

History of WFUMB
by Seung Hyup Kim

If history were taught
in the form of stories it
would never be forgotten

Kipling



History and Archives of WFUMB



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Vice President-II of WFUMB
President of AFSUMB
Past President of KSUM



Acknowledgement

Materials in this presentation are from

- Personal collections of current and previous members of WFUMB History/Archives Committee and AC members
- Publications of WFUMB and other US-related societies
- Internet searches

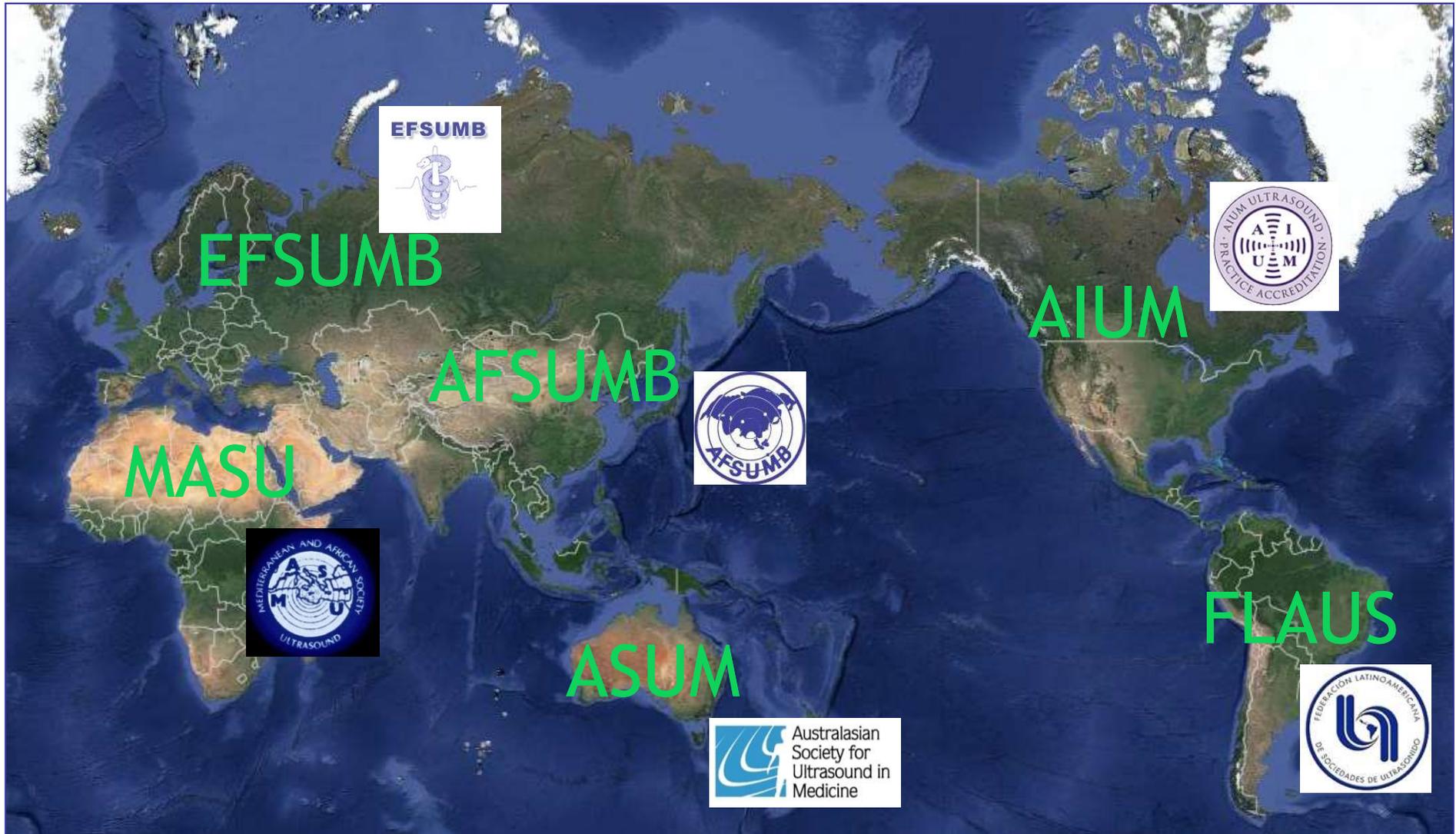
WFUMB History/Archives Committee

- Chair: Kim SH
- Members: Kossoff G, Lutz H, Nisenbaum H, Claudon M, Gharbi H
- Advisors: Goldberg B, Watanabe H, Hancke S

WFUMB



- World Federation of Ultrasound in Medicine and Biology
- Federation of six affiliated regional organizations
- Total number of members: 51,155



Medical Ultrasound Societies

- WFUMB
- AFSUMB, AIUM, ASUM, EFSUMB, FLAUS, MASU
- National US Societies (KSUM, JSUM, CTSUM,..)

Various Other US Societies

- ISUOG (International Society of Ultrasound in Obstetrics and Gynecology)
- ASE (American Society of Echocardiography)
- EACVI (European Association of Cardiovascular Imaging)
- ISCU (International Society of Cardiovascular Ultrasound)
- ICUS (International Contrast Ultrasound Society)
- ISTU (International Society of Therapeutic Ultrasound)
- SRU (Society of Radiologists in Ultrasound)
- SDMS (Society of Diagnostic Medical Sonography)

WFUMB Affiliated Organizations

Organizations	Member Societies	Number of membership
AFSUMB 	15	18,023
AIUM 	2 (U.S.A., Canada)	5,598
ASUM  Australasian Society for Ultrasound in Medicine	2 (Australia, New Zealand)	2,025
EFSUMB 	28	19,593
FLAUS 	13	4,196
MASU 	32	1,720
Total 	92	51,155

WFUMB Objectives (Constitution, Article 3)

The **objectives** of WFUMB shall be scientific, literary, and educational. Its **aims** shall be to encourage research in the field; to promote international cooperation in the field; and to disseminate scientific information. In pursuit of these aims, WFUMB may, in relation to its specific field of interest, engage in the following **activities**: sponsorship of meetings; publication of an official journal and other official documents; cooperation with other societies and organizations in specific learning; appointment of commissions on special problems; and awarding of prizes and distinctions. It **may** promote the formation of national or regional societies or groups, the coordination of bibliographic and informational services and the improvement of standards in terminology, equipment, methods, and safety practices, and generally shall promote improved communication and understanding in the world community using ultrasound in medicine and biology.

WFUMB Activities

- Scientific Congress
- Publication of Journal
- Education

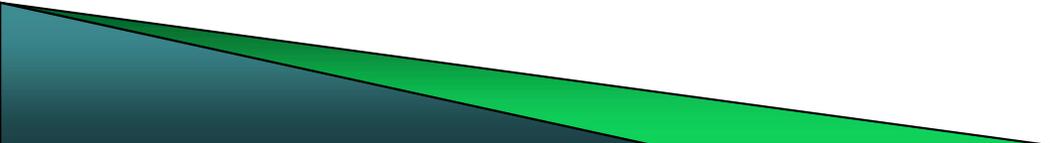
WFUMB, When established?

In 1973, WFUMB was officially formed at the General Assembly of Rotterdam Congress by the association of five societies - AIUM, JSUM, EFSUMB, SIDUO and ASUM. The first General Assembly elected **Dr. G. Baum** as President and approved the Constitution and accepted Pergamon Press as publisher for its journal, **Ultrasound in Medicine and Biology**



Gilbert Baum, Ophthalmology, U.S.A.

Before WFUMB was established...



