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NEWSLETTER**



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**1997 IEEE
International Ultrasonic Symposium**



Toronto, Ontario, Canada

October 5-8, 1997

1997 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM

INVITATION FROM THE GENERAL CHAIR

It is indeed a pleasure to invite you to join me in Toronto for the 1997 IEEE International Ultrasonics Symposium. The long history of our symposium dates back to the first meeting which was held in 1958 at Stanford University. Every year this symposium is held in a location that offers more than just convenience. We have come to expect an atmosphere that stimulates interaction and motivates enthusiasm.

The 1997 meeting marks the third time the symposium has been held in Canada and the first time it has been held in Toronto. The word Toronto actually means "meeting place" so it is fitting that we should gather here to share the latest and most exciting discoveries in the field of ultrasonics. Toronto has an international reputation as a large multicultural city with a dynamic arts community. In fact Toronto is famous for its theater which rivals London and New York in terms of its variety and vitality. In October you can expect the weather to be cool (not cold) but beautiful as the fall colors are at their peak. This fall don't miss the opportunity to sample the excitement. Even if you have to stay an extra day or two, it will be well worth the effort.

As it does every year, the technical program promises to provide the world's most authoritative and up to date view of research in ultrasonics. One of the wonderful features of the Ultrasonics Symposium is its multidisciplinary nature which brings together basic and applied research in a number of different fields. Attendees will have the opportunity to interact with the world's leading authorities in everything from fundamental materials issues through to commercial devices and their applications.

The members of the organizing committee (Kathy Ferrara, Tony Sinclair, Peter Smith, Doron Kishoni, Jian-Yu Lu, Peter Burns, and Susan Schneider) have toiled mightily on your behalf to make this the best Ultrasonics Symposium ever. I thank each of them for their generosity and their commitment to this endeavor. In turn we appreciate the efforts of the technical program committee and the guidance of the Administrative Committee of the Ultrasonics, Ferroelectrics, and Frequency Control Society under whose auspices the Ultrasonics Symposium is organized.

Stuart Foster
General Chair

1997 IEEE International Ultrasonics Symposium

TORONTO AREA

Toronto, Canada's largest, most cosmopolitan city, is a metropolis of imposing skyscrapers, leafy parks and colorful neighborhoods. Here, rising in a gentle slope from Lake Ontario, you'll discover a wealth of treasures to delight all your senses. Architecturally, Toronto is an eclectic melange of the 19th and 20th centuries, with an occasional glimpse into the 21st. But it's more than buildings. A network of ravine parks crisscrosses the city, with trails you can walk or jog. Toronto neighborhoods reflect the successive waves of immigration that have swept through the city. The result is a vibrant mosaic of cultures and tastes from every environment. According to the United Nations, Toronto is the most ethnically diverse city in the world. Since the Symposium is being held in the center of Toronto, you can walk to some of these neighborhoods or can visit the Eaton Centre, the Art Gallery of Ontario, the CN Tower or trendy Yorkville Village. As well, Toronto has become one of North America's centers for the performing arts. Guests interested in theater or opera are invited to take the opportunity and attend one of the many events. Alternatively, if sports is your game, Toronto offers you basketball with the NBA Raptors, hockey with the Maple Leafs, Canadian football with the Argonauts, and baseball with the Toronto Blue Jays. Try searching the web for exciting things to do.

Hotel Information

Toronto Marriott Eaton Centre, 525 Bay Street, Toronto, is located in downtown Toronto overlooking the 19th century Holy Trinity Church and connected to over 320 shops and services at the Eaton Centre Shopping Complex. It is close to the Metropolitan Toronto Convention Centre, Skydome, financial and theater districts. The Toronto Marriott Eaton Centre has 459 deluxe guest rooms including 24 suites and Concierge Level. Restaurants and lounges include the Parkside, a spectacular atrium restaurant; Characters Bar and Grill and the elegant Lobby Bar. Recreation facilities include the indoor pool, sun deck, fitness room, lockers, sauna and whirlpool. Services and features include nonsmoking rooms, facilities for persons with disabilities, guest room voice-mail, 24-hour room service, underground parking. Room rates are \$143 CDN (~\$106 US) + 7% GST (Good and Services Tax) for either single or double. For reservations and information, call 1-800-228-9290 or (416) 597-9200.

Airline and Car Rental

Special discounted airfares for the IEEE International Ultrasonics Symposium have been negotiated with Continental, Air Canada and United Airlines. All three airlines are offering 10% off regular coach fares, and a 5% discount off the lowest available special super-saver fares. Restrictions apply and airfares are guaranteed to be the lowest available when ticketed. Special rates have also been negotiated with Avis car rental agency.

