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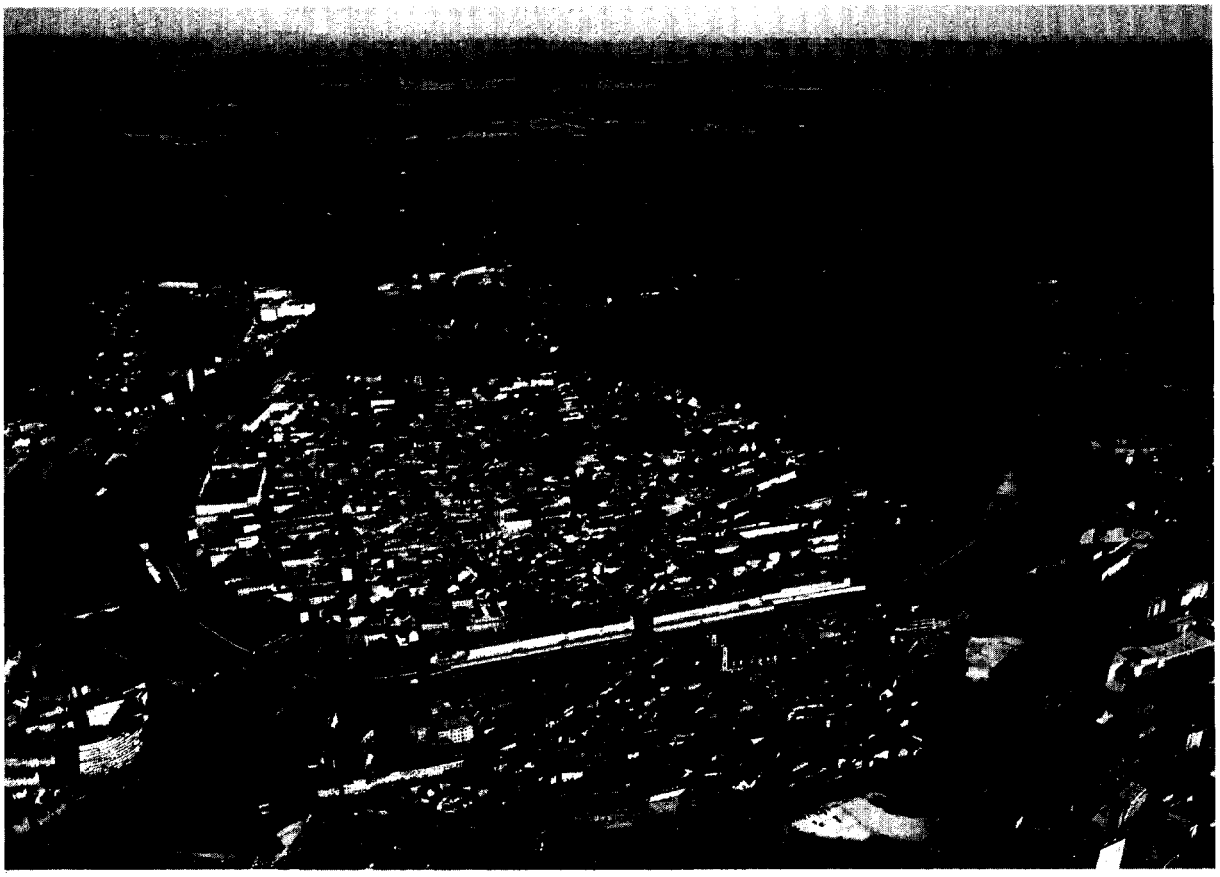
The European Frequency and Time Forum and 1999 IEEE International Frequency Control Symposium



Besançon, France **April 13-16, 1999**

Joint Meeting of the 13th European Frequency and Time Forum and 1999 IEEE International Frequency Control Symposium

13-16 April 1999

Background on the Joint Meeting

The European Frequency and Time Forum (EFTF) and the IEEE International Frequency Control Symposium (FCS) are the two most prominent international conferences addressing frequency and time technology. This joint meeting is one of two such meetings planned by agreement of the leadership of both conferences. The second joint meeting will be held in the United States in 2003 at a location to be determined. These two meetings constitute a trial of the concept. There is no commitment on the part of either conference to more joint meetings, but both conferences recognize that other joint meetings might be scheduled if the first two joint meetings are well received by participants.

Format for the Joint Meeting

The meeting format will be familiar to participants of both conferences, since both include plenary speakers, parallel sessions with contributed and invited papers, and poster sessions. The banquet and awards ceremonies will be held Wednesday evening, 14 April.

Local Environment

Besançon is a city of ~ 150,000 people near the Jura Mountains close to Switzerland. The weather should be mild in April with trees in blossom and average temperature of 13 °C (55 °F). Considered the best "green city" in France, the town, birthplace of watchmaking, has an old historical center with museums, Roman remains, monuments, excellent restaurants, shops, the unique Citadelle zoo and many cultural attractions. Located on a major rail line, 2 ½ hours from Paris by TGV, Besançon allows easy access to central Europe.

Exhibition

In conjunction with the meeting, an exhibition will be held at the Micropolis. Exhibitors can obtain detailed information on this exhibition from the Secretariat.

Language

The working language of the Joint meeting is English, which will be used for all presentations, discussions, and printed material.

Papers

Papers dealing with recent and original work of interest to the EFTF and FCS communities in the following subject areas will be presented:

- piezoelectric materials
- crystal oscillators
- SAW oscillators
- crystal/SAW filters
- crvstal sensors
- crystal transducers
- microwave oscillators
- optical oscillators
- atomic frequency standards
- clocks for space
- optical frequency standards
- noise and aging
- GPS/GLONASS systems
- time transfer
- measurement methods
- frequency synthesis

Website

Visit the following website for the latest conference information.

www.ens2m.fr.eftf

Conference Location

The Conference will be held in Micropolis, the Parc des expositions et des congrès de Besançon. Various accommodations exist within the city of Besançon. Transportation between the Micropolis and the hotels will be provided.

Registration Fee

The early registration fee of 320 US$ will include 1 copy of the proceedings and 1 ticket for the evening banquet. Late registration will be 350 US$. Students and retirees will pay 50 US$ (without proceedings).

1999 Conference Co-Chairmen

Dr. R.J. BESSON — ENSMM (France)
Dr. D.B. SULLIVAN — NIST (US)

1999 Technical Program Chairman

Dr. F.L. WALLS
NIST Time and Frequency Division
325 Broadway
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1999 Local Organization Chairman

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F-25030 Besançon Cedex, France

Conference Secretariat

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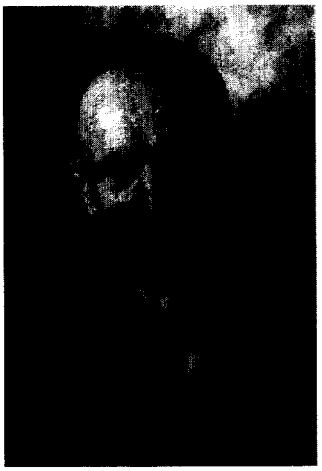
Raymond J. Besson
Conference Co-Chairman



Raymond J. Besson was born in Villars St. Georges, Doubs, France on May 2, 1938.

He was first a teacher in Physics in a High School of Dole, Jura, France. He received his Ph.D. in 1968 and his "Doctorat d'Etat in 1970, both in Physics from Besancon University. He taught Electricity in Besancon University (1966-1974) and then joined Ecole Nationale Superieure de Mecanique et des Microtechniques, Besancon, France, in 1974 as a Professor in Electronics.

Co-creator, co-organizer of European Frequency and Time Forum (1987), organizer of laboratoire de Chronometrie, Electronique et Piezoelectricite, creator of an industrial company for industrialization of quartz resonators and oscillators (1991), R. J. Besson has also been regional deputy of French Ministry for research and technology since 1982. He has produced over 80 articles on time and frequency devices, resonators, oscillators, and sensors (This includes a contribution to Physical Acoustics (1975). He is the inventor of new resonators, oscillators, and sensors (18 patents).

R. J. Besson is the recipient of the Silver Medal CNRS, Paris, 1980, the Grand Prize in Electronics Gen. Ferrie, Paris, 1980, the Science and Defense Award French Dept. of Defense, Paris, 1984, the W. G. Cady Award, 1992, and the 1993 Outstanding Paper Award (co-author) IEEE, UFFC. He was named Officer of Legion of Honour (1997). He is currently President of Societe

Invited Papers for the Joint Meeting of the 13th European Frequency and Time Forum and the 1999 Frequency Control Symposium

Jun Yamada
DESIGN AND FABRICATION TECHNOLOGY OF LOW LOSS AND HIGH FREQUENCY SAW DEVICES FOR MOBILE PHONES
Hitachi Ltd., Tokyo, Japan

G. John Dick and R. T. Wang
STABILITY AND PHASE NOISE TESTS OF TWO CRYO-COOLED SAPPHIRE OSCILLATORS
Jet Propulsion Laboratory, Pasadena, CA, USA

Dave Howe
TOTAL VARIANCE MADE EASY
NIST, Boulder, CO, USA

E. Ivanov and M. Tobar
HIGH POWER MICROWAVE OSCILLATORS WITH INTERFEROMETRIC SIGNAL PROCESSING
The University of Western Australia,, Australia

Thomas Udem
THE MEASUREMENT OF LARGE OPTICAL FREQUENCY DIFFERENCES AND THE DESIGN OF A NEW TYPE OF FREQUENCY CHAIN
Max-Planck Institut fuer Quantenoptik, Garching, Germany

G. Barwood
DEVELOPMENT OF AN OPTICAL FREQUENCY STANDARD BASED UPON THE 2S1/2 – 2D5/2 TRANSITION IN Sr+
Centre for Length Metrology, United Kingdom

Tom Parker, et al.
LONG-TERM EXPERIENCE WITH CESIUM BEAM FREQUENCY STANDARDS
NIST, Boulder, CO, USA

Fritz Riehle, et al
THE OPTICAL Ca FREQUENCY STANDARD
Physikalisch-Technische Bundesanstalt, Braunschweig, Germany

Y. Sortais, et al
HIGH ACCURACY MEASUREMENT OF THE 87Rb GROUND STATE HYPERFINE SPLITTING IN AN ATTOMIC FOUNTAIN
BNM – LPTF, Paris, France

James Bergquist
199HG+ OPTICAL FREQUENCY STANDARD
NIST, Boulder, CO, USA

Stephen Casalnuovo
GAS PHASE CHEMICAL DETECTION WITH AN INTEGRATED CHEMICAL ANALYSIS SYSTEM
Sandia National Laboratories, Albuquerque, NM, USA

Bengt Kasemo
THE DISSIPATIVE QCM-D TECHNIQUE: INTERFACIAL PHENOMENA AND SENSOR APPLICATIONS FOR POLYMERS, PROTEINS, BIOMEMBRANES, AND LIVING CELLS
Chalmers University of Technology, Gothenburg, Sweden

Alfred Pohl and L. Reindl
STATE OF THE ART IN SIGNAL PROCESSING FOR WIRELESS SAW SENSORS
University of Technology, Vienna, Austria

Franz Seifert, et al
WIRELESSLY INTERROGABLE ACOUSTIC SENSORS
University of Technology, Vienna, Austria

Chronometrique de France (which supports the 1999 joint meeting in France).

He likes working in his country house, but also skiing and practicing foreign languages.

Donald B. Sullivan
Conference Co-Chairman

Donald B. Sullivan was born in Phoenix, Arizona in 1939. He received the BS degree in physics from the University of Texas at El Paso in 1961 and the MA and PHD degrees in physics from Vanderbilt University in 1963 and 1965. From 1965 to 1967 he served as an officer in the U.S. Army at Edgewood Arsenal, Maryland and in 1967 he joined the National Bureau of Standards (now the National Institute of Standards and Technology, NIST) as a National Research Council Postdoctoral Fellow. In 1969, he joined the permanent staff of the NIST Boulder Laboratories to work on applications of superconducting devices to high accuracy and high speed measurements. He moved into program management in 1977 serving as the Leader of the Cryoelectronics Group for 5 years, as a Program Analyst at NIST headquarters, and as Acting Deputy Director of the Center for Electronics and Electrical Engineering. In 1984, he made a major shift in technical field, becoming Chief of the Time and Frequency Division. He has published more than 50 articles on electronic devices and measurement instruments. In 1985, he was recognized by NIST with the Samuel Wesley Stratton Award (shared with Richard Kautz) for establishing the feasibility of the series-array Josephson volt standard now used widely for maintaining the volt.

EFTF/FCS Facts

1. Nobel Prize winners C. Cohen-Tarmoudji and William Philips have been invited to deliver papers at opening session.
2. A web site has been created: http://www.ens2m.fr/eftf
3. Final selection of papers is December 11, 1998, at the T. P. C. meeting in Paris Airport (Charles de Gaulle).
4. Mike Mirarchi and Barbara McGivney will welcome the American participants in France and help the European organization.
   - The "Micropolis localization includes: a great auditorium (2000 seats or less)
   - two smaller meeting rooms (400 seats each)
   - 3000 square meters for posters and exhibitions
   - transportation will be continuously available
5. Instead of organizing visits we plan to have several organizations exhibiting on the conference site.
6. Award ceremony will be downtown in the evening of April 14, 1998.
   - two European awards (European frequency and time award plus young scientist award
   - three American awards (Cady, Rabi, and Sawyer)
7. First call for papers has been launched. We anticipate participation of 500 to 600 persons and 40 exhibitors.

Raymond Besson
Co-Chairman

ISAF XI '98 IN MONTREUX SWITZERLAND

by Allen H. Meitzler

Meeting Site, Joint Nature of the Meeting, and Scope of the Technical Program

The meeting of ISAF XI '98 took place in Montreux Switzerland from August 24th to 27th. ISAF meetings in the past have always been held as separate, independent events. This time the ISAF meeting was combined with the meetings of two other, closely related European groups: ECAPD IV '98, the European Conference on Applications of Polar Dielectrics; and Electroceramics VI '98, the International Conference on Electroceramics and Their Applications. The Chair of the Organizing Committee was Prof. Nava Setter of the Ecole Polytechnique Federale de Lausanne. The technical program covered a tremendous variety of topics as can be seen by examination of the table on page 5, a list of the conference topics contained in the Abstract Book. As a result of this rich technical program and, undoubtedly, because of the spectacularly beautiful setting provided by Lake Geneva and the background alps, the conference had an unusually large total attendance with participants from many countries.

Conference Center.

Main entrance.

Attendance, Organization of the Technical Program, and Publication of Proceedings

The conference had 618 registered participants, including 150 students. The pie chart on page 7 shows the distribution in the "countries of origin of the participants. Japan had the largest number of participants with Germany a close second. There were 733 abstracts submitted. There was an opening Plenary Session with two excellent invited papers on ferroelectric memory devices, there were three parallel sessions of oral presentations on each of the four meeting days, there was one poster session on Monday, one on Tuesday, and one on Wednesday, each with large numbers of papers. On Thursday, the last day of the meeting, the conference ended with a closing Plenary Session, again with two excellent invited papers. In all, more than 500 manuscripts were submitted and these will be published in three separate proceedings, one published by each of the three sponsoring groups, and these proceedings will be sent out to registered participants by the end of March 1999.

CONFERENCE TOPICS

TOPICS - ORAL SESSIONS

- DRAM
- FRAM
- Size effects
- Pyroelectrics
- Thin film processing
- Ferroelectrics for microsystems
- Conductivity
- Biomaterials
- Glass-ceramics
- Interfaces
- Infrared and microwave characterization
- *Magnetic ceramics*
- Nonlinear optics
- Microwave dielectrics
- Capacitors and packaging
- Piezoelectric actuators
- Bulk ceramic processing
- Piezoelectrics for high frequencies
- Domains
- Electromechanical effects
- Relaxors
- Ferroelectrics
- Piezoelectric sensors

TOPICS - POSTER SESSIONS

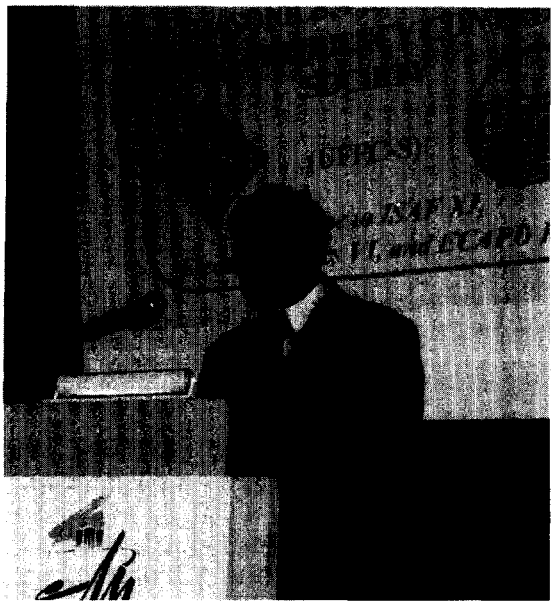
- Conductivity, SOFC, charge transport, grain boundaries, diffusion...
- Optical materials, properties and devices
- Pyroelectrics, infrared sensing, polarization
- Polymers, biological and organic materials
- Piezoelectric and *electrostrictive bulk materials*
- Composites
- Active control
- Thin film properties
- Bulk multilayers
- Mechanical properties
- Fundamental studies, domains, phase transitions, structure
- Thin films: processing, microstructure
- Magnetic and superconducting materials
- Bulk materials: processing, microstructure
- Bulk ceramic properties: *dielectric and other*
- Memories
- Microwave materials
- Photovoltaics
- Relaxors

Related Workshops and Social Programs

In addition to the full technical program, there were a variety of other attractive events. There was a three-day tutorial before the meeting in which 106 people participated and a "hands on workshop in which 22 people enrolled. There was a full social program for the attendees with a Welcoming Reception at the Montreux Conference Center on Sunday, August 23rd; on Monday, an evening in the Swiss Mountains with a wine reception and buffet dinner; on Tuesday, a boat trip on Lake Geneva; on Wednesday, the Conference Banquet at the Casino Montreux; and on Thursday, a Farewell Social at the Chillon Castle. (The cost of admission to all these events was included in the basic Conference Registration Fee.) Every day when the technical sessions were in progress, there was a Social Program provided for the 93 registered Accompanying Persons. On Friday, the last day of the conference, two tours of scientific interest were provided; one to the Swiss Federal Institute of Technology, Lausanne, and the other to the Nuclear Research Centre "CERN near Geneva.