US-related History

1761

Auscultation

Leopold Auenbrugger, Austria



1819

Stethoscope

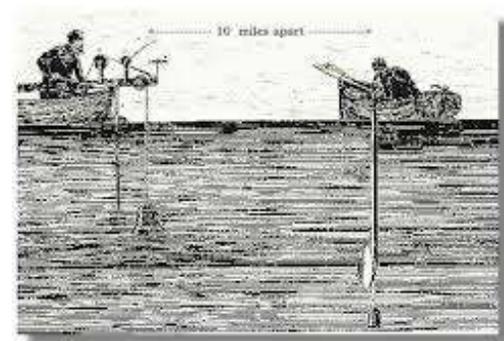
R.T.H. Laennec, France



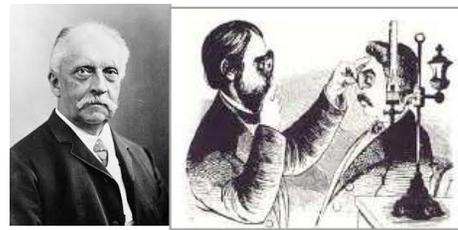
1826

Experiment on velocity of sound in water at Lake Geneva

Jean-Daniel Colladon, Charles Sturm, Switzerland



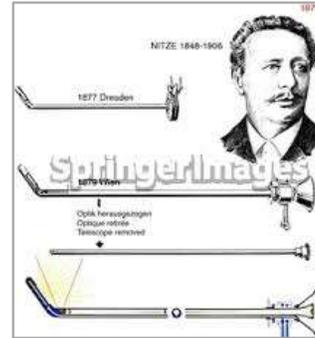
1851 — Ophthalmoscope
Hermann Helmholtz, Germany



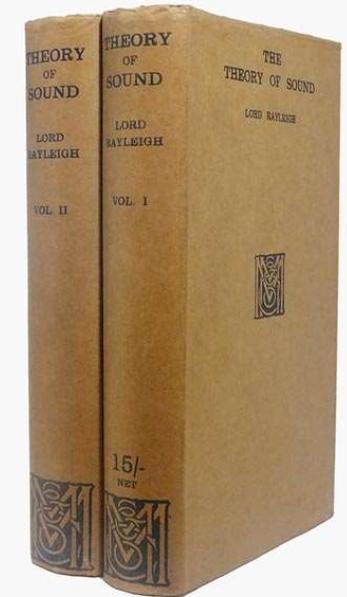
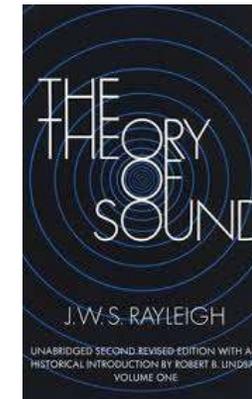
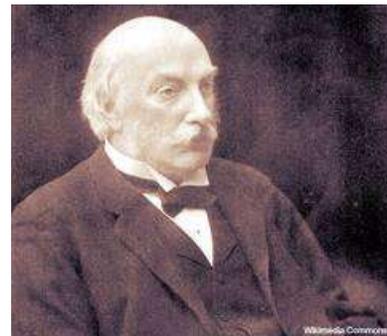
1854 — Laryngoscope
Manuel Garcia (singer), Spain



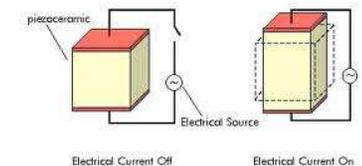
1876 — Cystoscope
Max Nitze, Germany



1877 — The theory of sound
Lord Rayleigh, England



1880 — Discovery of the piezoelectric effect
Pierre and Jacques Curie, France



1912 — The tragic loss of the Titanic

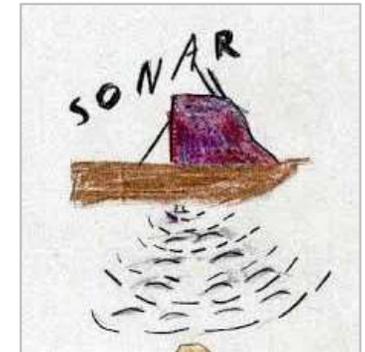
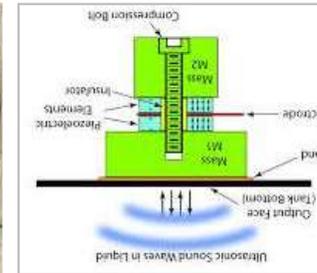


1914



1917 — First piezoelectric US transducer using a single large quartz crystal

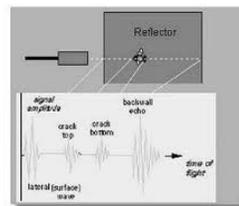
Paul Langevin, France



1917
1918

1928 — US could be used to detect hidden flaws in metals

Sergei Sokolov, Soviet



1937 — US through transmission used to visualize ventricles in the brain

Karl Dussik and Friedrich Dussick, Austria

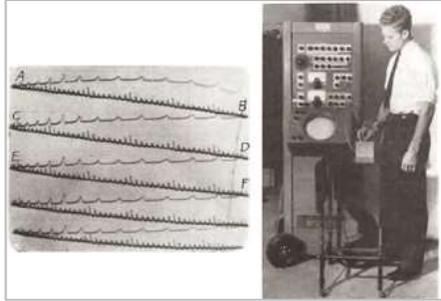


1939
1941
Pulse-echo US instrument with a second non-generating transducer to detect returning echoes

Donald Sproule and others working for Henry Hughes and Son, England

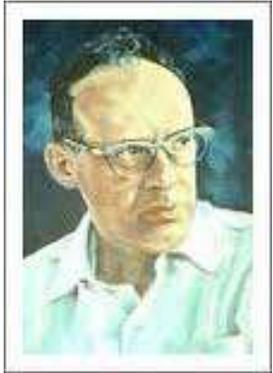
1942
Reflectoscope with a single transducer as both generator and receiver

Floyd Firestone, USA



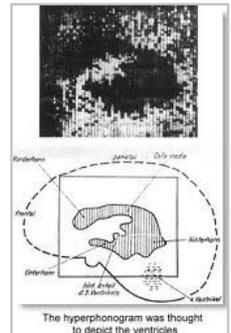
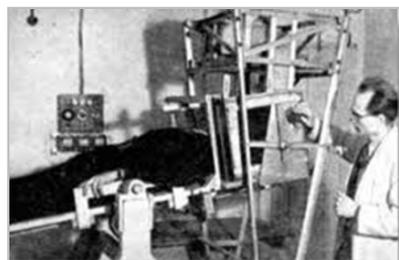
1945
1946
Use of high-intensity US as a noninvasive surgical technique to treat brain-related disorders

William Fry, USA



1947
Hyperphonograms of cerebral ventricles produced

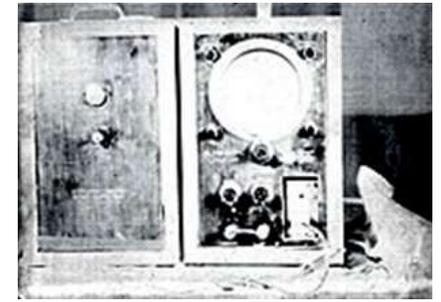
Karl Dussik and Friedrich Dussick, Austria



1947

Experiments on detection of gallstones and foreign bodies using A-mode presentation of reflected echoes