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Travel arrangements using the designated air carriers, or the carrier of your choice, and car rentals may be made through IEEE Travel Services by calling (800) TRY-IEEE (800-879-4333) within the U.S. Outside the U.S., call (908) 562-5441 between the hours of 8:30 a.m. and 5:30 p.m. EST, Monday through Friday. When calling, please advise the Travel Counselor that you are traveling in connection with the "International Ultrasonics Symposium".

You may also fax your requirements to the IEEE Travel Service at (908) 562-8815. When faxing, please be sure to include your travel dates, departure time, phone and fax numbers. A Travel Counselor will contact you as soon as possible.

Airport Transportation

Airport Express provides ground transportation between all three Toronto Airport terminals and the Marriott Hotel. The ride takes about 1 hour and the fare is CDN \$12.50 each way, with the bus leaving the airport every 20 minutes. Taxi service is approximately CDN \$30-35 and takes about 30 minutes.

From Pearson Int'l Airport: Take Hwy. 427 South to Queen Elizabeth Highway/Gardiner Expressway East. Take York/Bay St. exit. Go north on Bay St. Hotel is on right just south of Dundas St. and just north of Queen St.

Currency

All costs are in US funds except where labeled CDN \$.

Registration and Fees

All Symposium participants and guests must register and are requested to wear badges. The Symposium fee includes admittance to all technical sessions, the Monday evening reception, and a soft-cover copy of the Symposium Proceedings (except for students, retirees, one-day and guest registrants). The guest fee includes a continental breakfast each morning and the Monday evening reception.

Symposium Fees:	Advance	On-Site
IEEE Members (a)	\$320	\$350
Non-Members (a)	\$400	\$420
Students & Retirees (b)	\$ 25	\$ 40
Guests, Adult (b)	\$ 30	\$ 35
Children Under 12 (b)	\$ 10	\$ 15
One-day Registration (b)	\$150	\$150
Life Members (b)	N/C	N/C
Short Course Fees:	Advance	On-Site
IEEE Members	\$110	\$120
Non-Members	\$140	\$150
Students & Retirees	\$ 40	\$ 50

(a) Includes proceedings

(b) Does not include proceedings

The reduced rates for advance registration are available only by completing the form located in the center of the Advance Program sent earlier by mail, by enclosing proper payment and mailing to:

1997 IEEE International Ultrasonics Symposium
c/o LRW Associates
PO Box 2530
Matthews, NC 28106

The Advance Registration must be received at LRW Associates by Sept. 19, 1997. Postmarks do not apply. Each registrant must complete a separate Advance Registration Form. The remittance is payable, in US Dollars only, by personal or company check drawn on a US Bank money orders, VISA or Master Card. Bank drafts, foreign currency and purchase orders will not be accepted for either advance or on-site registration. For advance registration, the remittance must accompany the Advance Registration Form.

Refund Policy

There will be a \$25.00 service charge to process refunds for those who have pre-registered but who are unable, for whatever reason, to attend the symposium. A letter requesting the refund should state the registrant's name and to whom the refund check should be made payable. No refunds will be given for requests received after October 1, 1997.

IEEE and UFFC-S Enrollment

If you wish to join the IEEE when registering for the Symposium, you may register at the member rate and receive one year of free membership in the Ultrasonics, Ferroelectrics, and Frequency Control Society (UFFC-S).

If you are a current IEEE member and wish to become a first-time member of the UFFC-S, free membership is offered at the time of registration. You will receive your choice of the UFFC-S Transactions or the Journal of Solid-State Circuits, and all UFFC-S Newsletters published in 1998.

For your convenience, an IEEE and UFFC-S Membership Application form may be found in the center of the Advance Program. An IEEE/UFFC-S enrollment and information booth will be located in the exhibit area.

Message Desk

Messages may be left at the Symposium Registration Desk for attendees and guests by calling the Toronto Marriott Eaton Centre Hotel at 416-597-9200

Proceedings

The Symposium Proceedings will be available in early 1998. A soft-cover copy will be shipped to all paid registrants except students, retirees, guests and one day registrants. A hard-cover copy may be ordered for an additional \$35 at the time of registration.

The proceedings will include a CD-ROM version included with full conference registration or purchase of the Proceedings separately. This is experimental for 1997. In future years it is likely that the CD-ROM will be available separately.

Extra copies of the Symposium Proceedings may also be ordered at the registration desk.