The Opening Ceremonies

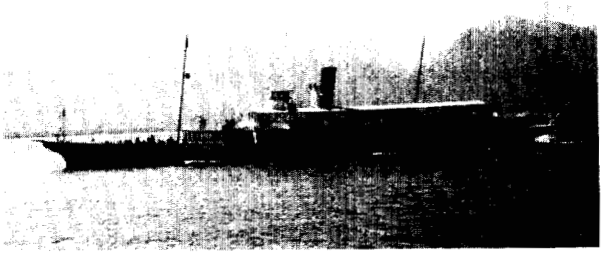
The Opening Plenary Session took place in an auditorium large enough to hold all the attendees. The Chair of the Organizing Committee, Nava Setter, opened the meeting, and intro-

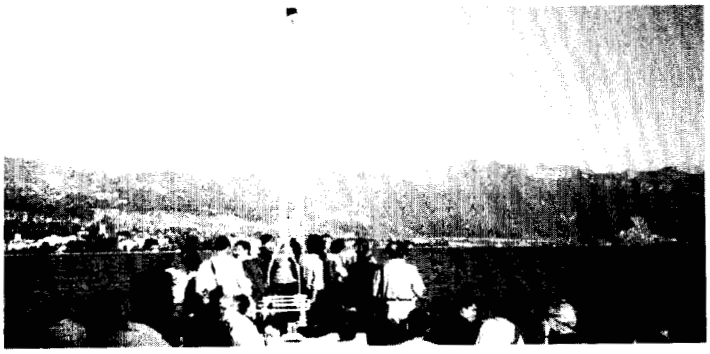


Ahmad Safari.

Nava Setter and Eric Cross.

Boat Ride on Lake Geneva



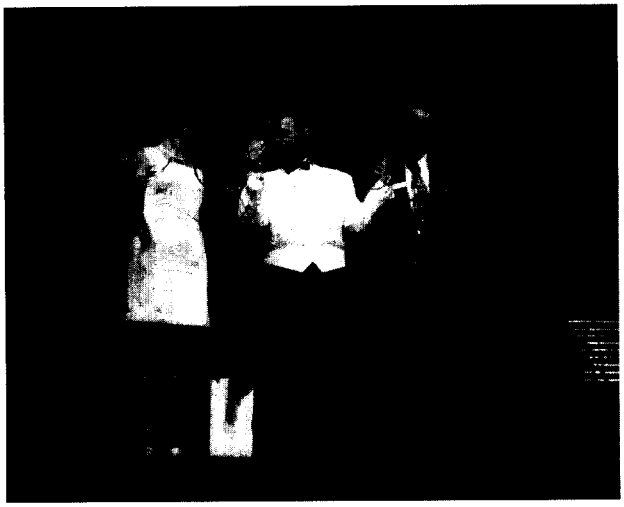


Sideny Lang, Ahmad Safari, Ahmed Amin, Eric Cross, and Relya Buchanan.

The Wine "Social" Before the Banquet

Paul Conard, Ahmad Safari and T. R. (Raj) Gururaja.

After-Banquet Entertainment



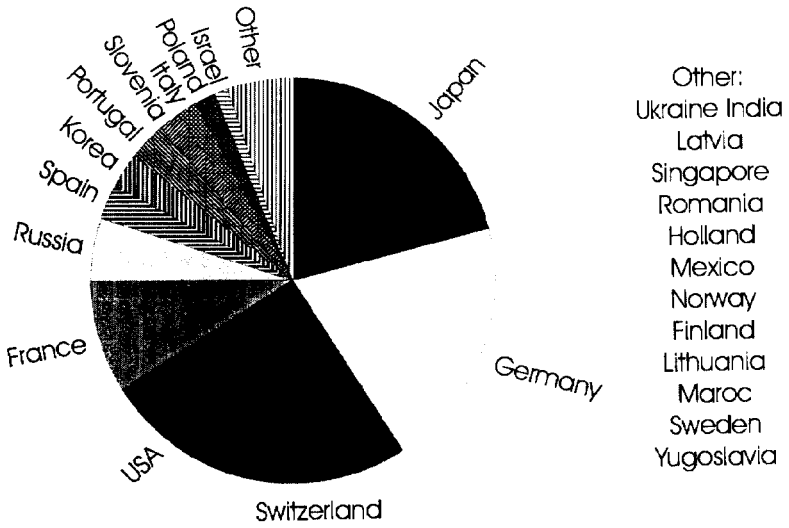
Two professional entertainers and one amateur Bob Newnham.

Al Meitzler.

Visit to the Chillon Castle

Lunchers on the outdoor balcony.

duced representatives of the three participating organizations, each of whom gave a brief welcoming address. The representative for the IEEE ISAF was Ahmad Safari, Chair of the UFFC-S Ferroelectrics Committee. Nava Setter followed these opening address with a brief summary of the attendance and program statistics for the meeting. One observation made by Nava Setter was that the topics related to "ferroelectric memories make up one-quarter of all the papers in the meeting. At the conclusion of her remarks, the Chair of the Plenary Session was turned over to Prof. Eric Cross, former Chair of the UFFC Ferroelectrics Committee, to preside over the two invited papers presented in the session. Appropriately enough, the first two invited talks in the opening Plenary Session were on the subject of ferroelectric memories. Rainer Wasser of RWTH Aachen University of Technology described the progress that has been made in



computer modeling and simulation of all aspects of ferroelectric memories, from analyzing the performance of a complete system at the circuit level to modeling the processing operations and the solid state physics relating the microcopic and macroscopic properties. Carlos Mazure of Siemens AG Semiconductor Group discussed the major advances and breakthroughs that have been achieved in recent years in deposition, patterning and cleaning the sub-micron device structure needed to compete with silicon DRAMs. In spite of all the progress, Mazure pointed out that many challenges still remain in achieving a full capability to manufacturelow-cos, high performance, high reliability devices.

Some Research Topics of Current Interest

The topic of thin ferroelctric films for memory devices was continued in sessions entitled DRAM I and DRAM II. Session DRAM I was held on Monday afternoon and DRAM II on Tuesday morning. An outstanding contributed paper in this area was the paper by Streiffer, Parker, Lash and Kingon from North Carolina State University entitled "The Influence of Strain on the Dielectric Behavior of (Ba,Sr)TiO3 Thin Films Deposited by LS-MOCVD on Pt/SiO2/Si. This paper presented an excellent discussion of the effects of strain, Ti excess, and the dead layer on the properties of barium strontium titanate thin ferroelectric films.

Thin ferroelectric films, in addition to being important in memory devices, are important for applications in electrooptical devices. Perhaps in the long run the use of ferroelctic films to form wave guides, modulators and switches in fiber optic data systems may prove to be more important than their use in ferroelectric memories. One session at the conference was devoted to the subject of Non-linear Optics.

Some of the technical papers presented during the first day used the acronym SOFC, which might be unfamiliar to the reader. This acronym stands for Solid Oxide Fuel Cell a development area of growing importance as the search for power sources other than those using petroleum fuels proceeds.

The subject of the use of ferroelectric materials, both in bulk form and thin film form, for sensors and actuators received attention in several sessions. The use of ferroelectric materials in transducers for medical diagnostic applications was highlighted in the invited talk by T. G. (Raj) Gururaja of the Hewlett-Packard Co. in a sesssion on Piezoelectric Sensors. For years, PZT ceramics have been the main materials used in these devices. In the past few years, new ferroelectric relaxor, single-crystal materials, like the PMN-PT materials that display large reported values of k33 , show some promise of supplanting PZT ceramics in medical diagnostic applications. Progress in the growth of these new single-crystal materials was reported on in an invited talk given in another session, entitled Piezoelectric Actuators III, by T. Shrout of Pennsylvania State University. The attempt to grow large, high-quality, single-crystal materials with good reproducibility of characteristics is at present an area of intense research activity.

Microsystem applications is another area of potential future importance for ferroelectric films. Silicon micro-machining techniques have produced a variety of useful structures combining sensors and actuators with associated electronic circuitry, all on a single chip. Ferroelectric films are used both in sensors and actuators to provide the means to accomplish the electromechanical conversion of energy.

Three Poster Sessions

In addition to the wealth of technical content in the sessions with oral presentations (By the way, the language of the conference was English with no provision for simultaneous translation to other languages), there were several hundred poster papers presented in three poster sessions. The wide range of the subject matter covered in the poster sessions can be gleaned by scanning the Abstract Book that was sent out in advance of the meeting.

The Closing Plenary Session

The conference had a number of excellent invited presentations scattered throughout the parallel sessions on the four days of technical sessions. The two invited presentations in the Closing Plenary Session were exceptionally fine. The first speaker was M. Graetzel of EPFL whose presentation was entitled "Optoelectronic Properties of Mesoporous Oxide Films, The Nanocrystalline Injection Solar Cell. This paper described the use of nanocrystalline transparent films of oxide semiconductors such as TiO2 , ZnO, and WO3 in a new form of solar cell that promises to compete with conventional , silicon-based solar cells. The second invited presentation in this concluding session was by Bob Newnham whose talk was entitled "Ceramic Engineering in the 21st Century: Scaling Up and Scaling Down. The paper described various ways in which ceramic materials will likely contribute to solving the problems the human race will face when the population of the earth will be something like 15 billion in the year 2030. This talk was ably presented, with Prof. Newnham's colorful hand-lettered and illustrated and marvellously entertaining transparencies. Prof. Newnham's talk provided an appropriate thought-provoking and inspirational note on which to end the meeting.

Some Final Thoughts About the Conference

The joint conference formed by the cooperative combination of three different research oriented meetings on polar dielectrics, ferroelectrics, and electroceramics resulted in a total program bulging with papers of worthy technical content. In some respects, it was overwhelming. Yet at the same time, it was enjoyable and unusually stimulating in that it provided and opportunity to see in one place, over a period of a few days, many of the most prominent individuals in these specialized topics of research presently working in Europe and Asia. Prof. Nava Setter and the forty some associates who worked with her in tending to all the meeting arrangements did an exceptionally fine job that contributed directly to a joint conference that was highly successful in all respects.

IEEE International Ultrasonics Symposium, Sendai Japan

The 1998 IEEE International Ultrasonics Symposium was held in Sendai Japan, October 5-8. The total number of registered participants for the symposium was 767 from 29 countries. One-day registrations of 75 persons are included in the total. The percentage of Japanese participants to the total number of participants was 47.8%. The total number of submitted abstracts was 577 and 463 abstracts were accepted for presentation. The rejection rate was about 20%. The number of oral presentations was 269 and the number of the poster presentations was 194.

Preceding the symposium were the following tours and presentations:

[Tour 1] "SAW Devices and Fabrication presented by K. Yamanouchi and K. Tsubouchi. (The number of participants was 50.)

[Tour 2] "Ultrasonic Micro-Spectroscopy presented by J. Kushibiki and K. Yamanaka. (The number of the participants was 27.)

[Tour 3] "Medical Ultrasonics presented by H. Kanai, Y. Koiwa, and Y. Saijo. (The number of the participants was 45.)

Two short courses were given:

[1] "Ultrasound Measurements in the Laboratory Procedure and Pitfalls(Mark Schafer, Sonic Technologies, Inc.) (38 persons).

[2] "SAW Filters for Wireless Applications (Donald C. Malocha, University of Central Florida) (58 persons).

The Sendai Local Committee held 11 meetings from April 1997 to October 1998 and prepared the following outstanding social, guest, and cultural programs.

Social Reception (October 6, 1998): more than 500 persons.

"Noh performance (October 7, 1998): 370 persons.

Banquet (October 8, 1998): 300 persons.

[Guest tour 1] Half Day City Tour (46 persons) October 6, 1998.

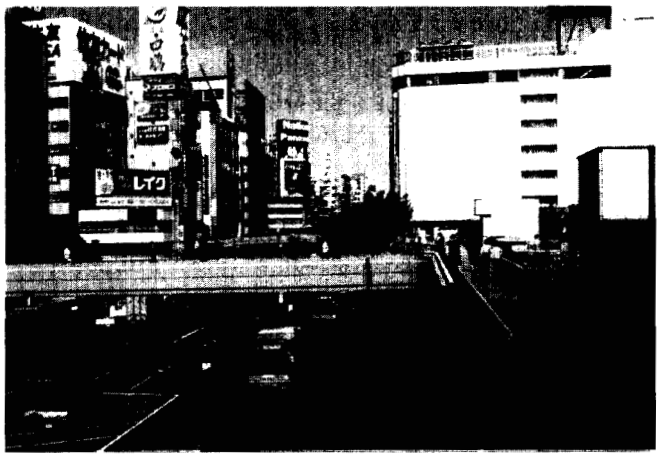
[Guest tour 2] Tour along the Coast of Sendai (43 persons) October 7, 1998.

[Guest tour 3] Tour along the Mountainside (34 persons) October 8, 1998.

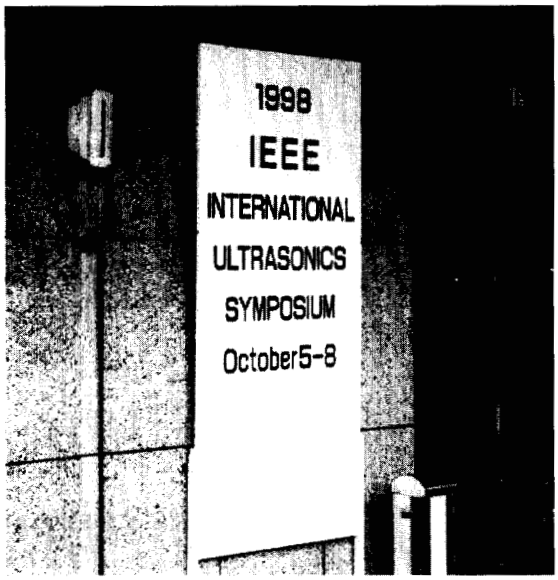
For a photo summary of the symposium access the following website:

http:www.asahi-net.or.jp/~kc2a-cyub/

Hiroshi Kanai
Local Arrangements



Downtown Sendai.



Welcome to the Symposium at Hotel Metropolitan, Sendai.

Registration was a busy place.

Tour 1: Recent progress of SAW devices and fabrication.

Tour 2: Wide application of Ultrasonic Micro-Spectroscopy.

Tour 3: Medical ultrasonics, "Are you healthy?"

Welcome address given by Noriyoshi Chubachi, General Co-Chair at the opening ceremony of the Ultrasonics Symposium on October 6, 1998

Good morning, ladies and gentlemen!

As a general co-chair of the Japan side, it is a great pleasure and privilege to welcome all of you to this Sendai Symposium, 1998 IEEE International Ultrasonic Symposium. At the beginning, let me talk a little bit about the academic background of ultrasonic investigations in Sendai.

According to the history of the Department of Electrical Engineering of Tohoku University, the late Professor Heiichi Nukiyama stayed in Boston to study electroacoustic transducers under Professor A.E. Kennelly at Harvard University from 1917 to 1919. Actually, the Faculty of Engineering of Tohoku University started in 1919. So, Nukiyama was one of the founders of Faculty of Engineering of Tohoku University. In those days of the early 1900s, people at the University of Tokyo, as well as Kyoto University, were involved in the development of electrical power engineering. However, at Tohoku University, both Prof. Nukiyama and Prof. Yagi, who is the inventor of the directional antenna, started to develop electrical communication engineering.

In the telephone technology, the electroacoustic conversion devices were essential for the communication with high performance. Nukiyama developed and established electroacoustic conversion theory based on Lagrange-Maxwell's equations. The theory was so useful and effective to design not only microphones and receivers in the audio frequency region, but also ultrasonic transducers. I, myself, used this theory to design thin film piezoelectric transducers in the VHF and UHF ranges.

