.G. Hall Environmental Laboratory at Duke University Medical Center as having equal capability to perform the work needed for implementing the National Diving Accident Network. Dr. Davis pointed out that Peter B. Bennett, Ph.D., D.Sc., headed the laboratory and that Duke University Medical Center represented the only fully qualified alternative to carry out the proposal.

Many people and agencies agreed there was a national need for a single telephone number diving accident referral service but there was little information indicating how many divers there were in the United States and how many needed medical assistance each year. With such a paucity of information, few organizations were willing to even discuss funding such an enterprise. However, in January 1981, Duke University Medical Center was awarded a two-year grant from NOAA and NIOSH that provided funding to launch the network. And as they say..."The rest is history."

### **Reflections of Former UHMS Executive Secretary/Directors**

Maybe one of the best ways to conclude this historical journey of our Society through 40 years is to read the reflections of the persons who have been there every day through both thick and thin moments...our Executive Secretary/Directors. There have been only three: Dr. Charles Shilling, Dr. Leon J. Greenbaum, and Mr. Don Chandler.



Charles "Chuck" Shilling 1973-1986

The year the Society was 20 years old, "Chuck" Shilling had vacated the position as Executive Secretary only one year earlier. His reflections on his 13 years in that position are reproduced here as taken from Vol. 16, No. 6 issue of *Pressure*:

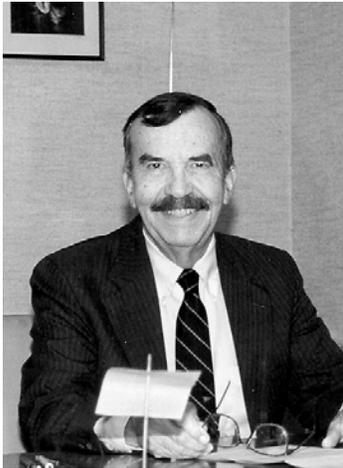
"During my 13-year tour of duty (1973-1986) as Executive Secretary of the then Undersea Medical Society, there were a number of developments that are worth noting.

Perhaps most important was the development of the Society from a small, U.S.-based group to an international organization with members in approximately 60 countries stretching from South Africa to Japan.

The development in size and international representation was not the only growth; for the Society became a true service organization with an information center, publications, workshops, research symposia and related scientific information services. For example, during this period, 31 workshops were held and the proceedings published on subjects of direct interest to diving or hyperbaric medicine.

Another development in diving was the move away from the individual diver to the use of bells, remotely operated vehicles (ROVs), habitats, and even armored suits. As the interest shifted away from the individual diver, research funds also shifted away from the physiological problems associated with diving. It became exceedingly difficult to obtain even small amounts of money to support the information services of the Society.

Then, along came an interest in hyperbaric oxygen therapy, and it seemed quite logical for the diving doctors who were familiar with pressure effects to move into this type of activity. After all, the pressure chamber does not change, whether a physician is treating a gas embolism or gas gangrene. The oxygen does not change. The operator is capable of running the chamber no matter what type of patient is inside. And the physician is capable of managing a variety of conditions and diseases. So why shouldn't the UMS eventually become the UHMS? But these changes were not without pain, at times quite severe! I sincerely trust that the Society will continue to grow and prosper."



*Leon J. Greenbaum, Jr. 1986-2000*

Dr. Leon J. Greenbaum Jr. assumed the duties of Executive Secretary, later Executive Director, on April 1, 1986 and continued until October 31, 2000.

“My role as the Executive Secretary, later as Executive Director, began on April Fools Day in 1986. The transition from a position at the National Institutes of Health in Bethesda to the Society offices, one mile distant from the NIH, was an easy one. The transition was equally pleasant because I would be taking a position with the Society, a position that was held by a previous ‘boss’ when I was a Navy Lieutenant in the Physiology Branch at the Office of Naval Research. Captain Charles Shilling (Chuck) was Director of Medical Sciences at that time. During those years following our Navy retirements,

I was at one time the Society Treasurer and a Member at Large and therefore I had ample opportunity to work with Chuck before his retirement from the Society.

When I took over the Society office at the Federation of American Societies of Experimental Biology (FASEB), the Society was renting the old carriage house at FASEB. The Executive Director’s office was on the second floor with gabled ceilings, not an office for anyone taller than six feet five inches. The lower level housed one bathroom and the beginnings of a library. In addition, we had access to a beautiful room in the main FASEB building for Executive Committee meetings and workshops.