Prices are:

Soft-Cover (w/CD-ROM) \$95

Hard-cover (w/CD-ROM) \$130

INVITED SPEAKERS AND TOPICS

MEDICAL ULTRASONICS

Jie Chen, Hewlett-Packard

"DC-biased electrostrictive materials and transducers for medical imaging"

Peter Eccardt, Siemens AG, Germany

"Micromachined transducers for ultrasound applications"

Katherine Ferrara, University of Virginia

"Simultaneous optical and acoustical observation of ultrasound contrast agents"

Kullervo Hynynen, Harvard Medical School

"Review of ultrasound therapy"

Fred Lizzi, Riverside Research Institute

"Ultrasonic scatterer property images of the eye and prostate"

Matt O'Donnell, University of Michigan

"Catheter arrays: Can intravascular ultrasound make a difference in managing coronary artery disease?"

NDE & INDUSTRIAL APPLICATIONS

Nesbitt Hagood, Dept. Of Aero- & Astronautics, MIT

"MIT program in smart composites"

Simon Haykin, McMaster University

"Adaptive signal detection"

Gordon Hayward, University of Strathelyde

"Air coupled NDE - constraints and solutions for industrial implementation"

Robert Gilmore, General Electric

"Ultrasonic imaging: inspecting industrial materials from titanium to silicon to diamond"

PHYSICAL ACOUSTICS

George Alers, National Institute of Standards & Technology

"Magnetostrictive ultrasonic transducers (MUTs): Their complexity is their utility"

Prof. Gerald Diebold, Brown University

"Chemical generation of sound waves: a 'giant' photoacoustic effect"

Fred Hickernell, Motorola, Incorporated

"From PGUE to SU to UFFC, 1953 to 1997; a historical perspective"

Kenneth S. Suslick, University of Illinois at

Urbana-Champaign

"Sonoluminescence and sonochemistry"

John Ullo, Schlumberger-Doll Research

"Recent developments in seismic exploration and reservoir characterization"

Henry Wohltjen, President, Microsensor Systems, Inc.

"Surfing the acoustic wave for fun and profit"

SURFACE ACOUSTIC WAVES

Ken-ya Hashimoto, Chiba University JAPAN

"Optimum leaky-SAW crystal cuts for minimized insertion loss devices"

Jin Kim, Motorola Inc.

"SAW device design requirements for cellular system applications"

For overseas mailing addresses, an additional \$55 per copy is required to defray the air and freight mailing costs.

Please note that only those papers which are presented at the Symposium will be included in the Proceedings.

MESSAGE FROM THE TECHNICAL CHAIR

On behalf of the entire Technical Program Committee I would like to invite you to attend the 1997 Ultrasonics Symposium. The number of submitted abstracts was the second highest in the history of the Symposium, with over 540 contributed papers reviewed by our committees. The Symposium will again have a truly international flavor drawing from submissions from 32 countries, with 43% of the submissions from America (U.S.A., Canada, Mexico and Central and South America), 32% from Europe, 24% from Asia and 1% from Australia.

This year's Symposium was the second to include electronic submission and the first to allow for submission through

the World Wide Web. This year over 450 submissions were contributed through email or the WWW, and we greatly appreciate this change on the part of the authors. Electronic submission has allowed us to provide a rapid response to the author, verifying our receipt of the abstract. We wish to thank Godwin Liu (University of Toronto) and Osama Haddadin (University of Michigan) for the construction and maintenance of the Web Site. The process will continue to be improved over the coming years, and your suggestions are welcome and will be incorporated.

The Toronto meeting should be exciting, and will provide the opportunity to visit a beautiful city. A total of 19 invited papers highlight our oral and poster sessions. One unique invited talk this year will be presented by Fred Hickernell and will describe the history of the Ultrasonics, Ferroelectrics and Frequency Control Society. I hope to see you in Toronto!

Katherine W. Ferrara
Technical Program Chair

1997 IEEE International Ultrasonics Symposium

SHORT COURSES

The following Short Course have been approved for Continuing Education Units (CEUs).

Course 1: SAW Filters for Public Communications: Practical Aspects

Instructor: Bob R. Potter, Vectron Technologies, Inc.

Time: Sunday Morning, October 5, 1997

8:00 a.m. - 12:00 p.m.

Course 2: Medical Ultrasonic Transducer Array Design and Applications

Instructor: Charles S. Desilets, Ultrex Corporation

Time: Sunday Morning, October 5, 1997

8:00 a.m. - 12:00 p.m.

Course 3: Second-Order Effects in SAW- and BAW-Devices

Instructor: Dr. Ali R. Baghai-Wadji

Time: Sunday Afternoon, October 5, 1997

1:00 p.m. - 5:00 p.m.

Course 4: Ultrasound Measurements in the Laboratory: Procedures and Pitfalls

Instructor: Mark Schafer, Sonic Technologies, Inc.

Time: Sunday Afternoon, October 5, 1997

1:00 p.m. - 5:00 p.m.

Course 5: Piezoelectric Materials: Properties, Measurement Techniques, and Recent Developments

Instructor: T. R. (Raj) Gururaja, Hewlett Packard Company, Andover, MA

Time: Sunday Evening, October 5, 1997

6:00 p.m. - 10:00 p.m.