Yesterday, we provided the special program "Presentation and tour for you, especially for overseas friends. We are very happy if you were satisfied with this program. As for the contribution to ultrasonic engineering in Japan, I cannot forget the late Professor Yoshimitsu Kikuchi who was a very good student of Nukiyama, and a teacher of most members of our local committee.

Dr. Nobou Shuto, Iwate Prefectural university, gave the Plenary Lecture entitled "Tsunamis – From Their Generation to Coastal Effects.

I remember the Sendai Symposium on Acoustoelectronics in 1968, which was organized and chaired by Professor Kikuchi. It was 30 years ago. Professor Eric Adler, Dr. Fred Hickernell and many people of the same ages as our's, maybe over 60 years old among us, were the participants of that meeting. Sendai keeps a lot of such beautiful memories associated with ultrasonics developments along with the long history.

I think it is most essential for us to get together, I mean, to have a face-to-face meeting at one place from all over the world, no matter how highly the communication technology develops as, for example, the internetwork communication system developed all over the world. I should like to say the 'space and time' in which we live is not replaced by science and technology.

We, the researchers in Sendai, are happy to have this pioneer of ultrasonics, Nukiyama who had an opportunity to study in Boston and came back with the philosophy that science and technology should serve human beings. Actually, Nukiyama wrote in his book about a brief biography of Alexander Graham Bell. And, admir-

At the beginning, the Plenary Session.

ing Bell's life, he mentioned that engineering should work with a philosophy of humanity or worldwide love. He learned that the fear of God or the Lord is the beginning of knowledge and wisdom as seen in the Proverbs.

I wish the IEEE International Symposium, which is held annually, would serve to contribute to the peace of the world, as well as human welfare through the science and technology of ultrasonics.

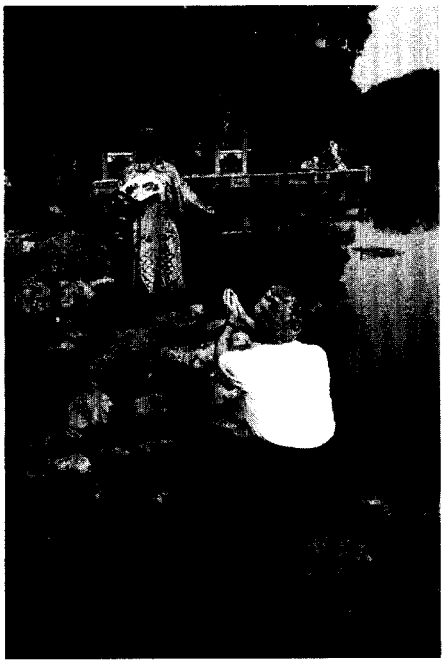
I hope that the 4-day-meeting in Sendai will be most significant for both Japanese and overseas experts. And our local committee members also hope that you will enjoy both academically and personally by your participating in this Sendai meeting. We wish you to have a beautiful stay in Sendai. Thank you.

UFFC-S President John Vig (left) and Dr. Shuto enjoy a question after the plenary lecture.

The four parallel oral sessions were filled.

Look, think, and discuss poster sessions.

Technology updates at the exhibits.



The secret George Alers used to get paper acceptance at the symposium was caught on this photo.

Awards at the Sendai Symposium

1998 Achievement Award

Professor William D. O'Brien, Jr. received the 1998 Achievement Award at the Awards ceremonies on October 6, 1998. Bill is the 20th recipient of this Society-wide award. He received a cash award, a plaque and a certificate with the citation:

"For leadership in establishing a broad knowledge of the interaction of ultrasound with biological tissue, including bioeffects, exposimetry and clinical standards, and for fostering in his students the joy of discovery.

Dr. James Greenleaf, of Mayo Clinic, introduced Bill to the audience interspersing photos of Bill's evolving hair style and award-winning mustache while highlighting Bill's professional accomplishments.

Jim emphasized Bill's enthusiasm for working with students and encouraging their professional growth. Teaching and research have always been Bill's compelling motivations.

After receiving the Ph.D. in Electrical Engineering in 1970 from the University of Illinois, Bill worked for five years for the Food and Drug Administration before returning to the University to launch his teaching career. He currently holds professorships in four major areas: Electrical and Computer Engineering, College of Engineering; Bioengineering, College of Engineering; Bioengineering, College of Medicine; Nutritional Sciences, College of Agricultural, Consumer and Environmental Sciences.

Bill's main contributions to the technical field have been in the area of bioeffects of ultrasound, especially on the fetus. His extensive experiments have linked many fundamental areas of ultrasound: dosimetry in biological tissue, toxicity, attenuation, absorption, velocity dispersion and acoustic microscopy. He has also contributed to the fields of acoustic imaging and blood flow. He has influenced the establishment of safety standards throughout the industry. His publications in these combined areas total over 180.

Bill's interests have encompassed activities in other professional societies where his contributions have been recognized by a number of awards and leadership positions. Probably foremost are his activities in the American Institute of Ultrasound in Medicine, where he became a Fellow in 1985, received the Presidential Recognition Award in 1985, the Presidential Recognition Award in 1992, and the Joseph H. Holmes Basic Science Pioneer Award in 1993. In AIUM, he served as President, 1988-1991, the first Ph.D. (rather than MD) to hold this position. Also in AIUM, he served on numerous committees, including the Board of Governors, Finance Committee, Treasurer, Bioeffects Committee, and Awards Committee, to mention a few.

Professor William D. O'Brien, Jr., (center) received the 1998 UFFC-S Achievement Award. John Vig (left) presented the award and Jim Greenleaf (right) introduced Bill.

Bill has encouraged professionalism in all aspects of ultrasound. His activities are particularly noteworthy in the American Registry of Diagnostic Medical Sonographers where he encouraged excellence and high levels of training by serving on several governing bodies in that society. Also, he is active in the Acoustical Society of America, where he was elected Fellow in 1982.

Within IEEE, Bill has held many leadership positions for almost thirty years. He served as Secretary/Treasurer of the Society, 1972-1980, President, 1982 and 1983, member of the Technical Program Committee for the Ultrasonics Symposium, 1973 - present, Co-chair of the Ultrasonics Symposium in 1981, and General Chair in 1988. He received the IEEE Centennial Medal in 1984, was elected a Fellow in 1989, and was the Society's Distinguished Lecturer, 1997-1998. He has been an influential member of the IEEE Technical Activities Board (TAB) since 1976 in several capacities.

Among the Society's members, Bill is most widely known for his enterprising development of the Society's major publication, The Transactions on UFFC. He has been an Associate Editor since 1980, and Editor-in-Chief since 1985. Bill's vigorous enthusiasm inspired an explosive growth in the number of papers submitted by authors from around the world. By staffing key posts of Associate Editors, Bill sustained the high quality of the technical papers while guiding growth into new areas of specialty.

In his acceptance remarks after receiving the award, Bill expressed appreciation for the recognition, and reaffirmed the point that Jim had made at the outset: students and research keep him energized.

1998 Distinguished Service Award

Dr. Herman van de Vaart became the second recipient of the Distinguished Service Award during Awards Ceremonies on October 6, 1998. The award recognizes individuals who have devoted meritorious service to the operation of the UFFC Society.

Herman was presented with a cash award, a plaque and a certificate with the citation:

"For three decades of leadership of the UFFC Society revamping the Society's operations including finance, constitution and awards, enabling the Society to broaden its horizons.

Dr. Herman van de Vaart (center) received the UFFC-S 1998 Distinguished Service Award. John Vig (left) presented the award and Jan Brown (right) introduced Herman

Dr. Jan Brown, of JB Consulting, gave the introductory remarks for Herman's award during the opening Plenary Session. Showing photographs of Herman from the 1960's to the current time, Jan noted that Herman has remained marvelously consistent in his professional approach (and in his hair style as well). Of all the positions held by Herman since 1968, Jan observed that none had more impact than facing the challenge, as Financial Chair in 1986, of near financial bankruptcy of the Society. In the years following, Herman's astute leadership generated the healthy reserves with which the Society now operates. Even today, Herman remains a resolute taskmaster in overseeing AdCom's expenditures, ensuring that the funds are used to best advantage. With the same vision, Herman expanded the scope of the Society by formally integrating the Frequency Control and Ferroelectrics communities into the Society. He revamped the Society's constitution and by-laws to encompass the three major technical areas with equal status, which led to the Society officially changing its name in 1986.

Another function Herman strongly influenced is the Awards Committee which he chaired from 1973 through 1980. Herman revitalized this committee which had languished in the 1960's, reinstituting recognition of authors of well-written papers (the "Best Paper Award as it was then known) and enlarging committee membership. Also, through Herman's efforts, the Society created a new Achievement Award in 1980 to recognize outstanding professional accomplishments among the Society's membership.

Herman has influenced other aspects of the Society's life as well. He was elected President in 1984 and 1985, following three years as Secretary/Treasurer. For the Ultrasonics Symposium he served as General Chair in 1989, Co-chair for the 1994 symposium, and Co-chair again in 1998. He chaired the Technical Program Committee in 1980, and was a member of that Committee 1975 through 1989. In his local Boston UFFC Chapter, Herman was Secretary/Treasurer 1970 through 1971, and Chair 1971 through 1972. Further he actively participated on IEEE's governing body of the Technical Activities Board (TAB) in 1984 and 1985, and on TAB's Finance Committee from 1986 through 1989.

Herman received the IEEE Centennial Award in 1984, and was elected a Fellow in 1988 for his contributions to surface acoustic wave (SAW) technology.

In his acceptance remarks after receiving the award, Herman expressed his appreciation for this recognition and went on to make two important points to the members. First, he encouraged all members, and especially young members, to become active in running the Society by joining one of the Society's committees. He acknowledged that his own participation has brought unexpected benefits, including giving him the opportunity to meet many engineers from around the world. This broad knowledge was particularly helpful in mid-career when he sought a new position after the closing of Sperry's Research Center where he had worked for many years. Herman cited, in particular, the influence of his boss, Richard Damon (who was later elected President of IEEE), for guiding his career. Second, Herman encouraged members to bring new members into the Society to strengthen the collaborations which develop through common goals.

Recently retired from Allied Signal, Herman affirmed his intention to remain active in the Society. He expressed the thought succinctly, "Participating in the Society has always been great fun, and still is!

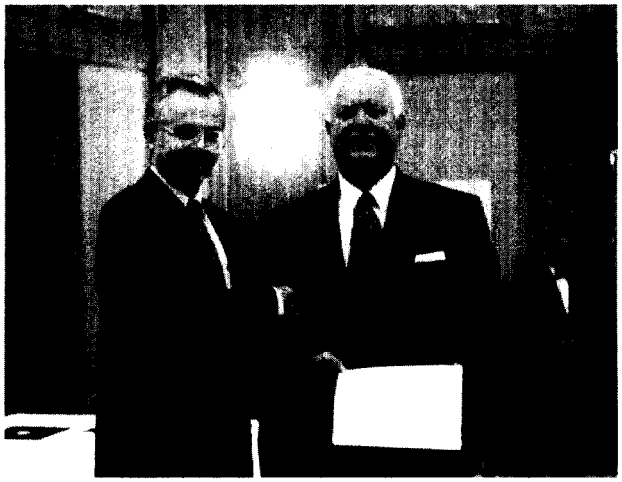
1997 Outstanding Paper Award

The recipients of the Outstanding Paper Award were presented plaques and certificates during the Plenary Session of the International Ultrasonics Symposium on October 6, 1998, in Sendai, Japan. The Awards Committee announced the winning paper for articles which appeared in the 1997 UFFC-S Transactions. The winning paper is:

A System for Ultrasonic Beacon-Guidance of Catheters and Other Minimally-Invasive Medical Devices

David H. R. Vilkomerson
and
David J. Lyons
EchoCath, Inc.
Princeton, New Jersey

David Vilkomerson (center) received the Outstanding paper Award on behalf of him and David Lyons. John Vig (left) presented the award and Roger Tancrell introduced David



Professor Bernie Tittman, (right) Penn State, received a certificate from John Vig as the 1998-1999 UFFC-S Distinguished Lecturer.

Professor Jom Miller, (right) Washington University, receives his Fellow certificate from John Vig.

which was published in the IEEE Transactions on UFFC, Vol. 44, March 1997, pp. 496-504.

David Vilkomerson accepted the awards for himself, and for his co-author David Lyons who was unable to attend the ceremonies. In his acceptance remarks, Dr. Vilkomerson expressed his appreciation to the anonymous reviewers whose critical, constructive comments helped strengthen the paper. David also noted that the combined efforts of all volunteers who serve as Editor-in-Chief, Associate Editors, referees and the authors themselves create an excellent technical journal recognized worldwide. The authors expressed pleasure at being able to contribute to the journal.

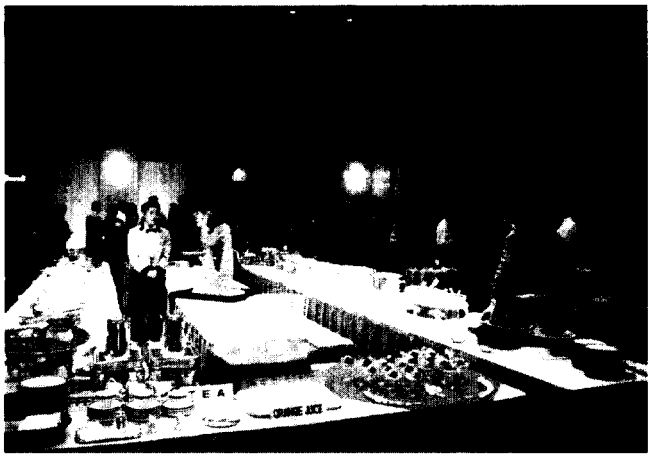
The paper gives an overview of the technical issues confronted in designing and implementing an ultrasonic device for operation in a very confined space. The system is an interesting combination of acoustic and electromagnetic communications for visualizing the tip of a medical catheter while it is being maneuvered within a patient. The approach is both practical and novel (although not entirely new). The authors had to bring together a wide variety of physical principles to carry out the work, which they did in both the conceptual and experimental realms. In fact, the paper summarizes several years of development. The presentation is of very high quality, and addresses key technical issues in a style that is highly readable. The authors discuss the technical issues in a way that is interesting to the specialist while simultaneously understandable to the non-specialist in the field. The Society congratulates the authors on their achievement.

Roger H. Tancrell
Chair, Awards Committee

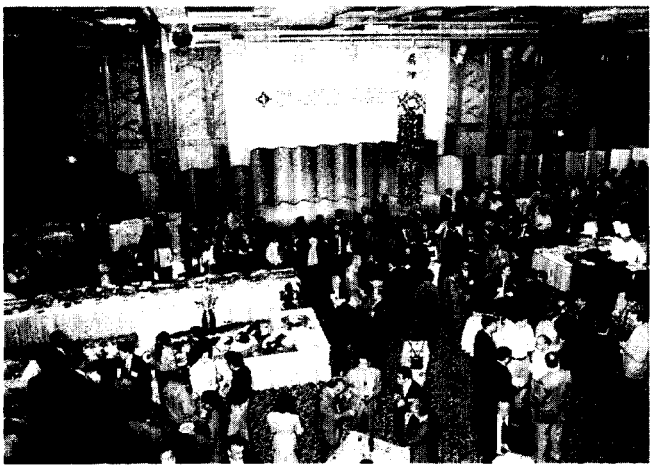
Cultural and Social Programs

The Japanese tea ceremony was enjoyed by everyone.

The Japanese style tea party.



The student reception.



More than 500 attended the social reception.

Grandiose social reception with "gifts of the sea and indispensable chopsticks."

The traditional Japanese breaking of the sake barrel.

I understand there is some free sake in here if we can just bust it open!

Sergei Kondratiev, Ali Baghai-Wadji, Clinton Hartmann, Noriyoshi Chubachi, Sergei Doberstein, Mitsutaka Hikita.

Akiko Chubachi, Sergei Doberstein, Natalya Naumenko, Natalya Polzikova.

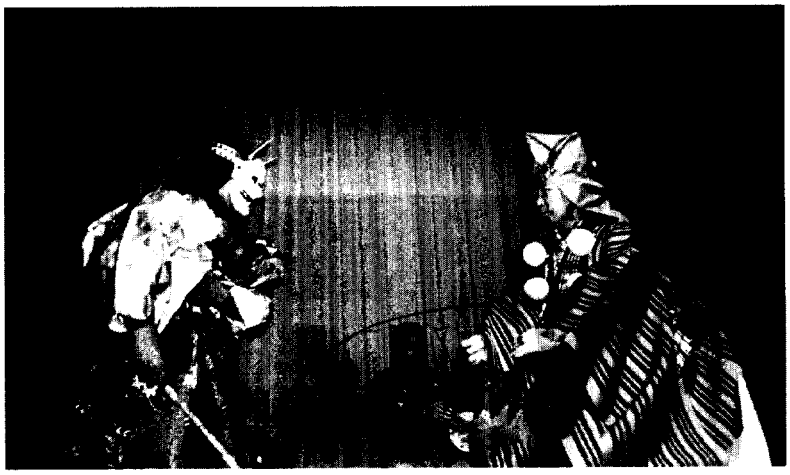
Three of the UFFC Society's Distinguished Lecturers distinguishing themselves. Left to right: Bill O'Brien, Jim Greenleaf, and Bernie Tittman.