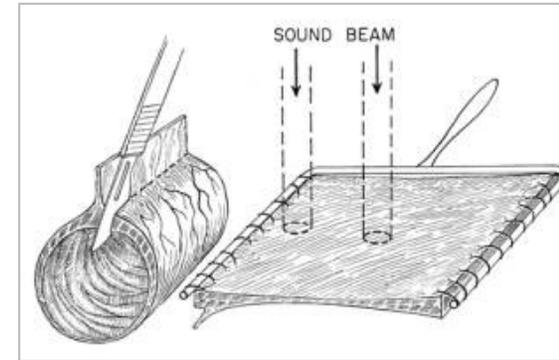
George Ludwig, USA



1949

Measured the thickness of excised bowel tissue using a Navy radar trainer operating at 15 MHz

John Wild, USA



1949

Metal flaw detectors with A-mode developed in Japan

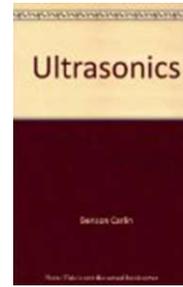
*Rokuro Uchida, Kenji Tanaka, Toshio Wagai
Nihon Musen (later Aloka), Mitsubishi*



1950

'Ultrasonics' published

Benson Carlin, USA



1951

- Earliest handheld B-mode contact scanners for clinical use
- Earliest US image of breast tumors produced in the living subject

John Wild and John Reid, USA

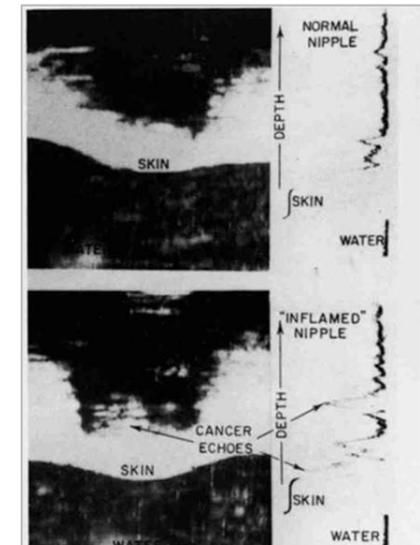
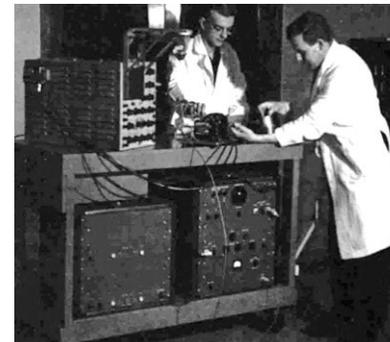
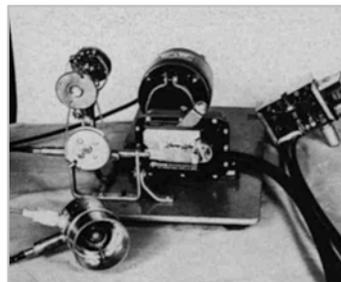
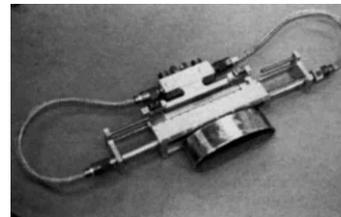
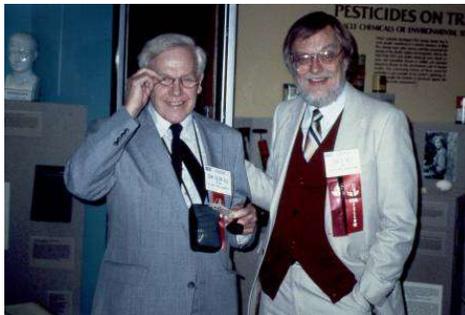


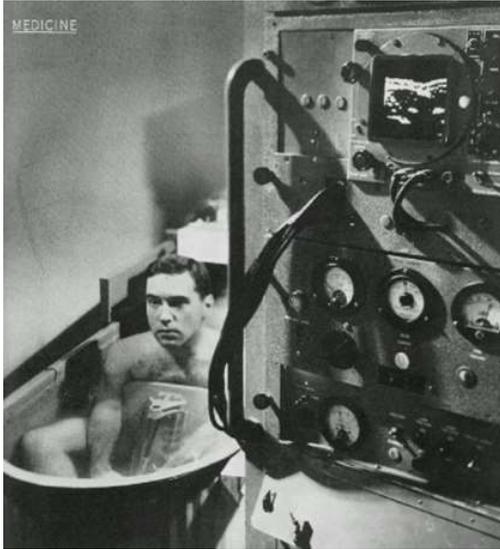
Figure 65 On May 16, 1953, Dr. John J. Wild and J. M. Reid produced this B-mode scan of an inflamed nipple, using a frequency of 15 MHz. The scan of the normal nipple from the same subject provided biological control. Based on information from both the A- and B-mode scans (note the A-scan at right, rotated 90 degrees), Wild and Reid diagnosed a malignant cancer, which was subsequently confirmed at biopsy. This is the first B-mode scan ever produced of a malignant carcinoma in the living human breast.

1951

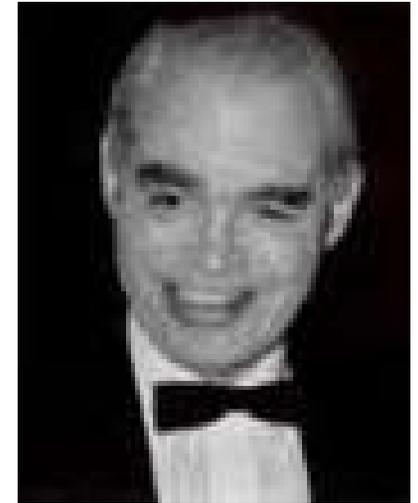
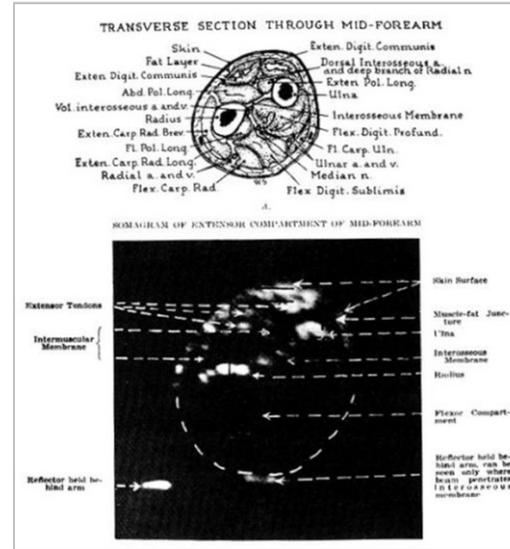
- Built scanners for multiposition (compound) scanning
- First cross-sectional US image recorded using a 35mm camera

Douglass Howry, USA

1952



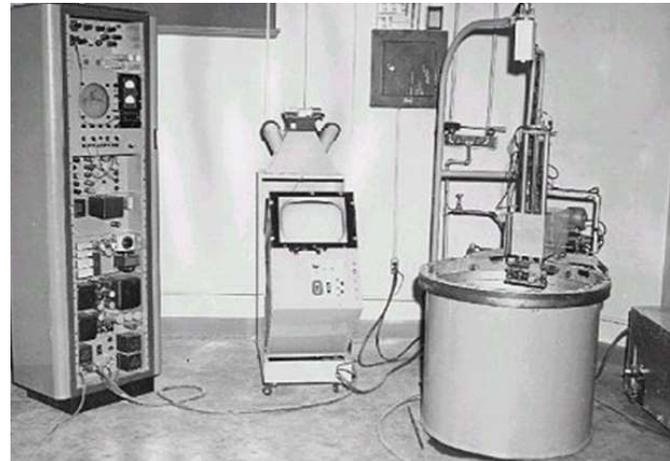
Cattle watering tank



1954



B-25 gun turret



1951 — The American Institute of Ultrasound in Medicine (AIUM) traces its roots to a meeting of 24 physical medicine specialists in a hotel room in Denver, Colorado, in 1951, while attending the American Congress of Physical Medicine and Rehabilitation