Course 6: Image Formation in Diagnostic Ultrasound.

Instructor: J. Nelson Wright

Time: Sunday Evening, October 5, 1997

6:00 p.m. - 10:00 p.m.

SOCIAL PROGRAM

Evening Events

Sunday, October 5, 1997

Anyone for the Theater?

Toronto has become one of North America's centers for the performing arts. Guests interested in theater or opera are invited to take the opportunity and attend one of the many events. Further information will be posted near the registration area and can be accessed on the symposium web page.

Alternatively, if sports is your game, Toronto offers you basketball with the NBA Raptors, hockey with the Maple Leafs, Canadian football with the Argonauts, and baseball with the Toronto Blue Jays (should the team make it once again to the World Series). Tickets will be procured for anyone wishing to attend such events.

Monday, October 6, 1997

Social Reception

6:00 pm to 8:30 pm

Following the first day of technical sessions, take this opportunity to relax with old friends and make new acquaintances. Sample the hors d'oeuvres and enjoy a complimentary drink. For those who are extra thirsty, a cash bar will be available.

Tuesday, October 7, 1997

Ontario Science Centre

6:15 pm to 10:00 pm Price per person: US\$50

The major social event of the Symposium week is an evening at the Ontario Science Centre. Buses will leave the hotel starting at 6:00 pm for a 15-minute ride to the Centre. The evening will begin with hors d'oeuvres and an aperitif in the lobby. Guests will then be invited to view two short films in the adjoining Omnimax theater. This theater projects IMAX films onto a spherical screen that surrounds the spectators, and provides an ideal setting for showing the vast wilderness and spectacular sights from across Ontario, Canada and Alaska.

The buffet dinner will be hosted in the Centre's Valley Restaurant and will have a Canadian theme. Enjoy British Columbia salmon, Alberta beef and a multitude of Ontario vegetables, greens, fruits and deserts. More than the meat will be roasted.

Following dinner, you will be free to walk around many of the exhibits, including those on the Rain Forest, Environment, Transportation, and Science and Technology. Many of the exhibits are interactive permitting you to test your knowledge, your skill, and your strength. It's fun! Your admission will include two free alcoholic beverages.

A cash bar will be available.

GUEST PROGRAM

A varied program is being planned to entertain and inform visitors who register for the Symposium as guests. Registration permits you to enjoy our continental breakfast each morning as well as the Monday evening Social Reception. Detailed schedules for all activities including breakfast location, and exact times, prices, and departure points for tours will be available in the Symposium registration area, as well as at each breakfast.

Guest Tours

Monday, October 6, 1997

Full Day Tour of the Niagara Peninsula

This tour will begin with a visit to the mighty Niagara Falls, since no visit to Southern Ontario is complete without this stop. A Maid-of-the-Mist boat ride to the base of the Falls is included.

The bus will then follow the shore of the Niagara River to picturesque Niagara-on-the-Lake for lunch. The original capital of Upper Canada (now Ontario), and now home of the Shaw Festival, the town has maintained its New England style charm, with exclusive boutiques and fine dining.

The leisurely return trip along the Niagara wine route will

include a stop at the Henry of Pelham Winery. In recent years, Ontario wines have routinely won international wine competitions, of which wines from Henry of Pelham have won over fifty. The tour includes a detailed explanation of grape growing, wine making and wine appreciation, and ends with a tasting in the winery inn.

Price per person (including lunch): US\$40.00

Tuesday, October 7, 1997

Full Day Tour - Canadian Art

The focus of this tour will be the McMichael Art Gallery. Located in a rustic log and stone building nestled in a woodland setting with spectacular views of autumn foliage, it is home to one of the largest displays of 20th-century Canadian art. It includes works by Tom Thomson and the famous Group of Seven, as well as an extensive collection from First Nations, Inuit and contemporary artists. The Gallery Shop is well stocked with exquisite, moderately priced and unusual items.

Following lunch at the McMichael Gallery restaurant, you will visit the Black Creek Pioneer Village, an authentic mid-19th century village with over 40 restored homes and shops staffed by costumed interpreters.

Price per person: US\$35.00

Wednesday, October 8, 1997

Half Day Shopping Tour (Self Guided)

International currencies go a lot farther than you might think in Canada. Take this opportunity to explore the hundreds of shops and boutiques within easy walking distance of the hotel. Not only will you find the usual multinational chains, but also many uniquely Canadian shops. No charge.

EXHIBITS

The Exhibit Display will be in the Trinity Ballroom of the Toronto Marriott Eaton Centre Hotel. Companies will display their products, and representatives will be on hand to meet symposium attendees. The Exhibits will be in place from Monday morning until noon Wednesday.