Akiko and Noriyoshi Chubachi in traditional Japanese dress.

The mystic powers of Japanese beer.

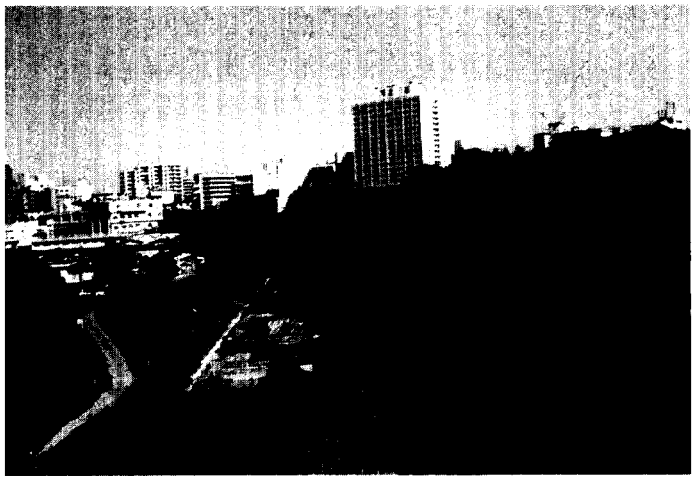
The "Noh" Performance Featuring Mr. Rejiro Tsumura

Mr. Tsumura.



Guest Tours of the 1998 IEEE International Ultrasonic Symposium

During the symposium, lady members of the local committee planned three bus tours, a Half Day City Tour, a Tour Along the Coast of Sendai and a Tour Along the Mountainside. More than 120 guests, who came from all over the world, enjoyed the Japanese culture as well as the sightseeing around Sendai. They especially took pleasure in seeing the parks, museums, lakes, and temples, shopping, trying on traditional clothes, (Kimono), eating raw seafood, (Sashimi), and painting wooden dolls (Kokesh)i. The following photos show these activities.



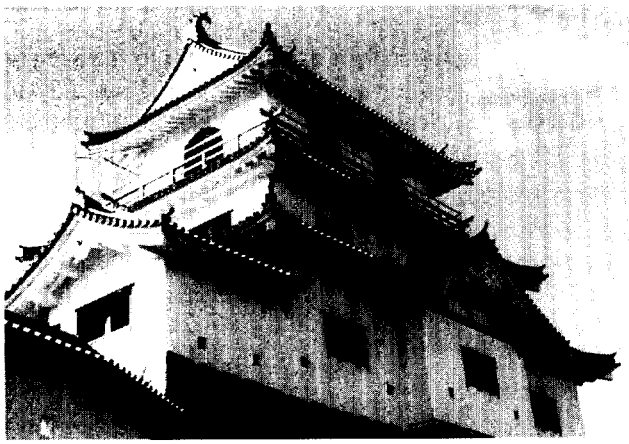
Sendai, a place of urban and natural environment.

Kitayama Gozan Temple.

Rinnoji Temple

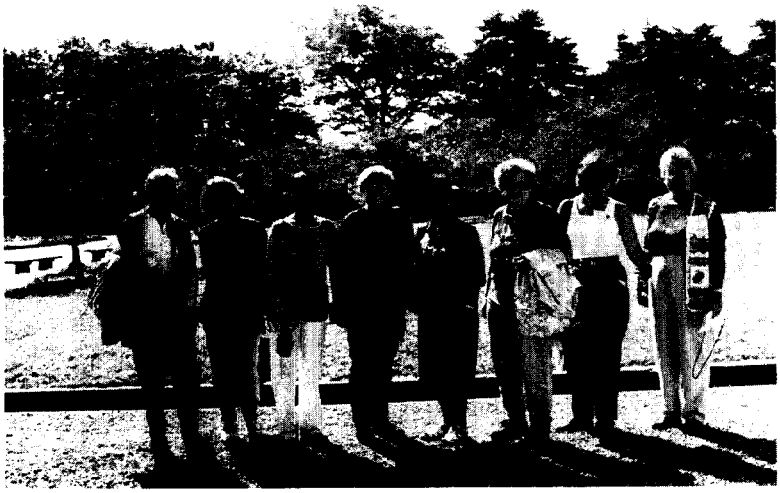
Astrid and Elke enjoyed the fresh fruits

Astrid Ermert, Emma Maerfeld and Elke Lerch are all smiles.



Japanese Temple.

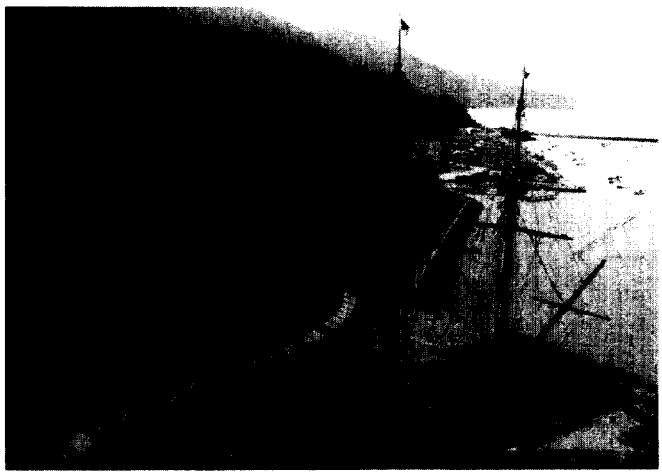
Marianne Lynnworth models a kimono in the Sendai Museum.



The skys were sunny and the weather warm.

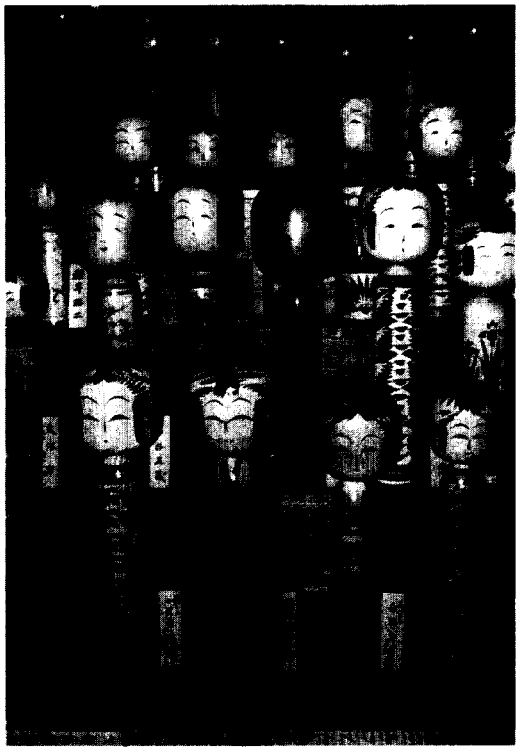
Eating a Japanese style lunch.

Guest Tours



Reconstructed Japanese sailing ship built for Japan's first diplomatic mission to Europe in the early 1600's.

Kokeshi Doll Artisans.



Kokeshi Dolls.

Thresa Hickernell and Akiko Chubachi.

The 7th International Workshop on Modern Acoustics - Ultrasonics

The 7th International Workshop on Modern Acoustics (7th IWMA) Ultrasonics was held on October 11-14, 1998, at the Jinling Hotel, Nanjing, China. The 7th IWMA was organized by Nanjing University of China, and in cooperation with the IEEE UFFC Society (USA) and International Center for Theoretical Physics (ICTP, Italy). The Workshop was sponsored by the Education Ministry of China, National Natural Science Foundation of China, Jiangsu Education Commission, Jiangsu Science and Technology Society and Jiangsu Acoustical Society, which was also supported by Shantou Institute of Ultrasonic Instruments. Prof. Shu-yi Zhang of Nanjing University, a member of Chinese Academy of Sciences, and Prof. C.S.Tsai of University of California, Irvine, a Distinguished Lecturer of IEEE UFFC, USA, were the co-chairs.

The workshop received 110 papers, among which 30 were invited papers. The papers cover MEMS, nonlinear acoustics and sonochemistry, photoacoustics and laser ultrasonics, acousto-optics, NDE, SAW, and underwater acoustics, etc.

The workshop had a total of 120 participants, one third came from 10 foreign countries, such as, USA, UK, Germany, Canada, Italy, Belgium, Japan, Korea, India and Malaysia. There were 25 invited speakers including Prof. R.J.Wei, the Member of Chinese Academy of Sciences (Nanjing University), Prof. R.M.White, the Member of American Academy of Sciences (University of California, Berkeley) and Prof. D.O.Thompson, the Member of American Academy of Engineering (Iowa State University) and other Distinguished Lecturers of IEEE UFFC Society, as well as famous scientists in different fields. The invited speakers gave very excellent lectures with wide and advanced science contents, and vivid descriptions, which attracted the attendees great interests.

The President Prof. S.S.Jiang and a Vice President Prof. J.Chen of Nanjing University attended the Opening Ceremony and Celebration Banquet and warmly gave speeches to welcome the participants from home and foreign countries.

At the end of the workshop, most of the participants, especially the foreign scientists, visited the State Key Lab of Modern Acoustics and Institute of Acoustics of Nanjing University, which gave them deep impression.

During the workshop , the participants also enjoyed very much the concert of Chinese classical music and modern songs well performed by the teachers and students of Nanjing Art college.

The high quality of the papers and speeches, as well as the good organization made the workshop a great success.

Yaojun Wang and Tiehai Wang
Institute of Acoustics,
Nanjing University

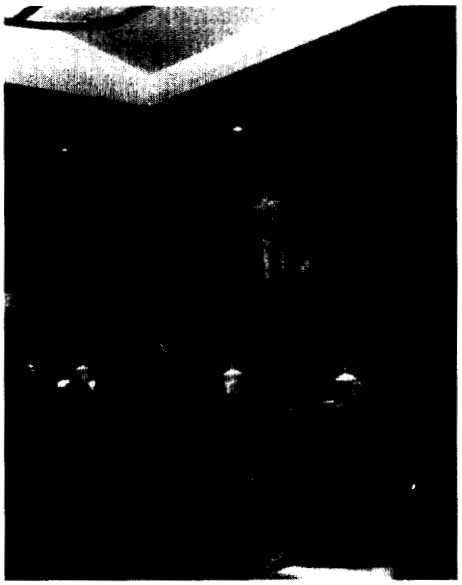
Opening Session Professor Shuyi Zhang, Director fo the Institute of Acoustics, Nanjing University.

Opening Session, Professor Chen Tsai, University of California - Irvine.

Lecture Hall for Presentations.

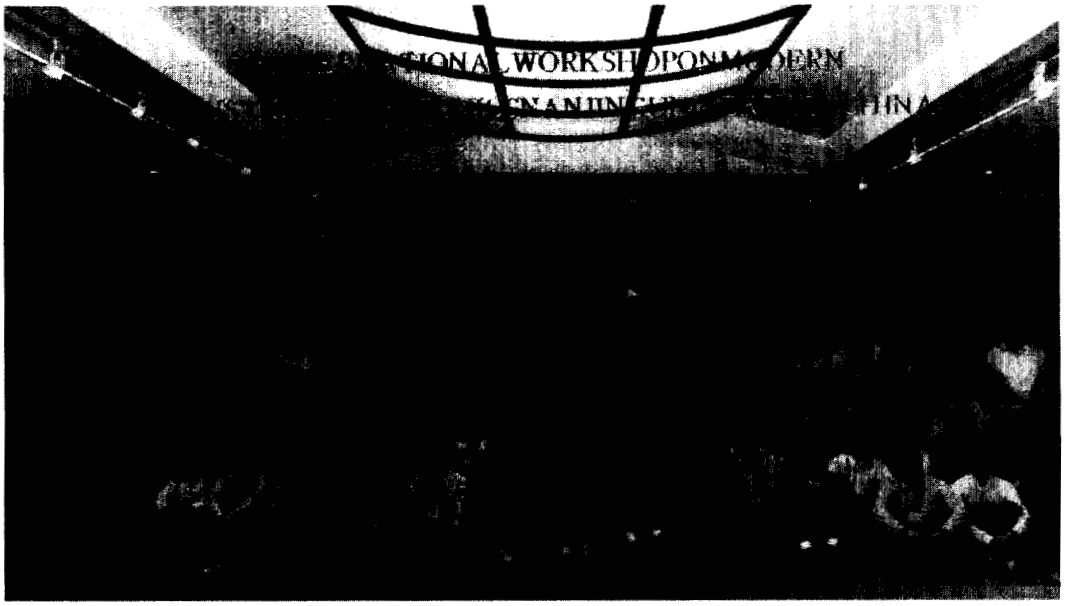
Professor Chen, Vice President, Nanjing University.

Professor Yamanouchi, Tohoku University.



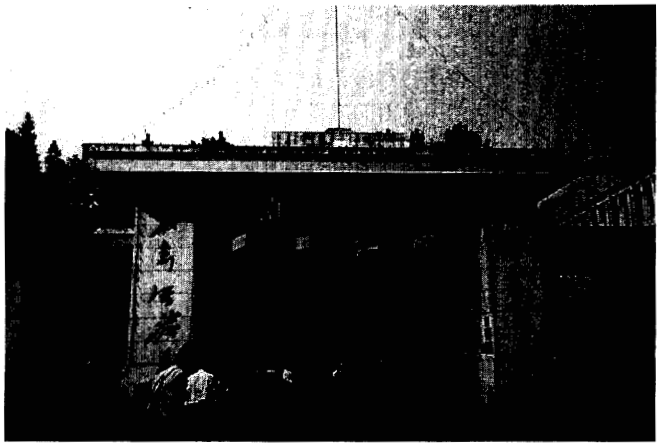
Professor Richard White, Plenary Speaker, University of California, Berkeley.

Fred Hickernell and Eric Adler.

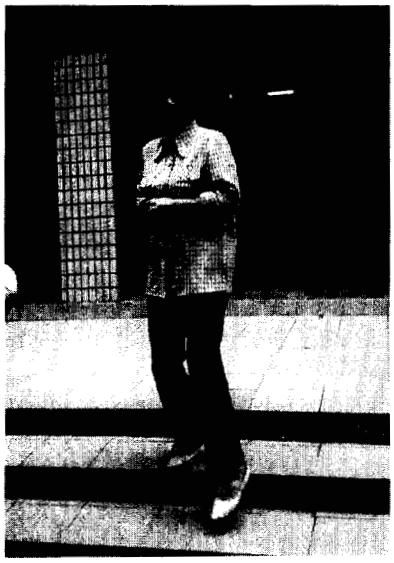


Participants in the 7th International Workshop on Modern Acoustics - Ultrasonics Nanjing University, China.

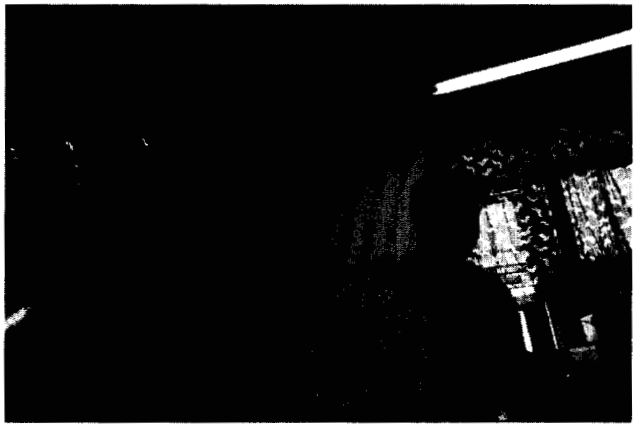
Tour of The Institute of Acoustics, Nanjing University



Entrance to Nanjing University.

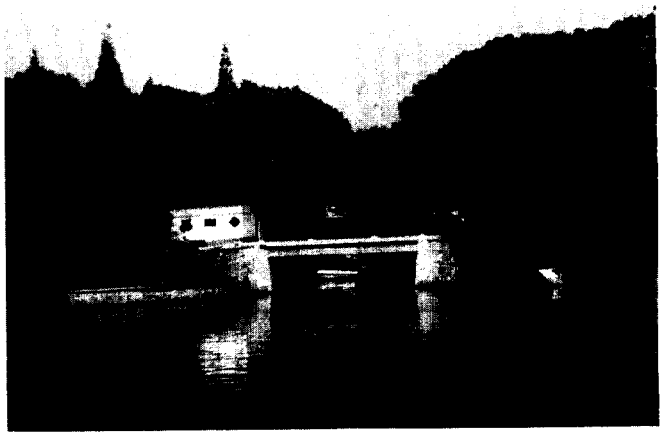


Professor Shuyi Zhang welcomes group to the Institute of Acoustics.



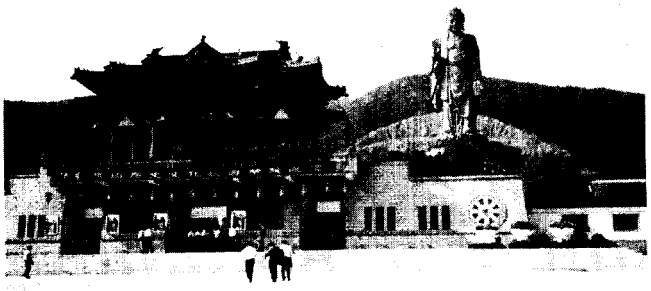
Tours of Wuxi and Yangzhou, China

Chen and Shirley Tsai on bus and ready for touring.