The office was staffed by nine full and part time employees (Jane Dunne, Rosemary Mathias, Lynne Teven, Lorraine Matthews, Hilda Aurrichio, Ann Barker, Sally McAllister, Lorraine Matthews and Carolyn Paddon) to deal with a myriad of tasks. Because the staff was unusually devoted to the Society and because they were talented and bright people, the move into the Director’s chair was for me very pleasant and without any anxiety. As time passed, some of the staff moved or retired and we then hired Denyse Spence as the office secretary. She was unusually talented and devoted to the Society.

When looking back over those fourteen years it is difficult to single out events that were more significant than others. One major change, however, that we made was to manage our annual meetings, as opposed to having a meeting management company plan and then run the meetings. Jane Dunne, the office manager, attended a number of courses in meeting management and became quite skillful in arranging and managing the meetings. This operational change in the long run proved to be quite profitable for the Society.

The Society meeting in Kobe, Japan came up not too long after I began working as Executive Director. It is a meeting that will be long remembered, not because my luggage was lost but because of the superb meeting banquet. Joe Farmer was president

and he opened the banquet by giving a brief address with the first few sentences in Japanese, but with a North Carolina drawl. It drew a wonderful round of warm applause.

Betty and I had the good fortune of sitting with Dr. and Mrs. Sakakibara. Mrs. Sakakibara wore her lovely Japanese gown in which she did a lovely traditional Japanese dance. Betty and I spoke no Japanese and the Sakakibaras no English but it was at that meeting that a new and lasting friendship was initiated.

Our staff was almost always blessed with Society presidents who were very devoted and untiring in their volunteering of time and expertise, in most cases never micromanaging the business of running the Society. In 1988 the Society was confronted by the Blue Cross and Blue Shield (Blues) in their unwillingness to continue reimbursement for most medical conditions requiring hyperbaric oxygen therapy. It was quite fortuitous that Tom Neuman was president at that time. The Society hired a very talented law firm and with Tom's skill and dogged perseverance we were able to turn the tide in the Society's favor.

The scientific and medical material that Tom collected, with the help of Society members, was developed into a report that provided more than ample evidence that the use of hyperbaric oxygen was indeed a successful treatment modality for eleven medical conditions. This report was refined by Enrico Camporesi as a Society publication and it became a well sought-after Society syllabus on hyperbaric oxygen therapy.

Massachusetts was the one major state that continued to 'stone wall' any effort to provide reimbursement for any medical condition treated with HBO, except for diving related illnesses. I had one avenue left in our attempt to budge the Massachusetts Blues. I contacted the labor unions, telling their medical director that their workers were being deprived of a treatment that in some cases could be life saving. Not too long after that the Blues Director in Boston was replaced by a more reasonable Director and they then began to reimburse for HBO therapy.

During the years following the battle with the Blues, the Society began to work with and through the American Board of Preventive Medicine to get the American Board of Medical Specialties to provide a subspecialty Certificate of Added Qualification in Undersea and Hyperbaric Medicine. It proved to be a long and arduous process. It was necessary for many members of the Society to join the AMA so that we would have a sufficient volume of members to meet the basic to be considered. It was also because of Richard Moon's leadership during this process that the Society moved ahead to have its first exam to finally qualify physicians in the subspecialty of undersea and hyperbaric medicine.

Not only did we have 'battles with the Blues,' we had similar issues with Health Care Financing Administration (HCFA) officials to continue approval for the reimbursement of hyperbaric oxygen treatment. Caroline Fife made many, many trips to Maryland to meet with HCFA staff and to 'educate them about the errors of their ways.'

The Society's annual meetings always serve the purpose of providing an open forum for the scientific review of new research in diving physiology and later on, hyperbaric oxygen therapy. George Hart set the stage, in essence, to provide didactic courses in hyperbaric oxygen therapy during the annual meetings. None of the participants asked for or received honoraria for service as faculty for the courses. These courses were well attended and they provided additional revenue to the Society. Similar courses in diving physiology were also developed and offered during the annual meetings and were continued through the ensuing years.

In 1986 Hugh Van Liew replaced Manny Radomski as editor of Undersea Biomedical Research (UBR). Like the annual meetings, the Society's journal provided a major medium for the peer review of research in undersea medicine. Later on the journal accepted papers in hyperbaric oxygen therapy and the journal's name was changed to Undersea and Hyperbaric Medicine. Hugh took a very scholarly approach as editor, seeking out skilled editorial reviewers but he also took great 'pains' to help beginning scientists with the preparation of their manuscripts. As a result, the journal slowly became a respected scientific journal.