1952 — **AIUM established**
Disraeli Kobak, John Aldes, Cecil J Birtcher, USA



1952 — The first scientific meeting devoted to medical ultrasound appears to have been the symposium organized by William J. Fry of the University of Illinois at Allerton Park in 1952

William Fry, USA



1953

Clinical echocardiography launched using the pulse-echo technique

Inge Edler, Hellmuth Hertz, Sweden



1953

Evidence of intracranial tumor or hemorrhage from shift in the midline echo (echoencephalography)

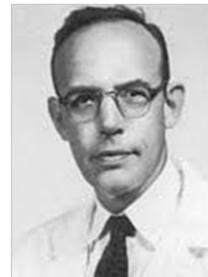
Lars Leksell, Sweden



1955

Developed compound scanning and published spectacular cross-sectional images of limbs and of the neck

Douglas Howry, Joseph Holmes, USA



1955 Doppler ultrasound applied to cardiovascular investigation

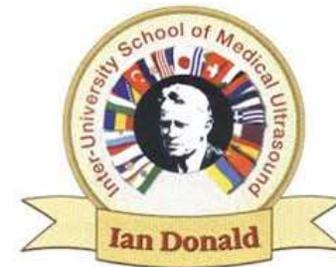
Shigeo Satomura, Yasuharu Nimura, Japan



1955 New piezoceramic materials such as barium titanate and lead zirconate-titanate

1956 OB/GYN us launched

Ian Donald, UK



1956 Use of US in orbit

Henry Mundt (USA), William Hughes (USA), Folke Jansson (Sweden)

1958 — A seminal paper on the “Investigation of abdominal masses by pulsed ultrasound” published

Ian Donald, Tom Brown, UK



1958 — Doppler instruments were introduced into medicine

1958 — First International Congress on Bio-Medical Engineering held in the uncompleted UNESCO building in Paris

1959 — Second International Congress on Bio-Medical Engineering held in Paris

1959 — The first National Ultrasound Conference was convened in Wuhan, China

1959 — Ultrasonic Research Section of the National Acoustic Laboratory was formed in Sydney

George Kossoff, Australia



1960 Aloka produced their first commercial medical A-scanner, the SSD-1, 2



1961 JSUM was formed and the first meeting was held at Juntendo University in Tokyo



Toshio Wagai, Japan



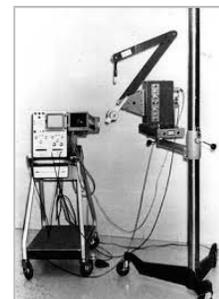
1962 Mark I scanner (called in publications the CAL [Commonwealth Acoustic Laboratory] Echoscope), a compound water bath scanner completed



1962 Peter Wells developed his version of the multi-joint articulated arm scanner based on Disonograph Electronics and put it to clinical use in Bristol, England



1962 Physionics produced three-jointed articulated-arm handheld scanner in USA



1963

Smith Kline-Precision, NY, introduced the Ekoline 20, an A-mode and B-mode instrument for echoencephalography



1964

The Societas Internationalis pro Diagnostica Ultrasonica in Ophthalmologia (SIDUO) was formed and its first international symposium was held in East Berlin

J Vanysek, Czechoslovakia



1965

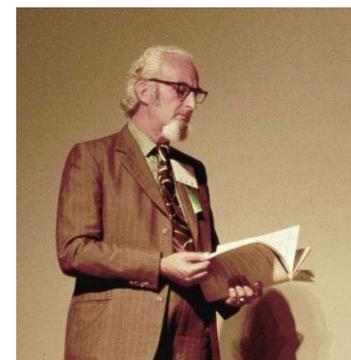
The first commercial real-time scanner, the Vidoson, was manufactured by Siemens Medical Systems of Germany



1966

The 2nd SIDUO in Brno, Czechoslovakia. Denis White encouraged the Executive of SIDOU to open its membership to every aspect of diagnostic ultrasound

Denis White, Neurology, Canada



1969

The 3rd SIDOUO in Vienna was renamed 'Ultrasound 1969: 1st World Congress on Ultrasonic Diagnostics in Medicine including meetings of SIDUO III and AIUM'

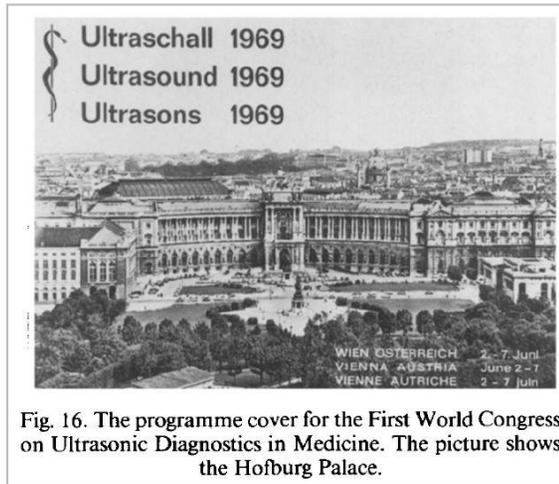


Fig. 16. The programme cover for the First World Congress on Ultrasonic Diagnostics in Medicine. The picture shows the Hofburg Palace.



1970 ASUM established

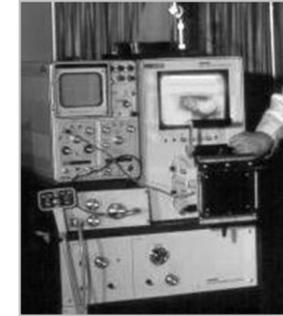


1972 EFSUMB established



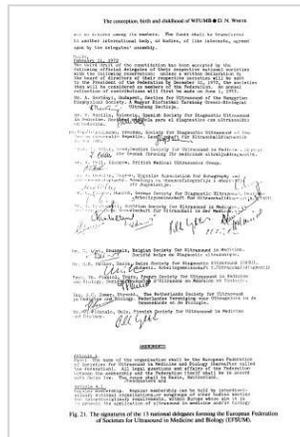
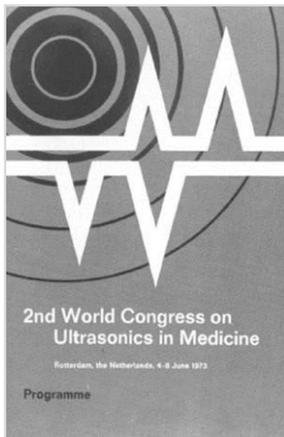
1973 The first commercial analog scan converter

Rohe and Unirad, U.S.A.



1973 The Rotterdam Congress held in 1973 was advertised as the 'Second World Congress on Diagnostic Ultrasound'. It did not include the biannual meeting of SIDOU. WFUMB was officially formed at the General Assembly by the association of five societies - AIUM, JSUM, EFSUMB, SIDUO and ASUM. The first General Assembly elected Dr. G. Baum as President and approved the Constitution and accepted Pergamon Press as publisher for its journal, Ultrasound in Medicine and Biology.

Gilbert Baum, Ophthalmology, U.S.A.



After WFUMB was established

1973 — The first issue of UMB was published in September



1976 — The first WFUMB Congress (WFUMB'76) in San Francisco, U.S.A.

1976 — A commercial model of the Octoson was available



1976 — **FLAUS** established



1979 — The 2nd WFUMB Congress (WFUMB'79) in Miyajaki, Japan

1982 — The 3rd WFUMB Congress (WFUMB'82) in Brighton, U.K.