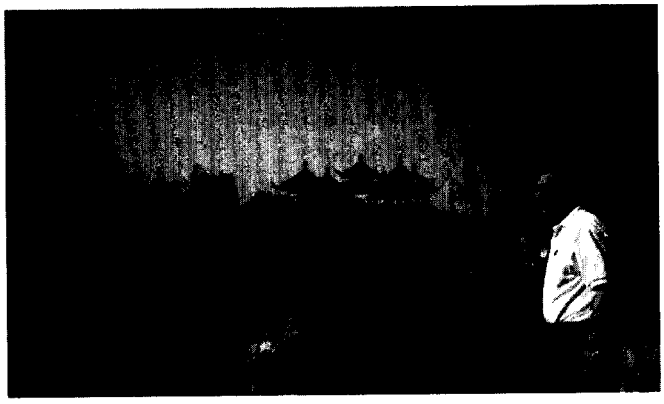
The Li Gardens in Wuxi.

"On the Road Again."



Lingsham Scenic area outside Wuxi.

The Great Buddha at the Lingsham Scenic Area.



Gerry Blessing at the Slender West Lake, Yangzhou.

The Jade Factory in Yangzhou.

Field trip for young students at the Slender West Lake Park in Yangzhou.

Tour Group at Park in Yangzhou.

IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society Administrative Committee

SOCIETY OFFICERS

President	J. R. Vig U. S. Army Communications-Electronics Command, Fort Monmouth
President-Elect	F. S. Hickernell Motorola (ret.)
Vice-President, Ferroelectrics	A. Safari Rutgers University
Vice-President, Frequency Control	J. A. Kusters Hewlett-Packard Company
Vice-President, Ultrasonics	J. F. Greenleaf Mayo Clinic
Vice-President, Publications	J. Brown JB Consultants
Secretary-Treasurer	G. K. Montress Raytheon Company, Research Division

ELECTED COMMITTEE MEMBERS

1997 - 1999	W. D. Hunt Georgia Institute of Technology
1997 - 1999	D. R. Pape Photonic Systems Incorporated
1997 - 1999	B. R. Potter Vectron Technologies Incorporated
1997 - 1999	K. Yamanouchi Tohoku University
1998 - 2000	T. R. Gururaja Hewlett-Packard Company
1998 - 2000	D. B. Hauden LPMO-CNRS
1998 - 2000	A. H. Meitzler
1998 - 2000	K. Uchino The Pennsylvania State University

1999 - 2001	S. M. Pilgrim Alfred University
1999 - 2001	H. F. Routh Advanced Technology Laboratory
1999 - 2001	S. E. Trolier-McKinstry The Pennsylvania State University
1999 - 2001	M. Yamaguchi Chiba University

EX-OFFICIO COMMITTEE MEMBERS

Awards	R. H. Tancrell Tancrell Associates
*Fellows**	R. M. White University of California, Berkeley
Finance	H. van de Vaart VDV Associates
*Historian**	F. S. Hickernell
Long Range Planning (Ad Hoc)	D. C. Malocha University of Central Florida, Orlando
Membership-Chapters	S. M. Pilgrim Alfred University
*Newsletter**	W. D. Hunt Georgia Institute of Technology
Nominations	F. S. Foster University of Toronto
Standards	A. Ballato U. S. Army Communications-Electronics Command, Fort Monmouth
*Transactions**	W. D. O'Brien, Jr. University of Illinois, Urbana
Senior Past President (1998 - 2001)	D. C. Malocha University of Central Florida, Orlando
Senior Student Member* (1998-1999)	C. H. Frazier University of Illinois, Urbana

Junior Student Member* (1999-2000)

IEEE HEADQUARTERS

Director, Division IX*	E. K. Reedy
Managing Director, TAB*	M. Ward-Callan
General Manager, IEEE*	D. J. Senese

**Non-Voting Position*

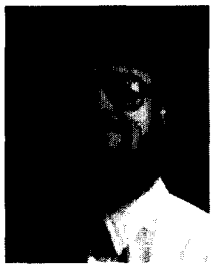
Newly Elected Ad Com Members

Masatsune Yamaguchi was born in Nagoya, Japan, on 15 September, 1944. After he received the Ph.D. degree in electrical engineering from Tokyo Institute of Technology in 1972, he joined the Department of Electrical Engineering, Chiba University and, in 1975, was appointed as Associate Professor. From 1980 to 1982, he worked at the Department of Engineering Science, Oxford University, England. After he came back to Chiba University, he was appointed as Professor of Electrical Engineering in 1987.

While his main responsibility in Chiba University has basically been research and education related to Electrical Engineering, he served as Director of University Computer Centre from 1992 to 1996, as Director of University Library from 1996 to 1998, and now is Dean of the Faculty of Engineering. He has also been a member of University Council from 1995.

As a graduate student, he started his academic career, working on the preparation of ferrite films with a view to applying them to magnetostricitve ultrasonic transducers. Since he moved to Chiba University in 1972, he has mainly been involved in theoretical and experimental investigations of surface acoustic wave (SAW) devices, electromechanical sensor devices, and ZnO, AlN and PZT films for high frequency (VHF-SHF) ultrasonic applications. He is really one of the pioneers who have discussed the excitation and propagation of leaky SAWs on highly piezoelectric substrates and successfully applied them to practical devices.

As one of his hobbies, he has occasionally been on the air as an amateur radio operator since 1960, and is a member of DX Century Club. Although he has recently been on 6 m band, he will be again moving down to HF (mainly 20, 15 and 10 m) bands according to an increase in sun spot numbers. Why not give him a shout when his call sign, JA2AYP, is heard on the air?



Steven M. Pilgrim was born in Chambersburg, Pennsylvania, in 1962. He received an Honors B.S. in Polymer Science with highest distinction and a Ph.D. in Solid State Science from The Pennsylvania State University in 1983 and 1987, respectively.

He is currently Associate Professor of Materials Science and Engineering at the New York State College of Ceramics at Alfred University and adjunct graduate professor at the University of Maryland College Park. At Alfred University, he was instrumental in beginning the Bernard Jaffe Piezoceramic Clean Room and the Laboratory for Electronic Ceramics, which he now serves as Director. He has been a member of IEEE since 1992 and serves as Associate Editor of IEEE Transactions of Ultrasonics, Ferroelectrics, and Frequency Control. He is also

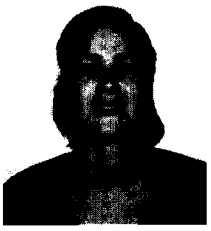
Co-Chair for the IEEE International Symposium on the Applications of Ferroelectrics XII in 2004.

Prior to joining NYSCC in 1993, he was a Senior Scientist at Martin Marietta Laboratories in Electronic Ceramics and Smart Materials. In that position, he led the team which built and tested the first electrostrictive sonar drivers and explored the application of electrostrictors for medical ultrasound uses. Prior to joining Martin Marietta he was a Corning Graduate Fellow at the Materials Research Laboratory of The Pennsylvania State University working in the area of active noise cancellation and vibration damping.

Dr. Pilgrim's primary research interests are electrostrictors and piezoelectrics for electromechanical actuators, smart materials, and nonstructural composites. He has published more than 35 reviewed articles and made more than 120 technical presentations. He is an Eagle Scout and active member of the American Ceramic Society, the American Chemical Society, the Materials Research Society, Keramos, and Tau Beta Pi.

Steve Pilgrim and his wife have a son and a daughter. In his leisure time he is a Webelos Den Leader, Science Demonstrator, and canoeist.

Student Ad Com Member



Karen E. Morgan received a B.S. degree in 1996, from the Physics Department at the University of Virginia, Charlottesville, VA. As an undergraduate, she was involved in research in the areas of Medical Physics, Near Field Scanning Optical Microscopy, and Atmospheric Physics. During this time, she became a member of Phi Beta Kappa and Sigma Pi Sigma.

Since June 1996, she has been pursuing a Ph.D. in Biomedical Engineering in the Department of Biomedical Engineering at the University of Virginia, Charlottesville, VA. She is currently involved in research in the area of contrast assisted ultrasound imaging, under the advisement of Dr. Katherine Ferrara. In 1997, she was awarded a Whitaker Foundation Fellowship and a NSF Graduate Research Fellowship. She is currently supported by a Whitaker Foundation Fellowship and plans to finish her degree in May of 2000. She is a student member of BMES and IEEE.

AdCom Briefs

The Administrative Committee (AdCom) meeting of the Ultrasonics, Ferroelectrics, and Frequency Control Society (UFFC-S) was called to order at 9:00 A.M., 4th October 1998, by J. R. Vig, UFFC-S AdCom President, at the Metropolitan Hotel, Sendai, Miyagi, Japan. Introductions of attending members were conducted.

J. R. Vig, UFFC-S AdCom President, introduced C. H. Frazier, the UFFC-S's AdCom Student Member for 1998.

G. K. Montress, UFFC-S Secretary/Treasurer, moved to approve the minutes of the 12th June, 1998, UFFC-S AdCom meeting. The motion was seconded by R. H. Tancrell. The motion passed.

G. K. Montress, UFFC-S Secretary/Treasurer, reported that one e-mail/FAX ballot had been conducted during the time period from 13th June, 1998, to 3rd October 1998. This ballot approved an $8k financial grant to the 7th International Acoustics Workshop (Beijing, China, October 1998).

W. D. O'Brien, Jr., UFFC-S Transactions Editor-in-Chief, presented oral and written reports. The Federation of Animal Science Societies' (FASSs') handling of the editing and printing operations for the UFFC-S Transactions continues to go very well. A continued arrangement for 1999 is planned.

W. D. O'Brien, Jr., UFFC-S Transactions Editor-in-Chief, reported that the UFFC-S Transactions is available on-line now, beginning with the January 1998 issue. All UFFC-S members in good standing should be able to access the UFFC-S Transactions on-line.

The UFFC-S's AdCom approved funds to place the 1997 volume of the UFFC-S Transactions on line as well, as soon as possible.

W. D. O'Brien, Jr., UFFC-S Transactions Editor-in-Chief, reported that the Special Issue on Sensors & Actuators was published in the September 1998 issue of the UFFC-S Transactions. Two additional Special Issues of the UFFC-S Transactions are currently in progress, specifically: a Special Issue on Applications of Ferroelectrics, and a Special Issue commemorating the 30th Anniversary of Piezoelectric PVDF.

F. S. Hickernell, UFFC-S Newsletter Editor-in-Chief, presented an oral report. The deadline for submission of material for the April 1999 (Spring) issue of the UFFC-S Newsletter is 6th January 1999. This earlier than usual deadline is due to the fact that the 1999 IEEE International Frequency Control Symposium is scheduled for 12th - 16th, April 1999, (a joint meeting with the 13th European Frequency and Time Forum) in Besancon, France, and the UFFC-S Newsletter will contain information describing arrangements for the meeting.

F. S. Hickernell, UFFC-S Newsletter Editor-in-Chief, indicated that W. D. Hunt will be taking over as UFFC-S Newsletter Editor-in-Chief, effective with the Spring 1999 issue. F. S. Hickernell will provide assistance during the transitional period.

H. van de Vaart, UFFC-S Finance & Operations Committee Chair, presented oral and written reports. The UFFC-S remains in good financial shape, with reserves of approximately $825k as of 31st August, 1998.

A. Safari, UFFC-S Ferroelectrics Vice-President, presented oral and written reports. The 1998 ISAF, held in Montreux, Switzerland, on 24th - 27th August, 1998, was very successful, with 618 registered attendees.

A. Safari, UFFC-S Ferroelectrics Vice-President, noted that the 2000 ISAF will be held in Hawaii with A. Kingon and D. Viehland serving as General Co-Chairs and the 2002 ISAF will be held in Gaithersburg, Maryland, with S. Freiman serving as General Chair. Niagara Falls, Canada, was approved as the venue for the 2004 ISAF, with S. M. Pilgrim serving as General Chair.

J. A. Kusters, UFFC-S Frequency Control Vice-President, submitted a written report. R. M. Garvey was approved as the General Chair for the 2003 and 2004 IEEE International Frequency Control Symposia. The 2001 IEEE International Frequency Control Symposium will be held in Seattle.

J. A. Kusters, UFFC-S Frequency Control Vice-President, noted that the 1999 IEEE International Frequency Control Symposium will be held in Besancon, France, as a joint meeting with the 13th European Frequency & Time Forum. The meeting is scheduled for 12th - 16th April, 1999. D. B. Sullivan is serving as General Chair for the symposium. The budget for the 1999 IEEE International Frequency Control Symposium was approved by the UFFC-S's AdCom.

J. A. Kusters, UFFC-S Frequency Control Vice-President, noted that the 2000 IEEE International Frequency Control Symposium will be held in Kansas City, Missouri, on 6th - 9th June, 2000. It will be the first jointly sponsored meeting with the EIA. J. D. Prestage has agreed to serve as Technical Program Chair for the meeting.

J. F. Greenleaf, UFFC-S Ultrasonics Standing Committee Chair, presented an oral report.

J. F. Greenleaf, UFFC-S Ultrasonics Standing Committee Chair, noted that the 1999 IEEE International Ultrasonics Symposium will be held in Lake Tahoe, Nevada; the 2000 IEEE International Ultrasonics Symposium will be held in San Juan, Puerto Rico; the 2001 IEEE International Ultrasonics Symposium will be held in Nashville, Tennessee; and the 2002 IEEE International Ultrasonics Symposium will be held in Munich, Germany. Hawaii was approved as the venue for the 2003 IEEE International Ultrasonics Symposium, with J. F. Greenleaf and W. D. O'Brien, Jr., serving as General Co-Chairs for the meeting.

The budget for the 1999 IEEE International Ultrasonics Symposium was approved.

R. H. Tancrell, UFFC-S Awards Committee Chair, presented oral and written reports. B. R. Tittmann is the current UFFC-S Distinguished Lecturer for 1998-1999. The title of his presentation is: "Turning Up the Heat on NDE. He has already started his activities as the UFFC-S Distinguished Lecturer for 1998-1999.

R. H. Tancrell, UFFC-S Awards Committee Chair, indicated that W. D. O'Brien, Jr., is the recipient of the 1998 UFFC-S Achievement Award, while H. van de Vaart is the recipient of the 1998 UFFC-S Distinguished Service Award.

R. H. Tancrell, UFFC-S Awards Committee Chair, indicated that D. H. R. Vilkomerson and D. J. Lyons are joint recipients of the UFFC-S's Outstanding Paper Award for the 1997 Transactions Volume. The title of their paper, which appeared in the March 1997 issue of the UFFC-S Transactions, is: "A System for Ultrasonic Beacon-Guidance of Catheters and Other Minimally-Invasive Medical Devices.

B. T. Khuri-Yakub was approved as the UFFC-S's 1999-2000 Distinguished Lecturer. The title of his presentation will be: "Capacitive Micromachined Ultrasonic Transducers.

R. H. Tancrell, UFFC-S Awards Committee Chair, is formulating a plan for a uniform set of UFFC-S sponsored awards which spans the three primary technical areas of interest to the UFFC-S. He is coordinating this effort with the Ferroelectrics, Frequency Control, and Ultrasonics Standing Committees.

N. K. Batra, UFFC-S Chapter/Membership Services Committee Vice-Chair, presented oral and written reports.

E. S. Furgason, UFFC-S Chapter/Membership Services Committee Chair, has prepared an updated 1998 UFFC-S membership brochure for general use. An updated 1999 UFFC-S membership brochure is being prepared as well.

A. Ballato, UFFC-S Standards Committee Chair, submitted a written report. The UFFC-S's Standards Committee is currently responsible for nine items: eight standards and one project.

B. R. Tittmann, UFFC-S Nominations Committee Chair, presented oral and written reports. The election for new UFFC-S AdCom members with their three year terms in office starting on 1st January, 1999 has been delayed by difficulties at IEEE headquarters. The slate of nominees from IEEE Regions 1 - 7 is A. Amin, L. Maleki, S. M. Pilgrim, S. Trolier-McKinstry, H. F. Routh, and B. A. Tuttle. Nominees from IEEE Regions 8 - 10 are: S. Umemura and M. Yamaguchi. Three new UFFC-S AdCom members will be elected from among the Regions 1 - 7 candidates, while one new UFFC-S AdCom member will be elected from among the Regions 8 - 10 candidates. The election should be completed by early November 1998.

D. C. Malocha, UFFC-S Long Range Planning Committee Chair, presented a draft of the UFFC-S's Strategic Planning Document. Based upon comments during the meeting, a final version of the UFFC-S's Strategic Planning Document will be prepared and submitted to IEEE headquarters.

The next UFFC-S AdCom meeting will be held at 9:00 A.M., on 18th June 1999, in conjunction with the 1999 IEEE International Ultrasonics Symposium's 2nd TPC meeting, in Rosemont (Chicago), Illinois.