At this time the following firms have signed up or indicated interest in Exhibiting at the 1997 meeting:

- ATS Laboratories, Inc
- Boston Piezo-Optics, Inc.
- Echo Cath, Inc.
- TRS Ceramics, Inc.
- Ferroperm, Inc.
- Valpey Fisher, Inc.
- W. L. Gore, Inc.
- P. R. Hoffman Materials, Inc.
- Intec, Inc.
- MATEC, Inc.
- Materials Systems, Inc.
- NASA Langley
- Panametrics
- Politec PI, Inc.
- Ritec, Inc.
- Sawyer

SYMPOSIUM ORGANIZING COMMITTEE

GENERAL CHAIR

Stuart Foster
University of Toronto

TECHNICAL CHAIR

Kathy Ferrara
University of Virginia

FINANCE

Tony Sinclair
University of Toronto

LOCAL ARRANGEMENTS

Peter Smith
McMaster University

PUBLICITY

Doron Kishoni
University of Denver

EXHIBITS

Jian-yu Lu
Mayo Clinic

SHORT COURSES

Peter N. Burns
University of Toronto

PROCEEDINGS

Susan Schneider
Marquette University

SYMPOSIUM MANAGEMENT

LRW Associates

GENERAL CHAIR — Stuart Foster

Francis Stuart Foster was born in Montreal, PQ, Canada, on July 29, 1951. He received the B.A.Sc. degree in Engineering Physics from the University of British Columbia, Vancouver, BC, Canada, in 1974, and M.Sc. and Ph.D. degrees in Medical Biophysics from the University of Toronto in 1977 and 1980, respectively.

From 1980 to 1990 he was a Senior Scientist with the Ontario Cancer Institute in Toronto, Canada. He is presently a Senior Scientist with the Sunnybrook Health Science Centre, Professor, and Associate Chairman of Medical Biophysics at the University of Toronto. Dr. Foster is the recipient of a Terry Fox Cancer Research Scientist Award from the National Cancer Institute of Canada and has been involved with the development of new ultrasonic imaging systems since 1975. He has made important contributions to the development systems for



Stuart Foster



Katherine Ferrara



Tony Sinclair



Peter Smith



Doron Kishoni



Jian-yu Lu



Peter Burns



Susan C. Schneider

the detection and evaluation of prostate, breast, and ocular cancers. His current research centres on the development of high frequency imaging systems, tissue characterization, two-dimensional array technology and intravascular imaging. In spite of his pathological aversion to writing, Dr. Foster has published over 100 papers in the field of medical ultrasound imaging, and has recently authored a book on high frequency imaging. He has twice won the Ultrasound in Medicine and Biology Prize. Dr. Foster was the 1995-96 Distinguished Lecturer for the Ultrasonics Ferroelectrics and Frequency Control Society. In 1997 he won the Thomas Eadie Medal for major contributions to Engineering and Applied Science in Canada from the Royal Society of Canada.

Dr. Foster is a former member of the IEEE Ultrasonics Ferroelectrics and Frequency Control Society Administrative committee and is on the editorial boards of *Ultrasonic Imaging* and *Ultrasound in Medicine and Biology*.

Stuart, his wife Diane, and children Brett and Danusha enjoy living in Toronto and periodically retreating to their cottage on Moore Lake in the Haliburton region of Ontario.

TECHNICAL CHAIR — Katherine Ferrara

Katherine Whittaker Ferrara (M'87) received the B.S. Degree in physical therapy in 1976 from the University of Pittsburgh, Pittsburgh, PA, the B.S. and M.S. in electrical engineering in 1982 and 1983, respectively, from the California State University, Sacramento, and the Ph.D. in electrical engineering and computer science in 1989 from the University of California, Davis.

From 1976 to 1980, she practiced physical therapy at Akron

Children's Hospital and the Home for Crippled Children, Pittsburgh, PA. From 1983 to 1988, she worked for Sound Imaging, Inc. Folsom, CA, and for General Electric Medical Systems, Rancho Cordova, CA, in the areas of magnetic resonance and ultrasound imaging. Since 1989, she has been an Associate Professor in the Dept. of Electrical Engineering at California State University, Sacramento. From 1993-1995, she was a principal member of the research staff at the Riverside Research Institute, New York, NY, and an Adjunct Associate Professor at Cornell University Medical School. She is currently an Associate Professor in the Department of Biomedical Engineering at the University of Virginia, Charlottesville. Her research interests are in the fields of biomedical signal and image processing and particularly in the use of ultrasound to map blood flow.

Dr. Ferrara is an Associate Editor of the IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control in the area of flow measurement techniques and applications. She is the chair of the technical program committee for the 1997 IEEE Ultrasonics Symposium.