1985 — The 4th WFUMB Congress (WFUMB'85) in Sydney, Australia

1988 — The 5th WFUMB Congress (WFUMB'88) in Washington DC, U.S.A.

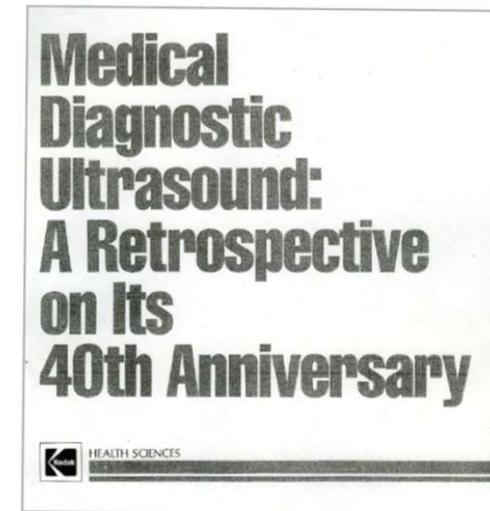
1988 AFSUMB established



1988 The first issue of WFUMB News published



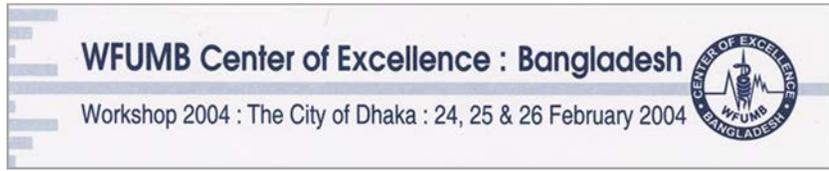
1988 The History and Archives Committee had Historical Symposium on Diagnostic Ultrasound and Kodak Health Sciences published the proceedings of this meeting entitled “Medical Diagnostic Ultrasound: A Retrospective on its 40th Anniversary”



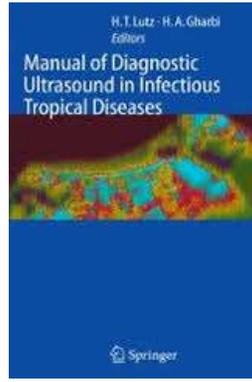
1989 The first commercial 3-D scanner, the Combison 330



2004 The first WFUMB COE opened in Bangladesh



2005 A WFUMB-sponsored book entitled “Manual of Diagnostic Ultrasound in Infectious Tropical Diseases” was published



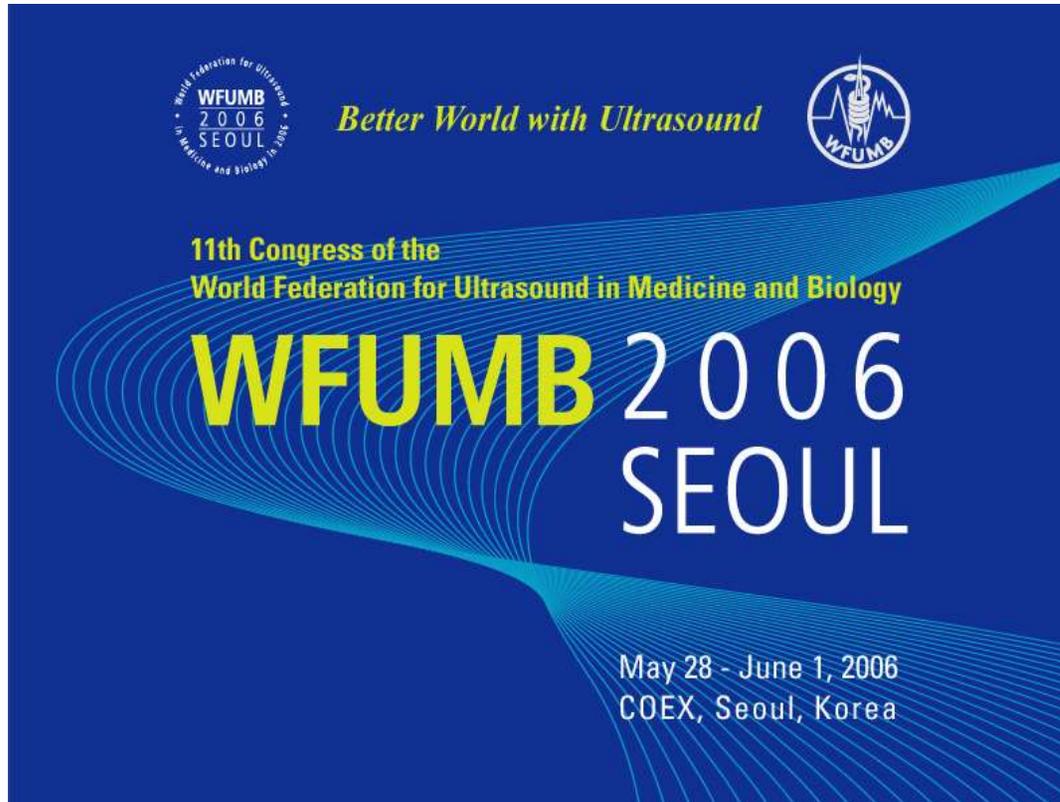
2006 The 11th WFUMB Congress (WFUMB 2006) in Seoul, Korea

2007 At the meeting with the AIUM held in 2007 in New York it was agreed that, commencing in 2009, the AIUM office would be responsible for the provision of secretarial services to WFUMB and that the office would be co-located with the AIUM in Washington, DC



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- 2009 The 12th WFUMB Congress (WFUMB 2009) in Sydney, Australia
 - 2009 The interval between WFUMB Congresses and the term of WFUMB officers were reduced from 3 years to 2 years
 - 2011 The 13th WFUMB Congress (WFUMB 2011) in Vienna, Austria
 - 2013 The 14th WFUMB Congress (WFUMB 2013) in Sao Paulo, Brazil
 - 2015 The 15th WFUMB Congress (WFUMB 2015) in Orlando, U.S.A.
 - 2017 The 16th WFUMB Congress (WFUMB 2017) in Taipei, Taiwan

WFUMB 2006, Seoul



Registration

3,082 from 68 countries



Country	Participant (s)
Korea	1,498
China	314
Japan	212
USA	94
Taiwan	68
Australia	34
Russian Federation	34
Malaysia	26
Bangladesh	22
Brazil	18
Germany	18
Italy	17
Vietnam	16
Singapore	15
Hong Kong, China	14
India	14
Israel	14
Philippines	14
Canada	12
Mongolia	11
UK	11
Denmark	10
Pakistan	10
Poland	10

WFUMB 2006, Seoul

Abstracts



1367 abstracts submitted

940 abstracts accepted for presentation

430 for scientific sessions

510 for scientific exhibition

13 parallel sessions

Technical Exhibition

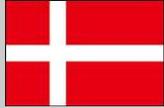
13 main sponsors

48 exhibitors

162 booths



WFUMB Congresses

Year	Venue		Member Society
2003	Montreal, Canada		AIUM
2000	Florence, Italy		EFSUMB/SIUMB
1997	Buenos Aires, Argentina		FLAUS/SAUMB
1994	Sapporo, Japan		AFSUMB/JSUM
1991	Copenhagen, Denmark		EFSUMB/DSDU
1988	Washington DC, U.S.A.		AIUM
1985	Sydney, Australia		ASUM
1982	Brighton, UK		EFSUMB/BMUS
1979	Miyazaki, Japan		JSUM
1976	San Francisco, U.S.A		AIUM