The UFFC-S AdCom meeting adjourned at 4:45 P.M.

Gary K. Montress
UFFC-S AdCom Secretary/Treasurer
1998 - 1999

WELCOME NEW UFFC-S MEMBERS

"We welcome the following new members to the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society who have joined in the past six months.

Kotru, Sushma	AL	Bric, Allen J.	MD	Boulanger, Jean-Simon	Canada	Akiyama, Iwaki	Japan
Surthi, Shyam	AL	Fedewa, Russell J.	MD	Koptenko, Sergei	Canada	Beg, Mirza M.	Japan
Huff, Daniel W.	AZ	Friend, James R.	MD	Marmet, Louis	Canada	Fujimoto, Naotoshi	Japan
Benharouga, Imad	CA	Hertz, Edward R.	MD	Mukherjee, Binu K.	Canada	Fukuura, Atsuomi	Japan
Benton, Robert H.	CA	Judge, David M.	MD	Startseva, Margarita	Canada	Hachiya, Hiroyuki	Japan
Campos, Mac J.	CA	Hsu, Wan-Thai	MI	Chen, Weizhong	China	Hayashi, Yoshihiro	Japan
Deardorff, Dana L.	CA	Sejlon, Frederic M.	MI	Cheng, Jianchun	China	Kuribayshi, Kaori	Japan
Deng, Jinquan	CA	Yang, Kyoung	MI	Gong, Xiufen	China	Murota, Masao	Japan
Dong, Mouqun	CA	Jost, Michael A.	MO	Li, Madqiang	China	Nakamura, Hitoshi	Japan
Easler, David M.	CA	Glisson, Jr., Allen W	MS	Shin, I. Fen	China	Nitani, Takahiko	Japan
Grunwald, Sorin B.	CA	Anderson, Martin E.	NC	Shue, Yongqu	China	Omori, Tatsuya	Japan
Gupta, Mamta	CA	Sadowski, Bogdan	NC	Wang, Xinlong	China	Saitoh, Atsushi	Japan
Guracar, Ismayil	CA	VanBruggen, John	NC	Wang, Yaojun	China	Shiba, Fumikazu	Japan
Heckman, Earl	CA	Craven, J. Joseph	NH	Xu, Boling	China	Shin, Kwang-Ho	Japan
Jackson, Derek C.	CA	Crossley, Ian	NJ	Xu, Hang	China	Sugimoto, Tsumeyoshi	Japan
Kemherer, Jason T.	CA	Huang, Rui	NJ	Zhang, De	China	Tonomura, Kikuo	Japan
Mucke, Lars H	CA	Kain, Aron	NJ	Zhang, Dong	China	Yagi, Shin-ichi	Japan
Nims, A. J.	CA	Hietala, Vincent M.	NM	Zhang, Xixiong	China	Yamada, Toru	Japan
Ormsby, Theodore C.	CA	Wood, Gerald W.	NM	Zhang, Zhong-Ning	China	Yoshii, Yoshiharu	Japan
Patton, Charles R.	CA	Carroll, Jr., James J.	NY	Montoya, Carlos M	Colombia	Jhang, Kyung Y.	Korea
Pawlan, Jeffrey	CA	Chen, Xucai	NY	Schlaikjer, Malene	Denmark	Kim, Mod-Joon	Korea
Pei, Jun	CA	Moore, Harold	NY	Abbas Farhat	England	Lee, Han Hee	Korea
Pongo, Thomas Carlo	CA	Park, Gap L.	NY	Dickinson, John	England	Song, Samuel Moon-Ho	Korea
Ritchey, George L.	CA	Fleischman, Aaron J.	OH	Koskela, Julius	Finland	Khalifeh, Imad M.	Lebanon
Rowett, Kevin J.	CA	Rowland, Steve	OH	Makkonem, Tapani	Finland	Ocampo-Gallindo, Victor	Mexico
Sehari, Babak	CA	Van Keuls, Fred	OH	Salo, Jamme	Finland	Hoffmann, Aswin L.	Netherlands
Stout, Charles E.	CA	Dunn, Jerry L.	OK	Tikka, Pasi Tapani	Finland	Robers, Maarten A.	Netherlands
Wetenkamp, Scott F.	CA	White, Chris T.	OK	Camus Estelle C.	France	Minken, Helge N.	Norway
Cobb, Wes N.	CO	Helgeland, Jon L.	PA	Delpierre, Pierre	France	Chuquihuara-Araujo, Vicente	Peru
Cross, William C.	CO	Teeple, Ryan Joseph	PA	Jean-Michel, Norreas	France	Kelemen, Andras	Romania
Eliason, Jarrod R.	CO	Zhu, Wenhao	PA	Obregon, Juan	France	Maghar, Teodor	Romania
Berson, William	CT	Schwartz, Robert W.	SC	Pernod, Philipe	France	Biryakov, Sergey V.	Russia
McCambridge, James D.	DE	Blagrave, II, James E.	TX	Prigent, Michel	France	Korkishko, Yuri M.	Russia
Clark, Bruce E.	FL	Burch, Kenneth, R.	TX	Elbrecht, L.	Germany	Polzikova, Natalia I.	Russia
Nabritt, Sylvester M.	FL	Dayton, Paul A.	VA	Helbeck, Sebastian	Germany	Lee, Kwok H.	Singapore
Northcutt, James B.	FL	Lin, Ray Lee	VA	Lin, Keh-La	Germany	Lin, Stak P.	Singapore
Snow, Karen A.	FL	Czenszak, Stephen P.	WA	Schmidt, Wolfram	Germany	Diaz, Vicente	Spain
Connelly, Jeffrey A.	GA	Lazenby, John C.	WA	Stichanowski, Alexander	Germany	Lagerlot, Peter B.	Sweden
Huang, Zhaoran	GA	Morgan, Karen E.	WA	Uhlendorf, Volkmar	Germany	Lofquist, Torbjorn	Sweden
Indech, Robert	GA	Ldeffler, Chris A.	WI	Vonschickfus, Manfred	Germany	Thornell, Greger	Sweden
Keller, Dristopher A.	GA	Sorebo, John H.	WI	Gonzalez, Jorge Amadeo	Guatemala	Kondratiev, Serguei	Switzerland
Solomon, Michael L.	IL	Zhang, George Y.	WI	Khalili, Abed	Iran	Chang, Shu H.	Taiwan
Curatolo, Susana	KS			Oghabian, Mohammad Ali	Iran	Lin, Cheng H.	Taiwan
Cantor, Evan P.	MA	Colombo, Carlos	Argentina	Whitmarsh, Victor G.	Ireland	Tai, Cheng-Chi	Taiwan
Charlotin, Jr., Francois	MA	Regazzoni, Pablo	Argentina	De Gregorio, Antonio	Italy	Yu, Yi L.	Taiwan
Geringer, Michael D.	MA	Yeca, Aangel C.	Argentina	Gris, Marco	Italy	Ergun, Arif S.	Turkey
Gonahue, Gregory J	MA	Frioni, Victor A	Australia	Lasagni, Cesare	Italy	Sarwar, Ivan	Ukraine
Lutwak, Robert	MA	Mather, Melissa L.	Australia	Pappalardo, Nassimo	Italy	Fuenmayoz, Fernando J. P.	Venezuela
Raju, Balasundar I.	MA	Kaltenbacher, Manfred	Austria	Sotgiv, Riccardo	Italy		
Rego, Steve	MA	D'Hooge, Jan	Belgium	Staderini, Alessandro	Italy		
Stockwell, Jason T.	MA	Van Huggel, Sabine	Belgium				

UFFC Financial Report 12/31/98

The UFFC Society continues to be in excellent financial shape. As can be seen from the accompanying IEEE year-end financial statement for 1998, we posted a deficit of $44.1K versus a budgeted deficit of $69.2K. However, due to the very early Newsletter deadline, this statement is what is called pre-closing, pre-audit, and thus is subject to change. For instance, the final distributions from the All Transactions Package (ATP) and the BookBroker program have not been determined yet. If both of these come in close to budget, the deficit will be reduced to about $10K. Considering that our operating budget is around $1M, this is not bad. A few years ago AdCom voted to aim for a break-even budget, since our reserves were considered adequate for a Society our size.

The Transactions continue to do well. Starting in 1997, our Transactions are now produced by the Federation of Animal Scocieties Society (FASS), formerly called the American Dairy Societies Association in Savoy, Illinois. As can be seen, the expense to FASS for 1998 was higher than budgeted, in part due to the fact that the number of pages published was higher than budgeted. On the other hand, the income from the voluntary and overlength page charges and the reprints were nearly twice budget; FASS seems to be more efficient in collecting these charges than IEEE. With the expected additional income from ATP the Transactions should be close to break-even. Also, the exit fee will be reduced to $11K in 1999, and will be removed in 2000.

The breakdown of the Symposia income and expense is as usual confusing. Only 1997 Symposia were budgeted for 1998. However, the 1995 and 1996 IUS finally closed their books and the remaining surplus credited the UFFC account. Most of the surplus was already credited in previous years (for actuals, see the footnotes at the bottom of the table). The 1996 ISAF also closed its books in 1998 and reported a surplus of $25.9K. The 1997 IUS had a surplus of $47.4K which is included in the statement, but the final report did not make it in time to record actual income and expense. The same is for the 1998 IFCS; its surplus of $11.1K was received by IEEE, but the actual income and expense will be recorded on the 1999 operating statement. The item "Conference Related" is new this year; it includes such expenses as student and foreign speaker travel support to attend Symposia provided by AdCom which was previously included under AdCom expenses.

The total expense under AdCom is close to budget. The President's Office budget now includes $25K of discretionary funds, but very little of it was used this year. However, AdCom expense this year was higher than budgeted, primarily because the cost of meeting expenses of AdCom subcommittees incurred during the 1995 IUS, 1997 IUS and 1998 IUS were all debited this year.

With the deficit $44.1K, the reserves as of 12/31/98 are $601.7K. As stated above, this is preliminary and may change with the post-closing, post-audit report. Also, our long term investment as of 10/31/98 stood at $346.6K, a 73% increase over the $200K invested during 1993 and 1994. With our adequate cash reserves, AdCom authorized additional investments of $50K each effective 1/1/99 and 7/1/99.

Herman van de Vaart. Chair, Finance and Operations Committee. January 29, 1999.

New Fellows of the UFFC Society

Congratulations to the following members of our society who have been elevated to the rank of Fellow of the IEEE.

Mr. Marvin Elmer Frerking
Rockwell Collins, Cedar Rapids, IA
For contributions to the design, manufacture, and understanding of quartz crystal oscillators.

Dr. Guillermo C. Carlos Gaunaurd
Naval Surface Warfare Center, Rockville, MD
For contributions to direct and inverse scattering interaction of acoustic, elastic and electromagnetic waves with matter.

Dr. Yury V. Gulyaev
Institute of Radioengineering and Electronics, RAS
Moscow, Russia
For seminal contributions to acoustoelectronics, acoustooptics and microwave acoustics.

Dr. William Henry Horton
Piezo Technology, Inc., Orlando, FL
For leadership in the development and manufacture of monolithic crystal filters, quartz crystal resonators, and oscillators.

UFFC OPERATING FINANCIAL STATEMENT 12/31/98

	INCOME		EXPENSE		NET	
UFFC	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
INTEREST/CAPITAL GAINS	19.0	40.7	0.0	-16.9	19.0	57.6
TRANSACTIONS	313.4	309.6	283.5	330.0	29.9	-20.4
NEWSLETTERS	0.0	0.0	11.9	17.5	-11.9	-17.5
NON-PERIODICALS	1.6	0.9	1.5	1.6	0.1	-0.7
SYMPOSIA	498.3	839.6	419.4	732.0	78.9	107.6
IEEE ADMINISTRATION	0.0	0.0	39.7	29.9	-39.7	-29.9
ADCOM	0.0	0.0	145.5	140.8	-145.5	-140.8
TOTAL	**832.3**	**1190.8**	**901.5**	**1234.9**	**-69.2**	**-44.1**

	INCOME		EXPENSE		NET	
TRANSACTIONS	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
MEMBERSHIP FEES	29.2	27.1	0.0	0.0	29.2	27.1
INDIVIDUAL NON-MEMBER SUBS.	76.7	67.8	0.0	0.0	76.7	67.8
ALL TRANSACTIONS PACKAGE	131.0	115.5	0.0	0.0	131.0	115.5
AIRFREIGHT	7.5	0.0	0.0	0.0	7.5	0.0
VOLUNTARY PAGE CHARGES	37.4	35.5	9.4	0.0	28.0	35.5
OVERLENGTH PAGE CHARGES	31.6	46.9	2.9	0.0	28.7	46.9
REPRINTS	0.0	16.5	0.0	0.0	0.0	16.5
PUBLICATION ADMINISTRATION	0.0	0.0	7.1	7.6	-7.1	-7.6
EDITING (FASS)	0.0	0.0	0.0	21.2	0.0	-21.2
UFFC EDITOR	0.0	0.0	37.5	50.1	-37.5	-50.1
COMPOSITION/PRINTING, ETC. (FASS)	0.0	0.0	188.0	212.7	-188.0	-212.7
INDEXING	0.0	0.0	3.1	3.4	-3.1	-3.4
EXIT FEE	0.0	0.0	22.0	22.0	-22.0	-22.0
PERIODICAL RELATED	0.0	0.3	7.5	7.0	-7.5	-6.7
SUBSCRIBER HANDLING	0.0	0.0	6.0	6.0	-6.0	-6.0
TOTAL	**313.4**	**309.6**	**283.5**	**330.0**	**29.9**	**-20.4**

	INCOME		EXPENSE		NET	
SYMPOSIA	BUDGET	ACTUAL	BUDGET	ACTUAL	BUDGET	ACTUAL
1995 ULTRASONICS*	0.0	225.3	0.0	200.5	0.0	24.8
1996 FERROELECTRICS	0.0	144.2	0.0	118.3	0.0	25.9
1996 ULTRASONICS**	0.0	206.4	0.0	204.7	0.0	1.7
1997 ULTRASONICS***	324.4	47.4	285.6	0.0	38.8	47.4
1997 FREQUENCY CONTROL	173.9	205.2	148.8	172.3	25.1	32.9
1998 FREQUENCY CONTROL****	0.0	11.1	0.0	0.0	0.0	11.1
BOOKBROKER	0.0	0.0	-15.0	0.0	15.0	0.0
CONFERENCE RELATED	0.0	0.0	0.0	36.1	0.0	-36.1
CONFERENCE ADMINISTRATION	0.0	0.0	0.0	0.1	0.0	-0.1
TOTAL	**498.3**	**839.6**	**419.4**	**732.0**	**78.9**	**107.6**

ADCOM	BUDGET	ACTUAL
PRESIDENT'S OFFICE	33.0	6.2
ADCOM EXPENSES	64.0	95.3
CHAPTERS / DIST. LECTURER	16.0	23.9
TECHN/MEMBERSHIP/AWARDS	21.0	10.3
IEEE HQ EXPENSE	6.5	8.2
OTHER	5.0	-3.1
TOTAL	**145.5**	**140.8**
LONG TERM INVESTMENT 10/31/98	**346.6**	**+73.3%**

OUTSTANDING LOANS	
1998 ULTRASONICS	45.0
1999 ULTRASONICS	25.0
1999 FREQ. CONTROL	20.0
TOTAL	**90.0**
RESERVES 1/1/98	645.8
SURPLUS/DEFICIT	-44.1
RESERVES 12/31/98	**601.7**
CASH 10/31/98	262.6

* 1995 IUS Actuals: Income $265.3K, Expense $200.5K, Net $64.8K
** 1996 IUS Actuals: Income $265.4K, Expense $204.6K, Net $60.8K
*** 1997 IUS Actuals: Income $330.9K, Expense $283.5K, Net $47.4K
**** 1998 IFCS Actuals: Income $202.5K, Expense $191.4K, Net $11.1K

VDV-3/24/99

Chapter Activities

Boston UFFC-S Chapter

The Boston Chapter has embarked upon another successful season (1998 - 1999) with five presentations/meetings planned. Attendance at each meeting ranges from fifteen to thirty-five or forty. Meetings are usually scheduled for the second or third Wednesday in the month. Meetings start at 5:30PM with refreshments (coffee and doughnuts) and informal discussions, the talk is usually scheduled for an hour from 6:00PM to 7:00PM, with an informal Chinese buffet dinner with the speaker afterwards at a local restaurant. Meetings are held at Raytheon's Lexington Laboratory (formerly the Raytheon Research Division). The following is a listing of talks and meetings planned/completed for this season:

1) November 11th, 1998: Harmonics are Causing a Revolution in Diagnostic Ultrasound Imaging
   Thomas L. Szabo, Hewlett-Packard Medical, Andover, MA
2) March 1999: To Be Determined
3) April 1999: To Be Determined
4) May 1999: To Be Determined
5) June 1999: To Be Determined

Bernie Tittmann, the UFFC-S's 1998-1999 Distinguished Lecturer, will be scheduled in one of the open meeting dates listed above. His talk is entitled Turning up the Heat on NDE.