FINANCE — Tony Sinclair

Tony Sinclair completed an undergraduate engineering degree at the University of Toronto, and MSE & PhD degrees at The University of Michigan, Ann Arbor. He is currently a professor in the Department of Mechanical and Industrial Engineering, University of Toronto.

Major research interests are in the area of ultrasonic non-destructive evaluation of material properties. Projects have been conducted in the areas of acoustic microscopy, nonlinear

ultrasonics, NDE of adhesive joints, characterization of coatings, and characterization of non-isotropic materials. Practical applications of this work have been concentrated in the nuclear and aerospace industries.

In the 1997/98 academic year, Tony Sinclair will be working in George Alers' group in NIST at Boulder, CO. When not working, he will be spending his time skiing, mountain biking, and trying to understand the American political system.

LOCAL ARRANGEMENTS — Peter Smith

Peter Smith was born in Belo Horizonte, Brazil. His family moved to Sao Paulo and then to Rio de Janeiro, where he miss-spent his youth as a self-avowed "beach bum." Realizing that there was limited future in that line of work, he left Brazil at the age of eighteen and spent a year traveling before deciding to cool his heels and pursue his studies at McMaster University in Canada. In the summer prior to obtaining a B.Eng.Mgt. degree in Computer Engineering in 1983, he worked on surface acoustic wave devices with Dr. Colin Campbell, and decided to continue his studies in that area. In spite of spending much of the next few years sailing his Hobie 18 catamaran on Lake Ontario, he received the M.Eng. and the Ph.D. degrees in 1985 and 1988, respectively. He joined the Department of Electrical and Computer Engineering at McMaster in 1987 as an Assistant Professor and, after working a couple of years on heterojunction semiconductors, continued his research on SAW devices and circuits. He is now an Associate Professor and Director of the Engineering 1 programme at McMaster University. He has also been Chairman of Student Activities for IEEE Canada for the past three years. He has co-authored over 40 technical publications, and is a past recipient of the Ross Medal from the Engineering Institute of Canada.

Peter lives in Hamilton, Ontario, with his wife Kerstin, and their three children Thomas (7), Mathew (6) and Caroline (5). They enjoy camping, swimming and bicycling, and plan to resume sailing as soon as the children are old enough to join in the fun.

PUBLICITY — Doron Kishoni

Dr. Kishoni received his Ph.D. from Cornell University, Ithaca, NY, where he conducted research in ultrasonic NDE. Prior to that he received his Practical Engineering degree from Ort Techniqum Givataim; a B.S. from the Technion, Haifa; and M.S. from Tel-Aviv University, where he worked on fatigue and residual stress measurements.

Some of his professional career include founding and managing an electronics company; serving as an officer in the military; and having an extensive industrial experience in diverse engineering fields. As a recipient of National Research Council awards three years consecutively he worked as a Resident Research Associate at NASA Langley, Virginia, where he conducted research in advanced ultrasonic NDE and signal processing, and received NASA achievement awards. Since then, he continued to work on developing advanced methods in NDE and signal processing through NASA grants and contracts as a Senior Research Scientist and a Research Professor in the College of William and Mary. Since '92 he

was also teaching as an Adjunct Professor. He also served as a consultant for industrial companies.

Dr. Kishoni is holding ASNT level III certifications in several methods (UT, MT, PT, VT, AET). He has been involved in numerous activities serving on the technical and the organizing committee of IEEE Ultrasonics symposiums since '85: as a member of the Technical Program Committee, Finance Chair/Treasurer, and Publicity Chair. He has been serving as a treasurer and a secretary in the Hampton Reads section of IEEE; has been a member of the Peninsula Engineers Council representing the IEEE, and is serving as the elected treasurer of the Colorado section of ASNT.

Prof. Kishoni is currently serving as a Senior Research Scientist at the University of Denver Research Institute, along with an appointment in the Engineering Department of the university. He is also complementing his education in the executive MBA program in the University of Denver. Being in Denver area for less than a year, Dr. Doron Kishoni, along with his wife Sara and their three children, are currently trying to adjust to the pleasant Colorado weather and beautiful view of the mountains.

EXHIBITS — Jian-yu Lu

Jian-yu Lu (M'88) was born in Fuzhou, Fujian Province, People's Republic of China. He received the B.S. degree in electrical engineering in February 1982 from Fudan University, Shanghai, China; the M.S. degree in 1985 from Tongji University, Shanghai, China; and the Ph.D. degree in 1988 from Southeast University, Nanjing, China.