WFUMB Congresses

Year	Venue		Member Society
2006	Seoul, Korea		AFSUMB/KSUM
2009	Sydney, Australia		ASUM
2011	Vienna, Austria		EFSUMB/ÖGUM
2013	Sao Paulo, Brazil		FLAUS/CBR
2015	Orlando, U.S.A.		AIUM
2017	Taipei, Taiwan		AFSUMB
2019	TBD		

WFUMB COE (Center of Excellence)

Aim

- To conduct education in medical US in developing countries
- To confer accreditation after necessary examination
- To accumulate current technical information under close communication with other centers

Location: Asia, Africa, Latin America, Eastern Europe

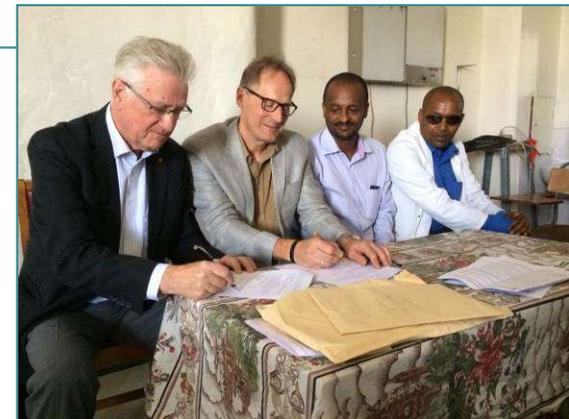


WFUMB COEs

- 📍 **Bangladesh Society of Ultrasonography (BSU)**
Location: Dhaka, Bangladesh Established: February 24, 2004
- 📍 **Indonesian Society of Ultrasound in Medicine**
Location: Jakarta, Indonesia Established: February 12, 2011
- 📍 **Romanian Society of Ultrasound in Medicine and Biology**
Location: Timisoara, Romania Established: June 1, 2007
- 📍 **Sociedad Venezolana de Ultrasonido en Medicina (AVUM)**
Location: Caracas, Venezuela Established: February 6, 2005
- 📍 **Uganda Association of Sonography (UGASON)**
Location: Kampala, Uganda Established: June 8, 2004
- 📍 **Societe Togolaise D'Ultrasonographie Medicale**
Location: Lome, Togo Established: 2013
- 📍 **Nigerian Society of Ultrasound Practitioners (NSUP)**
Location: Lagos, Nigeria Established: 2013
- 📍 **Mongolian Society of Diagnostic Ultrasound (MSDU)**
Location: Ulaanbaatar, Mongolia Established 2013
- 📍 **Kenya Society of Ultrasound in Medicine and Biology (KESUMB)**
Location: Nairobi, Kenya Established 2013



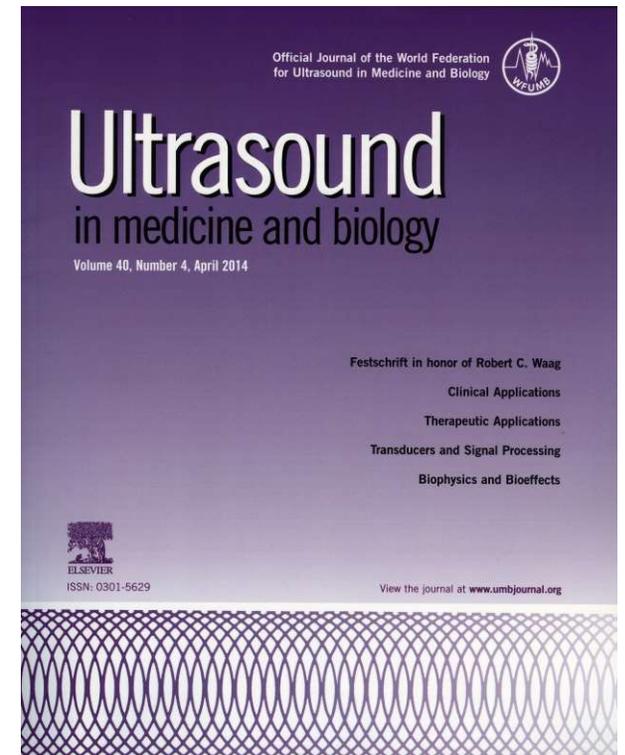
10th COE, Ethiopian Society of Ultrasound in Medicine and Biology (ESUMB)
Location: Addis Ababa, Ethiopia, Established: March 21, 2014



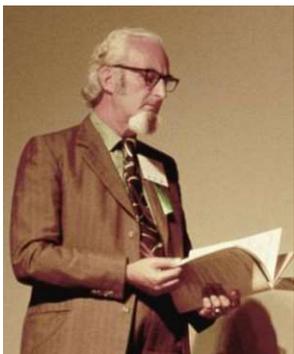
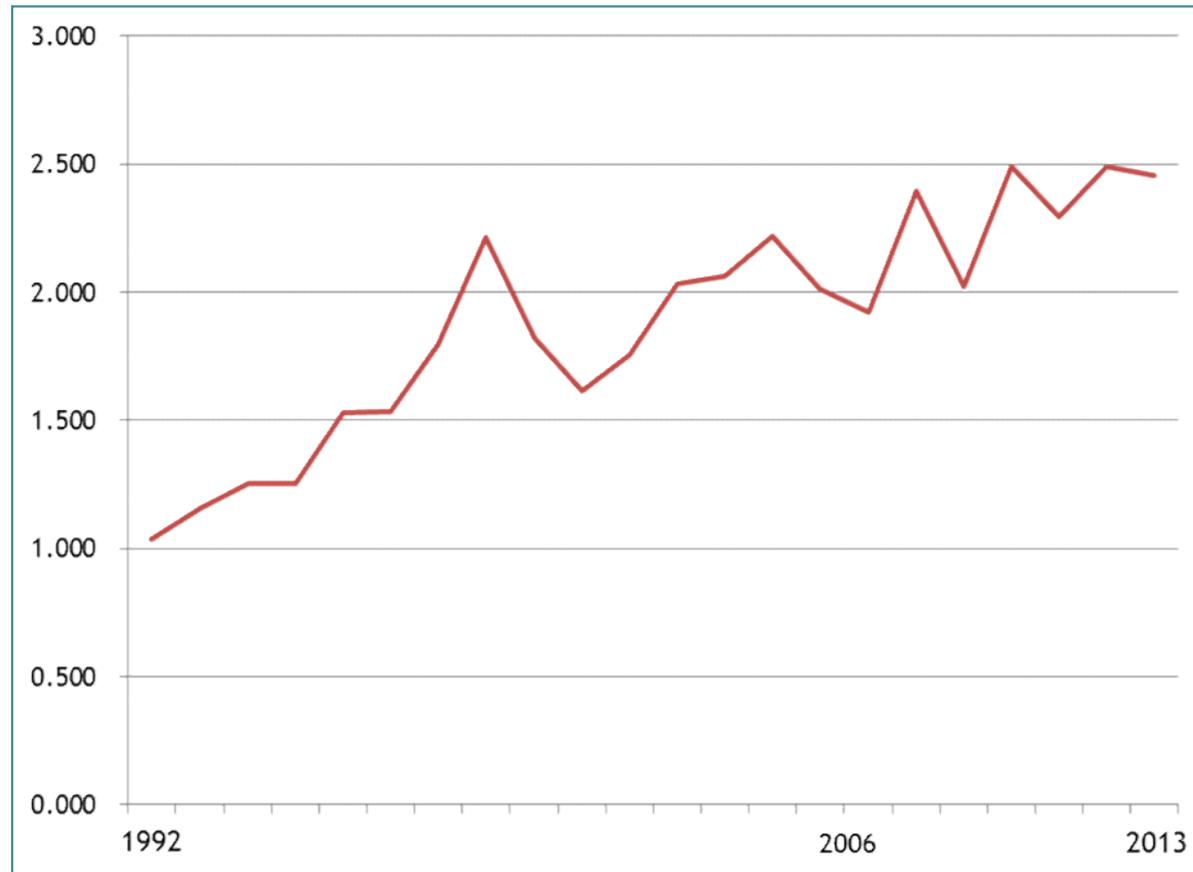
Publication of Journal: UMB