Chapter Co-Ordinators for the year are Gary Montress (Chairman), Gerry Jennings, Roger Tancrell, Raj Gururaja, and William Ossmann.

Gary Montress
1998 - 1999 Chapter Chairman
Boston UFFC-S Chapter

German Chapter

Short-Form Report on the 2nd International Workshop on Commercial Radio Sensor and Communication Techniques Munich, Germany, 18 September, 1998

The 2nd International Workshop on Commercial Radio Sensor and Communication Techniques was held in conjunction with the 1998 International Radar Sysmposium (IRS 98) in Munich, Germany, 18 September, 1998. Both Symposium and Worskhop took place in the Munich Arabella Hotel. The Workshop was sponsored by the IEEE German MTT/AP Chapter, the IEEE German UFFC Chapter, The German Institute of Navigation (DGON), and the Information Technology Society within the Verband Deutscher Elektrotechniker (ITG within VDE). Workshop Co-Chairmen were Professor Robert Weigel, University of Linz, Austria, and Professor Jürgen Detlefen, Munich University of Technology, Germany. The workshop was organized in cooperation with DGON by Dr. Andreas Springer, University of Linz, Austria and Uwe Siart, Munich University of Technology, Germany.

The workshop was a full-day workshop incorporating three oral sessions and one panel discussion session. The oral sessions were entitled "Radio Communications," Frontend Components, and "Radio Sensing." The sessions were respectively chaired by Dr. Andreas Springer, University of Linz, Austria, Dr. Leonhard Reindl, Siemens AG Munich, Germany, and Dr. Alfred Pohl, Vienna University of Technology, Austria. The panel discussion session was devoted to Vehicular Radio Sensor Applications. As panelists, Dr. Blöcher, Daimler Benz Aerospace, Ulm, Dr. Heide, Siemens AG Munich, Dr. Lissel, Volkswagen AG, Wolfsburg, Professor Rohling, Braunschweig University of Technology, Germany, Dr. Sauer, BMW AG Munich, and Dr. Wenger, Daimler Benz, Ulm, were active. The discussion was moderated by Jürgen Detlefsen and Robert Weigel.

The workshop included 14 papers with presenters coming from Austria, Canada, France, and Germany. The workshop had an audience of about 60 participants coming from Austria, Canada, China, France, Germany, Korea, Poland, Russia, and the USA. The objective of the workshop was to encourage communication between researchers and engineers as well as between users and manufacturers in the field of wireless sensing and communications.

The SAW field was represented by the four papers:

A Review of SAW Technologies and Applications by J.-D. Chen, Nortel, Canada

Gated Chirps for Signal Processing and Communication Engineering by A. Pohl, L. Reindl, F. Seifert, and R. Weigel, Vienna University of Technology, Austria, Siemens, Germany, and University of Linz, Austria

A Discussion on Wireless Sensing Techniques for Various Measurement Problems in the Industry by P. Heide, Siemens, Germany

Wireless Remote Identification and Sensing with SAW Devices by L. Reindl, G. Scholl, T. Ostertag, A. Pohl, R. Weigel, Siemens, Germany, Vienna University of Technology, Austria, and University of Linz, Austria

Robert Weigel
University of Linz

Tokyo Chapter

The Tokyo Chapter held 11 technical meetings in 1998, in conjunction with the Technical Group on Ultrasonics of the Institute of Electronics, Information and Communications Engineers of Japan:

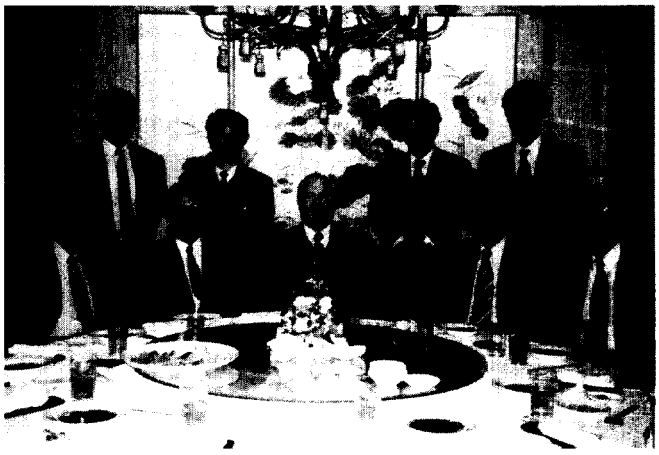
Date	Papers	Place
January 28-29, 1998	22	Kyoto
February 24, 1998	5	Kamakura
April 23, 1998	9	Tokyo
May 22, 1998	6	Tokyo
June 16, 1998	8	Tokyo
July 3, 1998	12	Tokyo
August 28, 1998	8	Hiratsuka
September 17-18, 1998	13	Sendai
October 27, 1998	12	Yokohama
November 16, 1998	6	Kohu
December 14, 1998	7	Tokyo

19th Symposium on Ultrasonic Electronics

The Tokyo Chapter sponsored the 19th Symposium on Ultrasonic Electronics (USE'J98) on November 26-28, 1998, at the Doushisha University in Kyoto, attended by more than 320 participants. Four invited talks and 135 contributed papers were presented. The papers will be published in the May 1999 issue of the Japanese Journal of Applied Physics.

UFFC-S 1998-1999 Distinguished Lecturer Program

Prof. B. R. Tittmann, Engineering Science and Mechanics, the Pennsylvania State University, the UFFC-S 1998-1999 Distinguished Lecturer, was invited to Japan, and he was there from November 25 to December 2. He favored us with impressive and instructive talks on the topic, "Turning up the Heat on NDE" at the USE '98 in Kyoto and at 150th Committee of Japan Society for the Promotion of Science in Sendai. (see photo)



Prof. B. R. Titmann with members ogf the IEEE-UFFC-Tokyo Chapter at the farewell party held in Sendai.
Front row (left to right) Kiyoshi Nakamura, Kazuhiko Yamanouchi, B. R. Titmann (Distinguished Lecturer) Matsune Yamaguchi (Chairman), Noriyoshi Chubachi. Back row (left to right) Ken Yamada, Yasuo Cho, Junichi Kushibiki (Vice Chairman), Kazushi Yamonaka

1998 IEEE International Ultrasonics Symposium in Japan

The 1998 IEEE International Ultrasonics Symposium including two Short Courses and three Presentations & Tours was held October 5th through 8th at the Hotel Metropolitan Sendai in Sendai, Japan. The detailed report is described elsewhere in this newsletter.

1999 Officers

The officers of the Tokyo Chapter for 1999 are:

Chairman: Professor Masatsune Yamaguchi, Faculty of Engineering, Chiba University, Yayoi, Inage-ku, Chiba 263-0022

Vice Chairman: Professor Jun-ichi Kushibiki, Faculty of Engineering,, Tohoku University, Aoba, Aramaki, Aoba-ku, Sendai 980-8579

Secretary: Associate Professor Keiji Sakai, Institute of Industrial Science, University of Tokyo, Roppongi 7-22-1, Minato-ku, Tokyo 106-0032

Treasurer: Associate Professor Kenya Hashimoto, Faculty of Engineering,, Chiba University, Yayoi, Inage-ku, Chiba 263-0022

Jun-ichi Kushibiki
Vice Chairman,
UFFC-S Tokyo Chapter

Phoenix Chapter

During 1998, UFFCS combined with APS, EDS, EMC, LEOS, and MTTS to have 10 Waves and Devices Chapter meetings with distinguished speakers, held at Arizona State University. The UFFCS sponsored two of the speakers during 1998. Professor William D. O'Brien of the University of Illinois presented a talk entitled "Modern Diagnostic Ultrasound Imaging – Assessing the Risks" in February. In November Dr. Ronald E. McKeighen presented a talk entitled, "An Overview of Developments in Medical Ultrasonic Imaging and Transducers." Average attendance for the meetings was 14.

Fred Hickernell
UFFCS Representative

Russian Chapter

The following were Russian Chapter activities during 1998:

1. Annual Students Conference on Electrotechnics and Radioelectronics, 25-26 February, 1998, in Moscow. There were 26 reports on UFFC topics
2. Joint conferences;
   Acoustoelectronics, Frequency Control and Signal Generation;
   4th International Symposium on Surface Waves in Solids and Layered Structures (I.Yakovkin memorial);
   International Conference Young Researchers on Acoustoelectronic and Acoustooptic Information Processing;
   7-12 June 1998, St.Petersburg. Total number of participants,170.

Now we also are planning the conference "Acoustoelectronics-2000," Moscow, June or September 2000.

Georgii Mansfeld,
Russian Chapter

Future UFFC-S Symposia

ULTRASONICS SYMPOSIA

1999 IEEE International Ultrasonics Symposium
Lake Tahoe, Nevada — 17 - 21 October 1999

For information contact:

Pierre B. T. Khuri-Yakub, *General Chair*
Stanford University
Department of Electrical Engineering
E. L. Ginzton Laboratory
Room 11
Stanford, California 94305-4085
USA
(650) 723-0718 (Phone)
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khuri-ya@ee.stanford.edu

Eric S. Furgason, *Technical Program Chair*
Purdue University
School of Electrical Engineering
1285 Electrical Engineering Building
West Lafayette, Indiana 47907-1285
USA
(765) 494-3526 (Phone)
(765) 494-2706 (FAX)
furg@ecn.purdue.edu

2000 IEEE International Ultrasonics Symposium
San Juan, Puerto Rico

For information contact:

Madjid A. Belkerdid, *General Chair*
University of Central Florida
Department of Electrical & Computer Engineering
Orlando, Florida 32816-2450
USA
(407) 823-5793 (Phone)
(407) 823-5835 (FAX)
mad@engr.ucf.edu (e-mail)

2001 IEEE International Ultrasonics Symposium
Atlanta, Georgia

For information contact:

Mack A. Breazeale, *General Chair*
University of Mississippi
National Center for Physical Acoustics
University, Mississippi 38677
USA
(601) 232-7490 (Phone)
(601) 232-7494 (FAX)
breazeal@olemiss.edu (e-mail)

2002 IEEE International Ultrasonics Symposium
Munich, Germany

For information contact:

Helmut Ermert, *General Chair*
Ruhr-Universitaet Bochum
Department of Electrical Engineering
Geb. IC6.132
Bochum D-44780
GERMANY
(49) 234-700-2842 (Phone)
(49) 234-709-4167 (FAX)
helmut.ermert@ruhr-uni-bochum.de (e-mail)

FREQUENCY CONTROL SYMPOSIA

1999 IEEE International Frequency Control Symposium
Besancon, France – 12 - 16 April 1999

For information contact:

Donald B. Sullivan, *General Co-Chair*
National Institute of Standards & Technology
Time & Frequency Division
Division 847
325 Broadway
Boulder, Colorado 80303
USA
(303) 497-3772 (Phone)
(303) 497-6461 (FAX)

or

Raymond J. Besson, *General Co-Chair*
LCEP-ENSMM
la Bouloie - route de Gray
25030 Besancon Cedex
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(33) 3 81-66-66-32 (Phone)
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Frederick L. Walls, *Technical Program Chair*
National Institute of Standards & Technology
Time & Frequency Division
Division 847
325 Broadway
Boulder, Colorado 80303
USA
(303) 497-3207 (Phone)
(303) 497-6461 (FAX)

2000 IEEE International Frequency Control Symposium
Kansas City, Missouri – 6 - 9 June 2000

For information contact:

Donald B. Sullivan, *General Co-Chair*
National Institute of Standards & Technology
Time & Frequency Division
Division 847
325 Broadway
Boulder, Colorado 80303
USA
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(303) 497-6461 (FAX)

Call For Front Cover Images

The IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control invites the submission of contributed front cover images. Consult the UFFC Transactions Home Page at http://uffc.brl.uiuc.edu/tr for submission procedures.

The inclusion of a front cover image in each issue will achieve one or more of the following objectives: (1) direct the attention of the UFFC Transactions' readership to a publication of special significance in that issue; (2) highlight work from an outstanding paper published in a former issue of the UFFC Transactions; (3) highlight outstanding work presented at UFFC-sponsored or related conferences; (4) recognize outstanding contributions published in other journals, but which are of interest to the UFFC Transactions' readership.

The front cover image can be ultrasound images, illustrations of UFFC-related techniques, or images from modalities of UFFC-related phenomena. The image or illustration will be accompanied with up to fifty (50) words of text describing the image or illustration, and including noncommercial credits.

Unsolicited, contributions are requested. Contributed images will be subject to a peer-review process by an editorial board to judge their appropriateness. The contributions will be reviewed primarily based on the above mentioned objectives. However, the aesthetic nature of the image or illustration will be an important factor in the final decision. Timeliness of the contribution will also be considered. The contribution of the front cover image and the review process will be handled only over the world wide web.

Prospective authors can submit their contributions by accessing the URL: http://uffc.brl.uiuc.edu/tr. However, uploading the image or illustration and text associated with the contribution are restricted by password access. The authors are required to send an e-mail message to uffcovers@brl.uiuc.edu to request a login and password to initiate the submission process. A complete set of instructions on how to upload your contribution is provided on the web site. Please submit only gif or (lossless) jpeg image formats at this time; as experience is gained, additional image formats will be possible.

A signed IEEE Copyright Form is required before the contribution will be reviewed. After the contribution has been successfully uploaded, the authors must complete the IEEE Copyright Form (available in the January issue) and send it to the Editor-in-Chief (see inside front cover for address). On the "Title of Paper" line, provide a brief title of the image; the word "image" or "illustration" must appear in the title. A cover letter must provide the name, address, telephone number, FAX number and e-mail address of each author, and a paper copy of the contribution; provide the order in which the authors' names should appear. Receipt of the letter and signed IEEE Copyright Form will be acknowledged.

Call For Papers

Special Issue on Applications of Ferroelectrics

(Submission Deadline: March 1, 1999)

The *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* invites the submission of manuscripts on Applications of Ferroelectrics that fall within the scope of the UFFC Transactions, including, but not limited to:

- Ferroelectric Single Crystals
- Ferroelectric Thin Film Devices
- Ferroelectric Capacitors
- Piezoelectric Sensors and Actuators
- Variable Conductivity Devices
- Infrared and Microwave Devices
- Ferroelectrics for Microsystems
- Non-linear Optical Devices
- Bio-materials and Glass Ceramics
- Novel Concepts for Synthesizing and Manufacturing Ferroelectric Materials

All contributions to the *UFFC Transactions* must be sent to the Editor-in-Chief:

William D. O'Brien, Jr.
Department of Electrical and Computer Engineering
University of Illinois
405 North Mathews
Urbana, IL 61801
217/333-2407

In the transmittal letter identify that the contribution is being submitted for publication consideration for the Applications of Ferroelectrics Special Issue. Consult the "Information for Contributors" for manuscript preparation and submission requirements that is published in the most recent January issue, or access the *UFFC Transactions* Home Page at http://www.ieee.org/uffc/tr.

All papers are subject to the normal peer-review process. Submission deadline is March 1, 1999 and the expected publication date is early-2000.

The guest editors for this special issue are Professor Ahmad Safari and Dr. Allen Meitzler.

Call For Papers

Special Issue on Frequency Control and Precision Timing

(Submission Deadline: July 1, 1999)

In commemoration of the first joint meeting of the IEEE International Frequency Control Symposium and the European Frequency and Time Forum in April, 1999, the *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* invites the submission of manuscripts on any of the following topics concerning frequency control and precision timing:

- Acoustic Filters and Oscillators
- Piezoelectric Materials
- Crystal Sensors and Transducers
- Microwave Oscillators
- Frequency Synthesis
- Atomic and Optical Frequency Standards
- Time Transfer Systems (GPS, GLONASS, etc.)
- Clocks for Space
- Noise and Aging

All contributions to the *UFFC Transactions* must be sent to the Editor-in-Chief:

William D. O'Brien, Jr.
Department of Electrical and Computer Engineering
University of Illinois
405 North Mathews
Urbana, IL 61801
217/333-2407

In the transmittal letter identify that the contribution is being submitted for publication consideration for the Frequency Control and Precision Timing Special Issue. Consult the "Information for Contributors" for manuscript preparation and submission requirements that is published in the most recent January issue, or access the *UFFC Transactions* Home Page at http://www.ieee.org/uffc/tr.

All papers are subject to the normal peer-review process. Submission deadline is July 1, 1999 and the expected publication date is early-2000.

The guest editors for this special issue are Drs. Thomas Parker, Lute Maleki, Michael Driscoll.