Dr. Lu is currently a Professor in the Department of Bioengineering at The University of Toledo, Toledo, Ohio. Before joined The University of Toledo in 1997, he was an Associate Professor of Biophysics at the Mayo Medical School and an Associate Consultant at the Department of Physiology and Biophysics, Mayo Clinic/Foundation, Rochester, MN. From March 1990 to December 1991, he was a Research Associate at the Department of Physiology and Biophysics, and from December 1988 to February 1990, he was a postdoctoral Research Fellow there. Prior to that, he was a faculty member of the Department of Biomedical Engineering, Southeast University, Nanjing, China, and worked with Prof. Yu Wei. His research interests are in acoustic imaging and tissue characterization, medical ultrasonic transducers, and ultrasonic beam forming and propagation.

Dr. Lu is a recipient of the Outstanding Paper Award for two papers published in the 1992 IEEE Transactions on the UFFC, the recipient of the Edward C. Kendall Award from the Mayo Alumni Association, Mayo Foundation in 1992. He also received both the FIRST Award from the NIH and the Biomedical Engineering Research Grant Award from the Whitaker Foundation in 1991. He is a member of the IEEE UFFC Society, the American Institute of Ultrasound in Medicine, and Sigma Xi.

SHORT COURSES — Peter N Burns

Dr Peter Burns is Professor of Medical Biophysics and Radiology at the University of Toronto and Senior Scientist at

Sunnybrook Health Science Centre, Toronto. He was born and educated in the United Kingdom. After taking first class honours in Theoretical Physics, he studied Philosophy of Science before obtaining his PhD in Radiodiagnosis at the University of Bristol. He moved to the United States in 1984, becoming Assistant Professor of Radiology at Yale University. He then spent four years as Associate Professor of Diagnostic Radiology at Thomas Jefferson University in Philadelphia before moving to Canada in 1991.

His main interest is in blood flow detection and instrumentation for Doppler ultrasound, where he was part of the early efforts to detect blood flow in tumours and other small vessel systems. He has worked on colour Doppler instrumentation, on haemodynamic measurement with Doppler, and most recently with ultrasound contrast agents and the development of harmonic imaging. He is author of two books and more than 100 scientific publications, serves on the editorial boards of several scientific journals, is a fellow of the American Institute of Ultrasound in Medicine and chair of its Doppler standards subcommittee.

PROCEEDINGS — Susan C. Schneider

Susan Schneider received a B.S. in physics and mathematics from the University of Wisconsin-Stevens Point in 1972, and a Ph.D. in physics from the University of Wisconsin - Milwaukee in 1981. In 1981, she joined the Department of Electrical and Computer Engineering at Marquette University and was promoted to Associate Professor in 1988. Her research interests include theoretical studies of SAW attenuation and velocity changes produced by electron-phonon, magneto-elastics and acousto-elastic interactions in conducting and superconducting thin films; experimental studies to characterize charge transport mechanisms across the interface between dissimilar materials. In addition to membership in the IEEE UFFC-S, Dr. Schneider is also a member of the American Physical Society, Eta Kappa Nu, and Sigma Xi. Dr. Schneider has also served as the co-director of Marquette University's Young Engineering and Science Scholars program, a summer science camp program for middle school students, since 1993.

1997 IEEE International Frequency Control Symposium and Tutorials

The 1997 IEEE International Frequency Control Symposium was held from May 28 to May 30, 1997 at the Hilton Hotel in Disney World Village, Orlando, Florida, USA, followed by the Frequency Control Tutorials on May 31, 1997. This symposium is the leading international conference on frequency control and time dissemination technology, including BAW, SAW, and microwave resonators and oscillators, atomic frequency standards, noise processes and aging, sensors, and frequency control materials. The symposium was very successful this year with 431 registered attendees (the largest attendance since 1985), and 49 guests. Approximately 30% of the attendance came from 22 countries outside of the US. 120 people attended the ten tutorials on Saturday. Approximately 168 papers (94 oral and 74 poster paper) were presented at the symposium which included seven invited papers. About 50% percent of the papers were presented by non-US authors. The Plenary speaker was Steven H. Strogatz of Cornell University who spoke on "Spontaneous Synchronization in Nature: From Fireflies to Josephson Arrays". A major emphasis was placed on sensors this year and 32 papers were presented, along with an evening panel discussion. Fourteen companies had exhibits at the symposium. The Frequency Control Symposium has had a strong program to provide travel support for students and non-US participants, and this year was no exception. A total of ten students and fifteen other attendees received support.

For social functions there was a Welcoming Reception on Wednesday night, and on Thursday we had a very enjoyable excursion to Sea World. Also each morning there was a complimentary continental breakfast for the day's speakers to allow them to get acquainted with the session chairs and other

speakers. For registered guests there was a continental breakfast each morning, as well as admission to the Welcoming Reception.

Special thanks go out to all the members of the Organizing Committee, the Technical Program Committee, Mike Mirarchi and Barbara McGivney of Synergistic Management, and Wendy Ortega of the National Institute of Standards and Technology for all the help in making this very successful symposium possible.