■ Ultrasound in Medicine and Biology

- First issue of UMB was published in September 1973 by Pergamon Press
- Now published by Elsevier
- IF 2.455



UMB Impact Factor, Editors



Denis White, Canada



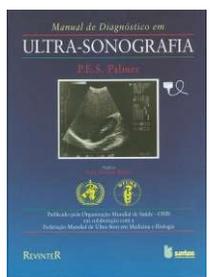
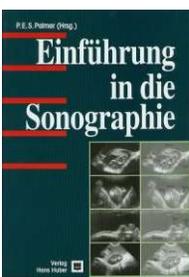
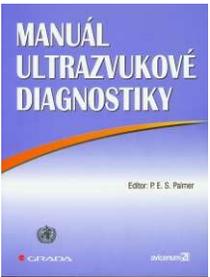
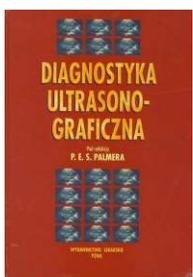
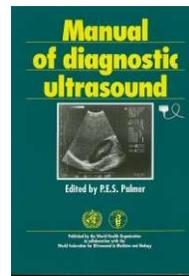
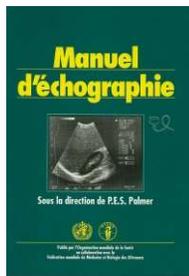
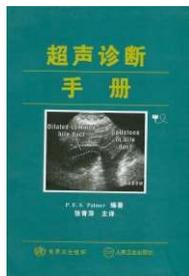
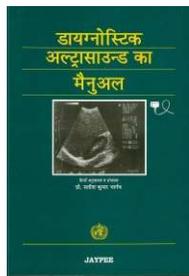
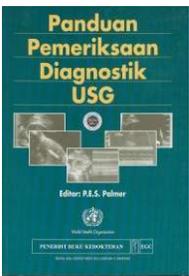
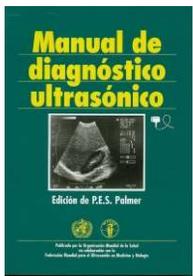
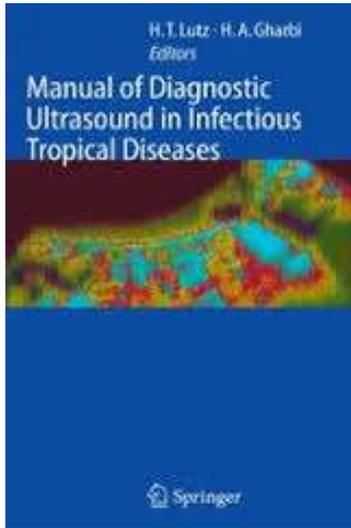
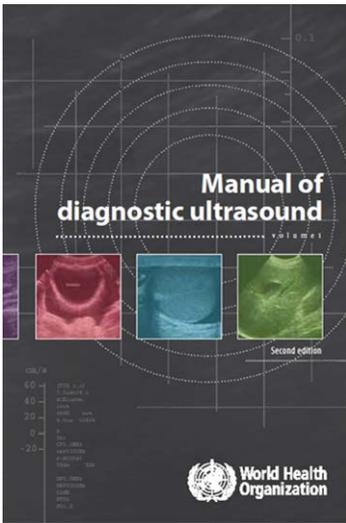
Peter Wells, U.K.



Christy Holland, U.S.A

WFUMB Publications

- Manuals of Diagnostic US



WFUMB Publications

■ Standards, Guidelines, Recommendations



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<http://dx.doi.org/10.1016/j.ultrasmedbio.2012.09.002>

● *Guideline*

GUIDELINES AND GOOD CLINICAL PRACTICE RECOMMENDATIONS FOR CONTRAST ENHANCED ULTRASOUND (CEUS) IN THE LIVER – UPDATE 2012 A WFUMB-EFSUMB INITIATIVE IN COOPERATION WITH REPRESENTATIVES OF AFSUMB, AIUM, ASUM, FLAUS AND ICUS

MICHEL CLAUDON,^{1,*} CHRISTOPH F. DIETRICH,^{2,*} BYUNG IHN CHOI,³ DAVID O. COSGROVE,⁴
MASATOSHI KUDO,⁵ CHRISTIAN P. NOLSØE,⁶ FABIO PISCAGLIA,⁷ STEPHANIE R. WILSON,⁸
RICHARD G. BARR,⁹ MARIA C. CHAMMAS,¹⁰ NITIN G. CHAUBAL,¹¹ MIN-HUA CHEN,¹²
DIRK ANDRE CLEVERT,¹³ JEAN MICHEL CORREAS,¹⁴ HONG DING,¹⁵ FLEMMING FORSBERG,¹⁶
J. BRIAN FOWLKES,¹⁷ ROBERT N. GIBSON,¹⁸ BARRY B. GOLDBERG,¹⁹ NATHALIE LASSAU,²⁰
EDWARD L. S. LEEN,²¹ ROBERT F. MATTREY,²² FUMINORI MORIYASU,²³ LUIGI SOLBIATI,²⁴
HANS-PETER WESKOTT,²⁵ and HUI-XIONG XU²⁶



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[doi:10.1016/j.ultrasmedbio.2006.07.002](http://dx.doi.org/10.1016/j.ultrasmedbio.2006.07.002)