Call For Papers

Special Issue on Modeling, Optimization and Design of Surface and Bulk Acoustic Wave Devices

(Submission Deadline: December 15, 1999)

The *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* invites the submission of manuscripts on any of the following topics concerning modeling, optimization and design of surface and bulk acoustic wave devices:

- SAW and BAW effects and devices
- Periodic structures and models
- Nonperiodic structrures and models
- 2D and 3D models
- Waveguide structures
- Multi-track structures
- Multilayered structures

- Second- and higher order effects
- Models for packages, bond wires and EM interference
- Model reduction techniques
- Parameter extraction techniques
- Equivalent circuit models

- Frequency-domain methods
- Time-domain techniques

- Integral-equation based and boundary element methods
- Finite element methods
- Finite difference time domain methods
- Wavelet-based methods
- Parallel computing environments
- Fast algorithms

- Filter and transducer design techniques
- Linear and nonlinear optimization techniques
- Stochastic optimization
- Simulated Annealing
- Evolutionary computation
- Learning algorithms

All contributions to the *UFFC Transactions* must be sent to the Editor-in-Chief:

William D. O'Brien, Jr.
Department of Electrical and Computer Engineering
University of Illinois
405 North Mathews

Urbana, IL 61801
217/333-2407

In the transmittal letter identify that the contribution is being submitted for publication consideration for Modeling, Optimization and Design of Surface and Bulk Acoustic Wave Devices Special Issue. Consult the "Information for Contributors" for manuscript preparation and submission requirements that is published in the most recent January issue, or access the *UFFC Transactions* Home Page at http://www.ieee.org/uffc/tr.

All papers are subject to the normal peer-review process. Submission deadline is December 15, 1999 and the expected publication date is late-2000.

The guest editor for this special issue is Dr. Ali R. Baghai-Wadji.

Call For Papers

Special Issue on The 30th Anniversary of Piezoelectric PVDF

(Submission Deadline: July 1, 1999)

The *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* invites the submission of Applications Papers on any of the following topics concerning piezoelectric polymers:

- Medical and Industrial
- Devices
- Composite Materials and Devices
- Materials Characterization
- Device Simulation

All contributions to the *UFFC Transactions* must be sent to the Editor-in-Chief:

William D. O'Brien, Jr.
Department of Electrical and Computer Engineering
University of Illinois
405 North Mathews
Urbana, IL 61801
217/333-2407

In the transmittal letter identify that the contribution is being submitted for publication consideration for The 30th Anniversary of Piezoelectric PVDF Special Issue. Consult the "Information for Contributors" for manuscript preparation and submission requirements that is published in the most recent January issue, or access the *UFFC Transactions* Home Page at http://www.ieee.org/uffc/tr.

All papers are subject to the normal peer-review process. Submission deadline is July 1, 1999 and the expected publication date is early- to mid-2000.

The guest editors for this special issue are Professor Lewis Brown and Dr. Gerald Harris.

UFFC Transactions Home Page

Check out the *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control* Home Page at http://www.ieee.org/uffc/tr. There you will find the *UFFC Transactions* along with other interesting options. One of the options allows you to subscript on a list serve to receive e-mail announcements when a new issue of the UFFC Transactions is posted.

Congratulations to members Floyd Dunn and Mathias Fink who were honored by the Acoustical Society of America

Floyd Dunn received ASA's highest honor, the Gold Medal, for his "creative contributions to fundamental knowledge of ultrasonic propagation in, and interactions with, biological media." The award citation also praised Dunn's "sustained leadership in biomedical ultrasound" over the last five decades. Dunn is an emeritus professor of electrical engineering at the University of Illinois at Urbana-Champaign and an adjunct professor of radiation oncology at the University of Arizona.

"Time reversed Acoustics," an article that appeared in PHYSICS TODAY in March 1997, garnered the ASA Science Writing Award for Professionals in Acoustics for **Mathias Fink**, director fo the waves and acousitcs laboratory at the Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris and a professor of physics at Denis Diderot University (University of Paris VII) and at the Institut universitaire de France.

EXPRESS YOUR VIEWS.
Your ideas are valuable!

Nominations for UFFC-S ACHIEVEMENT AWARD

The Achievement Award is the highest Society-wide award presented to a member in special recognition of outstanding technical achievements. Take a moment to identify members whom you think deserve to be honored. The award is granted for significant technical publications in the field of ultrasonics, ferroelectrics, or frequency control; for presentation of lectures; and/or for service to the Society.

The award embraces all technical fields in the society, and includes both technical and organizational achievements. Each nomination receives serious consideration by the Officers and the Awards Committee. Nominations may be submitted at any time during the year.

Photocopy this section and send via FAX or mail:
(You may submit more than one if you wish.)

Here is my nomination for **Achievement Award**:

Nominee's Name & Main Contributions: _____

_____

_____

Your Name/Address: _____

_____

_____

Send at anytime to:

Roger H. Tancrell
Chair, UFFC-S Awards Committee
7 Valyn Lane
Wilmington, MA 01887-1147
Tel/FAX: (978) 657-9748
e-mail: r. tancrell@ieee.org

Nominations for UFFC-S DISTINGUISHED SERVICE AWARD

The Distinguished Service Award is a new award created by AdCom to recognize long-term support of the Society's activities. The first Award was presented in 1997. Recognition is given to those who innovate new Society programs, administer major Committees, manage Society functions, or promote the Society's areas of technical interest to the larger community. The recipient usually has served for many years with sustained participation in the Society's management. Selection is made by the Officers and the Awards Committee. Nominations may be submitted at any time. Who is the person you would like to honor in this way?

Photocopy this section and send via FAX or mail:
(You may submit more than one if you wish.)

Suggestions for the next **Distinguished Service Award**:

_____

_____

Your Name/Address: _____

_____

_____

Send at anytime to:

Roger H. Tancrell
Chair, UFFC-S Awards Committee
7 Valyn Lane
Wilmington, MA 01887-1147
Tel/FAX: (978) 657-9748
e-mail: r. tancrell@ieee.org

Nominations for DISTINGUISHED LECTURER AND/OR TOPIC

The UFFC-S Distinguished Lecturer is welcomed by organizations around the world to present an up-to-date review of new developments in ultrasonics, ferroelectrics, or frequency control. The Distinguished Lecturer represents the Society to the larger technical community, and stimulates interest in the Society's professional areas. Recent lecturers have spoken to local chapters, universities and companies throughout North America, Japan, Europe, China, and South America.

Which topics would you like to hear? Which member would give a stimulating lecture? Fresh ideas are always welcome. Nominations may be submitted at any time. Be heard by filling out the attached form.

Photocopy this section and send via FAX or mail:
(You may submit more than one if you wish.)

Suggestions for the next **Distinguished Lecturer and/or Topic**:

_____

_____

Your Name/Address: _____

_____

_____

Send at anytime to:

Prof. Mack A. Breazeale
Chair, UFFC-S Distinguished Lecturer
Subcommittee
The National Center for Physical Acoustics
University of Mississippi
University, MS 38677
Tel: (601) 232-7490
FAX: (601) 232-7494

UFFC Society Strategic Plan

Draft 3

1. Goal: Maintain and promote the three technical areas of the society: Ultrasonics, Ferroelectrics, and Frequency Control.

Background: The society has a number of mature and very important technologies. Examples include bulk and surface acoustic wave technology, physical acoustics, etc. These technologies continue to grow at a moderate rate and continue to require support through technical dissemination of ideas and recruitment of new engineers and scientists into their respective areas through conferences and publications. The society has several areas of significant potential growth of both people and technology. These areas include medical ultrasonics and imaging, sensor and actuator devices, and systems, and new materials for ferroelectrics and piezoelectrics application. These new areas need to be recognized and promoted through participation at symposia. Opportunities for workshops or new conferences need to be identified and promoted.

- Tactic 1: Long Range Planning Committee to review, starting in 1999, each of the three technical areas once every three years for all aspects of the operation and make recommendations to the AdCom and the respective VicePresident.
- Tactic 2: Awards Committee to develop a method for diversifying the Distinguished Lecturers with greater participation from industrial leaders.
- Tactic 3: A newly initiated society or conference award every year for the next five years, with external sponsorship, which is consistent with enhancing the society and recognizing technical achievement and professional service.
- Tactic 4: An initiative to be developed by the Membership Committee by Spring 1999 for sustaining and supporting local UFFC chapters.
- Tactic 5: Long Range Planning to develop recommendations by Fall 1999 for UFFC interaction with all North American and international activities, which include publications, conferences, workshops, etc., having overlap in technical areas of UFFC interest. As examples, cooperation should be initiated with the Ultrasonics Industry Association, Russian Acoustoelectronics Conference, etc
- Tactic 6: To establish liaisons in 1999 with other established organizations having similar interests, such as the Industrial Ultrasonics Association, the Electronic Industries Association, etc., for the benefit of our members and the promotion of our technical interests.

2. Goal: Enhance the Society Transactions

Background: The society currently publishes a semimonthly transaction, a biannual newsletter, and conference proceedings for each of its three conferences. Decrease in the time from submission to publication has been initiated and continues. Better tracking of papers has been initiated, and education and assistance to associate editors has been provided. Commercial printing and setup of the transaction has reduced the time to publication. Electronic submission and review is a goal for the future. Promotion of special issues in various technology areas continues and has been very successful.

- Tactic 1: Reduce the average time from submission to publication to 4 months or less.
- Tactic 2: Increase number of special issues each year.
- Tactic 3: Increase from a semi-monthly to a monthly publication by year 2000 due to increased submission.
- Tactic 4: Negotiate reciprocal agreements between societies for access to publications via the WEB beginning in 1998.

3. Goal: Promote Society Membership

- Tactic 1: Enhance membership drives at all sponsored or cosponsored conferences.
- Tactic 2: Greater promotion of free society membership signup at all UFFC sponsored conferences.
- Tactic 3: Enhance membership Outreach Program at cosponsored conferences outside North America by having a UFFC representative at conference.
- Tactic 4: President's Student Reception at all conferences.
- Tactic 5: Increase student membership by incentives and promotion at the universities.

4. Goal: Promote Volunteer Service

- Tactic 1: Recruit student members at conferences and through publication.
- Tactic 2: Recruit new investigators into society service at all levels.
- Tactic 3:Recruit greater participation of Region 8, 9, 10 members.
- Tactic 4: Addition of one or more student AdCom member.

5. Goal: Conference Initiatives

- Tactic 1: Maintain the current three principal conferences
- Tactic 2: Offer both printed and CDROM versions of all conference proceedings
- Tactic 3: Promote workshops in new technology areas
- Tactic 4: Diversify and expand sponsorship in conferences in Regions 8,9,10
- Tactic 5: Strengthen and diversify conference Technical Program Committees
- Tactic 6: Promote one new workshop each year for the next 3 years: 1999 – Piezoelectric Sensors, 2000 – High Coupling and Strain Ferroelectrics, 2001 – Medical Ultrasonics

6. Goal: Diversify Publication and Technical Product Formats

- Tactic 1: Provide transactions in printed and electronic format
- Tactic 2: Provide increased technology information via the WEB
  - Transaction
  - Conference Abstracts – past and present
  - Standards
  - Technology Information
  - History
- Tactic 3: CDROM publication of all archived transactions and conference proceeding
- Tactic 4: WEB publication of archived transactions and conference proceeding
- Tactic 5: Provide Newsletter on the WEB

7. Goal: Increase Availability and Decrease Development of Standards

- Tactic 1: Publish drafts in newsletter, transactions and/or WEB in a timely manner, as appropriate.
- Tactic 2: Greater membership participation in standards process
- Tactic 3: Decrease time in development and publication through drafts
- Tactic 4: Coordinate with other international standards organizations to reduce duplication and enhance standards.

Co-Editors Note

There is a twinge of guilt as I write this final editor's note sitting by the window here at home looking out on the sun shining brightly on the oranges on our citrus trees and know the outside temperatures are in the seventies. Recent reports over the last few weeks from parts of the USA and other parts of the world have spoken of freezing temperatures, severe winds, snow, ice, floods, and tornadoes. Of course, in Arizona we pay for the good winter weather with summer temperatures over 110 F (>43°C).

This newsletter has several features, and Bill Hunt and I divided up the duties as he assumes the Editor-in-Chief position for future newsletters. Our recognition of an increasing membership from outside the USA has prompted the international nature of our major conferences and the support of related conferences outside North America. The ISAF in Switzerland, Ultrasonics Symposium in Japan, the Acoustics Workshop in China, and the upcoming EFTF/FCS in France are examples of this reported in the newsletter. It is very gratifying to see the strong interest taken by our international members in the UFFC society, whose roots and activities for so many years were firmly planted in the United States. I was flooded with photos from the Sendai and Nanjing Symposia and had to choose what I thought would give readers the flavor of the symposia. The list of newsletter photographers for this issue numbers a dozen and it is risky to acknowledge all of them for fear of missing someone. For our readers who want a real banquet of beautiful photos on the Sendai symposium look on the personal website of Noriyoshi and Akiko Chubachi: http://www.asahi-net.or.jp/~kc2a-cyub/.

After 38 years and five months with Motorola, I have retired, but find myself just as busy with both technical and volunteer activities. I am looking forward to being more active in the affairs of the IEEE UFFC-Society in the next few years. We have a wonderful society, made so by great members.

Editing the newsletter is the best job in our society, and I apologize for monopolizing all these years. Over the past 22 years as newsletter editor we have moved from a typewritten, cut, and paste camera-ready layout to electronic submissions with scanning and layout provided by IEEE. The support of the IEEE magazines/newsletter staff has been fantastic. I thank them all for their support and encouragement.

There has never appeared a letter-to-the-editors column over the years since although people have felt free to talk to me directly about misspelled names and words, errors in numbers, misplaced captions, editorial corrections, etc.,etc. I have appreciated this feedback, and I hope it has left me a little more sensitive to our membership. I will close with some letters you might have sent and the kind of answers (some tongue-in-cheek) you might have read.

Q. *What qualified you to be a newsletter editor?*

A. In 1977, I was standing around at an AdCom reception when then President Lewis Claiborne of TI caught me in a weak moment, and I agreed to do the job.

Q. *Haven't you been editor long enough? I can't even remember how many newsletter editors we've had.*

A. Not many, only three appointed editors in 45 years, and I took up half the time trying to get it right.

Q. *How much do you get paid for being the editor?*

A. What I am worth.

Q. *I have been scrutinizing the newsletter for the past 20 years and have found several errors? What do you say to that?*

A. I guess I am not perfect after all. Besides, maybe it kept you as an interested member for all those years.

Q. *Has our snoozeletter won any awards?*

A. No. But it has been characterized as being the most photo-filled.

Q. *I downloaded the newsletter off the web and went to sleep before it was finished.*

A. Must be all those photos. Get a faster computer.

Q. *Why so many photos?*

A. You pick the correct answer:

We have such a photogenic membership.

People like to see their pictures in the newsletter.

A picture is worth a thousand words.

It better captures the spirit of our society than just words.

Members can spot the AdCom, program committee members, etc. at conferences.

The editor has encouraged the submission of pictures.

Q. *How do you come up with all those catchy photo captions?*

A. Some are supplied by the photographers and the others just come naturally.

Q. *You've managed to slip in pictures of your wife and children, and my picture has never been in the newsletter. How come?*

A. You've been lucky I haven't figured out a way to get my grandchildren in. They are cute and would have filled an entire issue.

Q. *How come when I was announced as Distinguished Lecturer, I didn't get my picture on the front cover? There was a picture of Waikiki Beach.*

A. Palm trees and ocean looked a lot better than you did.

Q. *I was appalled to see my name on the new members' list. I have been a member for many, many years.*

A. Paid your dues too late again, I guess.

Q. *Why have you asked us to add some personal comments to our professional biographies? That's our business.*

A. You can choose the answer again.

We all lead interesting lives and have stories to tell.

To show we have real human beings volunteering in our society.

Don't you like hearing what others enjoy doing aside from their profession?

Professional attainments sometimes make dull reading.

I can find something in common with someone else.

There are some good ideas for my own leisure activities.

Wow, we really do have a membership with diverse interests.

We are proud of the extra activities we engage in.

Q. *How come you didn't spell my name right in the newsletter.*

A. And to think I was the last one standing in the spelldown contest in third grade.

Q. *Is it really true that our international membership is growing faster than U.S. membership?*

A. You betcha. We are a very diverse group, culturally and geographically, united by our common interests in ultrasonics, ferroelectrics, and frequency control.

Q. *You never told us the answer to the question about the international unit called "one Meeker" which appeared in the spring 1998 newsletter. How come?*

A. Well, I'll give you a clue. It is a volume-weight unit relating to the condition of Thrygve Meeker's office just before retiring from Bell Laboratories.

Q. *How did they finally get you to retire as newsletter editor?*

A. After trying some very subtle hints and suggestions, the AdCom decided to elect me to another office.

Q. *Will we get a young, enthusiastic, good looking, intelligent editor to replace you?*

A. Absolutely! Our new Newsletter Editor-in-Chief is Professor William Hunt of Georgia Tech. Please give him all the support and encouragement you have given me over the years.

Wishing you God's richest blessings,
Fred

Editor's Note

Last year Fred Hickernell approached me about taking over as UFFC Newsletter editor. After much gnashing of teeth, I agreed to take the job. It was only later that I was to learn that Dr. Hickernell had been doing the job for almost a quarter of a century. I have only a handful of ties that are that old, and it is then with some trepidation that I pursue this assignment. Dr. Hickernell casts a long shadow, and I am likely to be in that shadow for quite some time. He has infused his own personal warmth and sense of community into this job, and I am hoping that I can perform my duties in a way that will live up to his legacy. There have been lean times and boom times for the UFFC during that quarter of a century, and Dr. Hickernell has helped us collectively maintain a sense of community — something that was not so easy to craft for an organization that is truly international. Please join me in thanking him for a job well done.

William Hunt

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