A few years later the journal was ready to be presented to the National Library of Medicine (NLM) for its review and acceptance in its listing of scientific publications. We were successful and as a result, UBR's (UHM) papers were included in the library's citation publication that cited papers by title and author.

Another educational arm of the Society was its sponsorship of educational courses in diving physiology and hyperbaric medicine. Bob Goad and then Paul Sheffield developed a major degree of professionalism in the review and management of the courses. These courses continue to have AMA approval for continuing medical education credit.

In the early nineties we were beginning to be alarmed by the slow but steady increase in our rental rate at FASEB and it looked as if the increase was going to continue. We began looking for new space, either to rent or to buy. We were anxious to remain in the Bethesda vicinity because of our use of the National Library of Medicine, the National Naval Medical Center and easy access to public transportation. Luckily we found a purchasable commercial building in Kensington, very close to Bethesda. Because of our good bond rating we were easily able to secure a bank loan with a down payment of \$100,000.

The new building had considerably more space with a storage area in the basement to house the Society publications (journals, workshops, symposia, and texts) that we sold to members and the public. The second floor of the building housed offices and our growing library. The library not only housed journals, texts, symposia and workshops, it also included filing cabinets with unprinted material (military reports, etc). Over the years the librarian's salary came from Society revenues and from the Navy, National Oceanographic and Atmosphere Administration (NOAA) and the National Library of Medicine.

Most of the Society's annual meetings were held in the United States, primarily because hotels outside the United States would not let Society personnel man the registration desks, and they charged excessively for those services, which in turn reduced our meeting profits. One meeting was quite unusual in that we had a combined meeting of three organizations, the UHMS, EUBS and the International Congress of Hyperbaric Medicine. The meeting was held in Amsterdam and it was successful, but not financially profitable for the UHMS because we had to do a thirty three percent split of the meeting profits. It was a delicate issue because some members had dual or even membership in the three groups. However, cool and sensible heads prevailed.

Early on elected officers in the Society was primarily limited to US members. Since we were an international society it seemed only reasonable that non-US members have the opportunity to share in the administration of the Society. The Executive Committee approved a recommendation that non-US members have the opportunity to be elected to the office of Vice President. Hideyo Takahashi from Nagoya was the first elected Vice President. Now that many of the day to day administrative chores can be handled through computer communication and telephone, the day may come when non-US members will serve as president. There was however one exception and that was when a Royal Navy medical officer, David Elliott, was assigned to duty in the United States; he was elected and served as Society President.

In concluding, it is very, very easy to say that I enjoyed immensely working as Executive Director of the Society. It was always challenging but most important, I worked with and for wonderful people. I made lasting friendships with many members in and outside the United States and I will continue to cherish those friendships.”



*Mr. Don Chandler 2000-2007*

Mr. Don Chandler assumed the position as Executive Director on November 1, 2000 and will continue until December 31, 2007. His reflections follow...

“My introduction to the responsibilities of Executive Director began in August, 2000 and continued through October when Dr. Greenbaum permitted me to spend Fridays at the UHMS office. This gave me a wonderful opportunity to interact with the employees, ask questions, and in general get a good “feel” for what I could expect when I assumed full responsibility for the position. Dr. Greenbaum was also readily available to answer any questions the staff could not answer.

I was fortunate to have interacted, for several years, with the UHMS employees who either retired or resigned prior to, or shortly after I arrived, because they held a wealth of knowledge about UHMS operations and were able to

convey lots of useful information to me. This was of tremendous help as I began my tenure.

The financial condition of the Society in the early years of my seven year term was of considerable concern to both me and our Executive Committee. Early on, membership was on the decline and the expenses associated with the problems caused by decisions made by the Health Care Financing Administration (HCFA), now Centers for Medicare and Medicaid Services (CMS), had drained the UHMS bank account. However, some UHMS members teamed with representatives from the Hyperbaric Oxygen Therapy Association (HOTA) and formed a task force that worked numerous untold hours over a three-year period and convinced HCFA representatives that their previous policy decisions regarding reimbursement for HBO<sub>2</sub> treatments were wrong. The task force then spearheaded a reasonable, but not ideal, change in HCFA policy. Due to the hard work of the task force, coupled with the outstanding help and guidance from people like Mr. Dick Clarke, Dr. Enrico Camporesi, and Dr. Neil Hampson, the financial condition of the Society improved, membership started another upward climb, and things simply got better and better...slowly, but surely. The HCFA issue had taken its negative toll on every aspect of our Society, but we survived. Also, I must point out that receiving almost \$700,000 in grants helped tremendously as well. Thanks for these activities go to more people in our Society than I could possibly mention here. Suffice it to say that many of our members gave liberally of their time and money in turning seriously negative events into a positive outcome.