● *Safety of Ultrasound Contrast Agents*

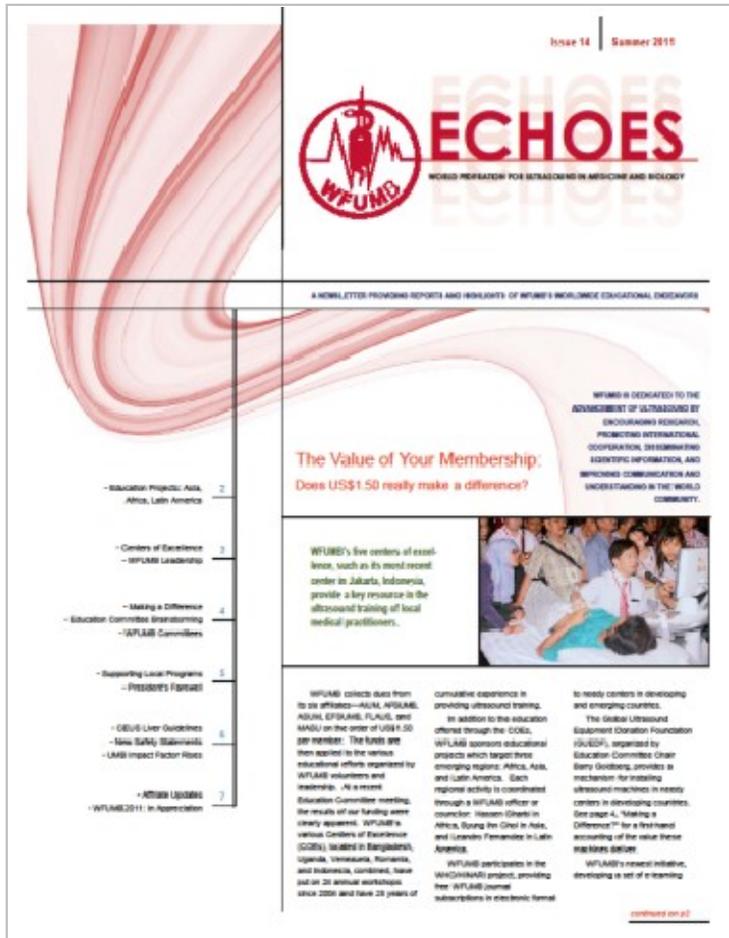
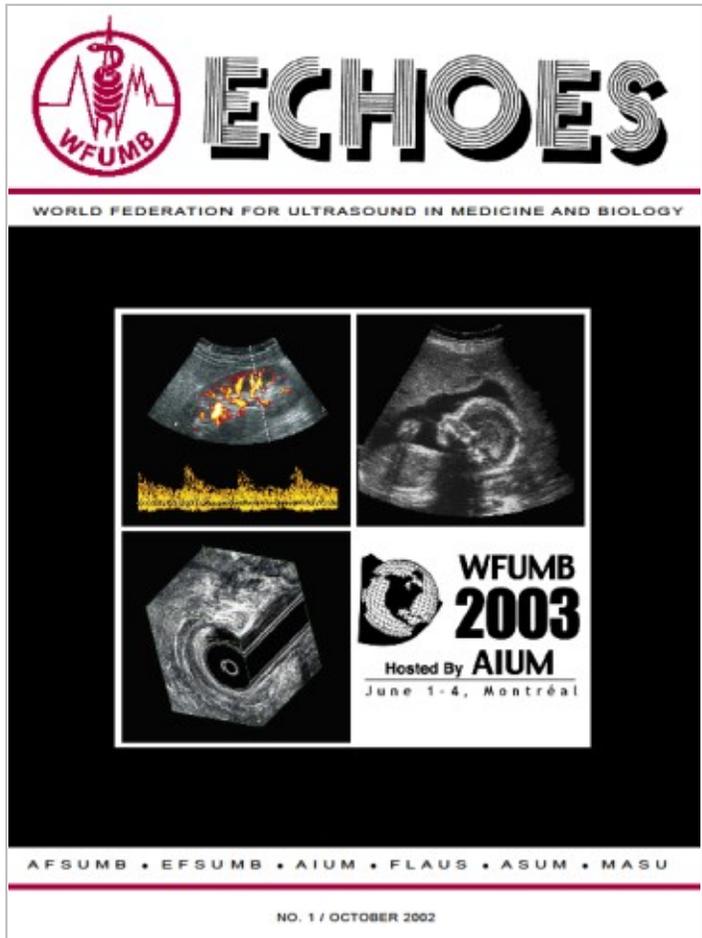
RECOMMENDATIONS ON THE SAFE USE OF ULTRASOUND CONTRAST AGENTS¹

STANLEY B. BARNETT,* FRANCIS DUCK[†] and MARVIN ZISKIN[‡]

*School of Biomedical Sciences, University of Sydney, Australia; [†]Department of Physics, University of Bath, Bath, UK; [‡]Center for Biomedical Physics, Temple University School of Medicine, Philadelphia, PA, USA

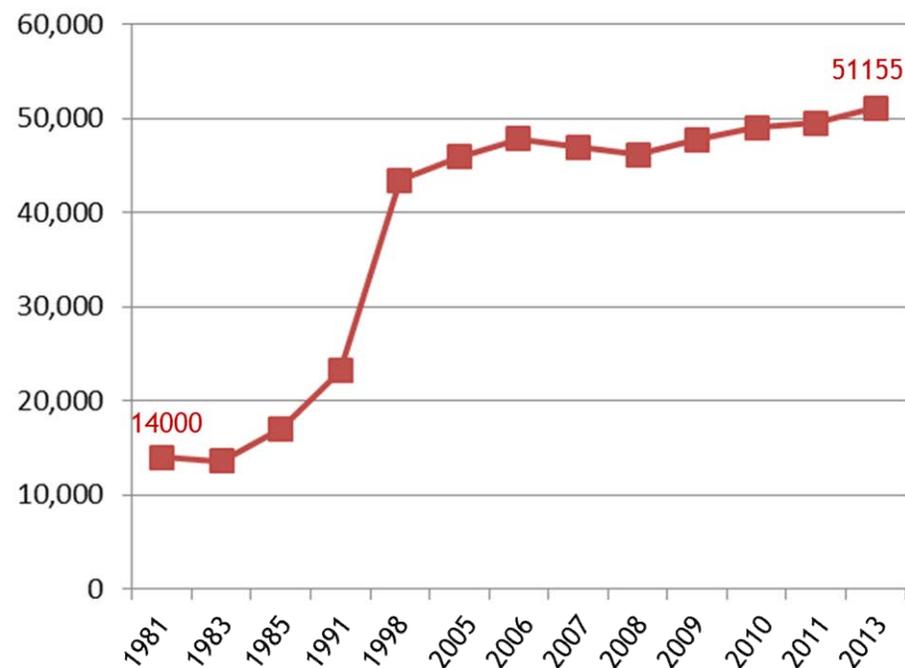
WFUMB Publications

- Newsletters



WFUMB Membership

	1981	1983	1985	1998	2005	2006	2007	2008	2009	2010	2011	2013
AFSUMB				17365	15622	16194	16228	15551	15597	16565	17436	18,023
AIUM	5000	3400	5261	7005	4497	4450	4414	4535	4868	5052	5272	5,598
ASUM	800	358	358	1232	1718	1820	1767	1521	1440	1592	1439	2,025
EFSUMB	4000	3862	4157	12522	19164	19323	18478	18534	19453	19417	19568	19,593
FLAUS				4840	4667	4820	4833	4813	4813	4813	4166	4,196
MASU				511	1248	1219	1232	1233	1633	1633	1633	1,720
JSUM	3000	5015	5830									
SUSEM (Brazil)	800	425	580									
SAMUS (South Africa)	100	190	407									
SIDUO	450	286	300									
MALSUM (Malaysia)		28	22									
ISUM (Indonesia)			92									
MAUM (Mexico)												
Total	14,000	13564	17007	43475	45916	47826	46952	46188	47805	49073	49515	51155



WFUMB Presidents

1967

Marinus de Vlieger
Holland, Ophthalmology



1973

Gilbert Baum
U.S.A., Ophthalmology



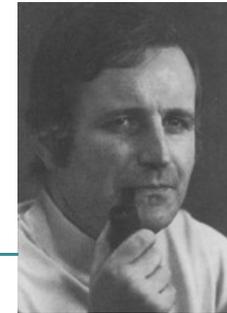
1976

Toshio Wagai
Japan, Gastroenterology



1979

Hans Müller
Switzerland, Neurology



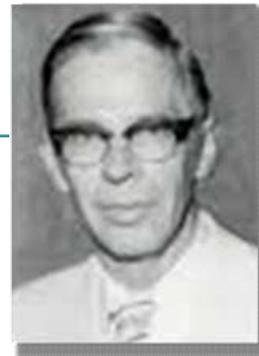
1982

George Kossoff
Australia, Physics



1985

Horace Thompson
U.S.A., OB/GYN



1988

Francis Weill
France, Radiology



1991

Morimichi Fukuda
Japan, Gastroenterology



1994

1994
1997
2000
2003
2006
2009
2011
2013
2015
2017

Barry Goldberg

U.S.A., Radiology



Harald Lutz

Germany, Internal Medicine



Hiroki Watanabe

Japan, Urology



Marvin Ziskin

U.S.A., Radiology/Medical Physics



Giovanni Cerri

Brazil, Radiology



Michel Claudon

France, Radiology



Masatoshi Kudo

Japan, Gastroenterology



Hassen A. Gharbi

Tunisia, Radiology



Harvey Nisenbaum

U.S.A., Radiology