Some major societal changes took place during my tenure as Executive Director. First, our Executive Committee took on the task of reviewing for current relevance our Constitution and By-Laws. Our By-Laws Committee was charged with doing the first review and reported that since this governing document had been written in the 1960's it was lacking in some important areas; of particular note was that there was no mention of hyperbaric medicine, except in the name of our Society. Over a period of about 18 months, after lots of discussion during Executive Committee meetings, and the By-Laws Committee working through several revisions, the membership approved the change to our governing document. The Executive Committee then became a Board of Directors; one among many other changes. The hard work of Dr. Ron Bangasser in completing this task was publicly acknowledged by the Board.

Another major change was the donation of the Shilling Library holdings to the Duke University Medical Center Library. Over several years the UHMS library had accumulated a collection on undersea medicine and, to a lesser amount, hyperbaric medicine that some regarded as the best in the world. Even so, very few people actually visited our library and it was generally felt that something needed to be done to make the UHMS library holdings available to more readers. The first attempt to do something to achieve this goal was to recommend to the U.S. Navy that the libraries at the Navy Experimental Diving Unit (NEDU), the Naval Submarine Medical Research Laboratory (NSMRL), and the UHMS be combined through electronic means. The recommendation got good reviews and funding was identified to accomplish the task. In the end, however, Navy representatives met at a decision conference at NEDU and, as reported to UHMS,

one of the Navy commands opted out of the deal which killed the task before it got started. The next step in doing something with the UHMS holdings so more people could access them was to begin discussions with representatives of the National Library of Medicine and representatives from the Duke University Medical Center Library. After seeing the reports from both of these organizations the, then, Executive Committee voted to move the UHMS holdings to the Duke University Medical Center Library. This was met with some strong resistance at first, but after a delay of about one year while the pros and cons of the objections were discussed, the decision was to proceed to move the UHMS holdings to Duke University. What the UHMS members got in return was continued free access to the former UHMS holdings, but also to the remainder of the Duke University Medical Center Library, just as though our members were Medical Center faculty. At this writing, this service is regarded by many to be of a value equal to or exceeding the cost of UHMS membership. Some have said that this decision may be the most important decision the Society has ever made.

Selling the UHMS property in Kensington was another major decision. This matter had actually been discussed from time to time over a period of years. After reviewing several market analyses, one-half of the Kensington property was placed on the market...this was the section that had housed the Shilling Library on the upper floor and a rental unit on the lower and basement floors. The plan was to remain in the spaces that housed the several administrative offices and stock of publications until a new Executive Director was named. However, an architectural company that was looking to purchase office property made an offer for all of the UHMS property that the Society could not refuse. The property was sold at a price that was one half of a million dollars more than was paid for it and the office was moved into leased space in Dunkirk, Maryland. At this writing, plans are in place to move the UHMS office to leased space in Durham, North Carolina.

Was the position of Executive Director of the Undersea and Hyperbaric Medical Society the “fun job” I was told me it would be? No, it was not a fun job but it was a good job and I would never want to miss out on meeting the wonderful people I have come to know through my activities these seven years. The people of our Society are some of the finest I have ever met and I treasure their friendship. The same is true for those I have met through our affiliates, like the EUBS, SPUMS, JUHMS, SASUHM, and others. Was the position of Executive Director a “good retirement job” as some told me it would be? No, it was not a good retirement job as some envisioned it. I have never been so busy in my life as I have been these past seven years, but being busy is part of what made the job a good one. I have enjoyed every day. However, I do now look forward to taking some time for golf and fishing. What else do I plan for my retirement years? For the moment I will continue as Pastor of South Berkeley Baptist Church in Inwood, West Virginia. When the time comes to resign my bi-vocational pastoral position, Sandra and I plan to spend six months in Hawaii and six months in Maryland where we will spend as much time with our grandchildren as possible.

For as long as my health holds I will continue attending the UHMS annual scientific meetings and there I will get to see many of you, renew acquaintances, and get caught up on all the good things that are going on in the two fields of medicine our Society

represents. I thank each of you for giving me seven wonderfully busy and challenging years...they are truly the capstone of a career in undersea and hyperbaric medicine that spans 40 years. God Bless!"