ORGANIZING COMMITTEE:

General Chair: Thomas E. Parker, NIST	Technical Program Chair: Gary R. Johnson, Sawyer Research Products
Tutorial Chair: Lute Maleki, JPL	Local Arrangements Chair: Donald C. Malocha, Univ. of Central Florida
Finance Chair/ Group 1 Vice Chair Raymond L. Filler, U.S. Army, CECOM	Awards Chair: Roger Ward, Quartzdyne, Inc.
Editorial Chair John R. Vig, U.S. Army, CECOM	Publicity Chair/ Group 3 Vice Chair: John Prestage, JPL
Group 2 Vice Chair: Michael M. Driscoll, Northrop-Grumman	Group 4 Vice Chair: Ryszard M. Lec, Univ. of Maine

Tom Parker
General Chair

1997 Frequency Control Symposium Awards

The 1997 Frequency Control awards were presented on May 28th during the plenary session of the IEEE Frequency Control Symposium. The recipients were:

W. G. Cady Award – The Cady Award was presented to Michael M. Driscoll, Northrop-Grumman Corporation, “for outstanding contributions to low noise signal generator technology.” The award was presented by Tom Parker, NIST.

I. I. Rabi Award – The Rabi Award was presented to Harry E. Peters, STSC, Inc., and Nikolai A. Demidov, Institute of Electronic Measurement “KVARZ,” Russia, “for the development and manufacture of the hydrogen maser for precision

timekeeping applications.” The award was presented by Joe White, NRL.

C. B. Sawyer Memorial Award – The Sawyer Award was presented to Peter G. Sulzer, “for the evolution of a curiosity about quartz resonators into the low noise, low drift rate Sulzer oscillator design that was the foundation for Sulzer Laboratories, Inc.” The award was presented by Jerry Norton, APL.

In addition to the three awards, UFFC-S President Dan Malocha presented the IEEE Fellow certificate to the recently selected IEEE Fellow Robert Smythe.



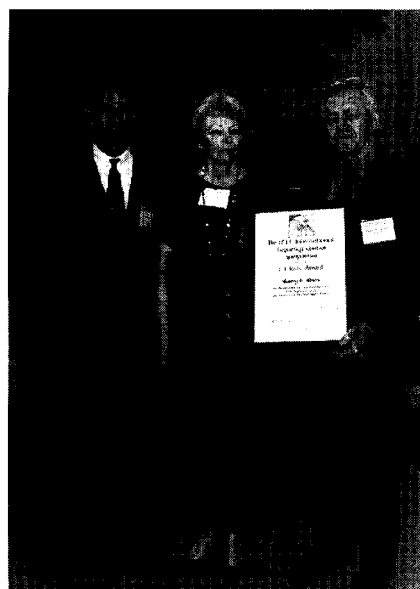
Mike Driscoll holding the Cady Award (which includes a large quartz crystal ball) after receiving it from Tom Parker.



Harry Peters receiving the Rabi Award from Joe White.



Nikolai Demidov receiving the Rabi Award from Joe White.



Harry Peters with his proud family.



Mr. and Mrs. Mike Driscoll showing off the Cady Award.



"Guess what we know!" Bob Smythe trying to enjoy his IEEE Fellow certificate with Don Malocha.



"I'm sure glad you've stopped tickling me Don!"



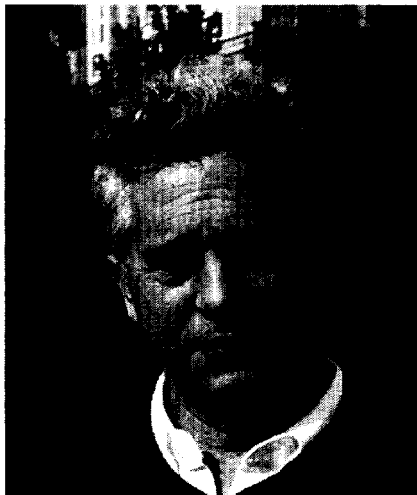
"Attention!" Sawyer Award presenter Jerry Norton with Gary Johnson, President of Sawyer Research Products. The award recipient, Peter G. Sulzer, was unable to be present for the presentation.



And the winners are: Bob Smythe, Jerry Norton (standing in for Pete Sulzer), Nikolai Demidov, Mike Driscoll, and Harry Peters.

In Memoriam Yakovkin, Igor Borisovitch (May 26, 1940 - June 6, 1997)

Igor B. Yakovkin was born in 1940 in Leningrad, Russia. He died on June 6, 1997 at the age of 57 years after an extensive operation for a brain tumor in Klinikum Meinigen mbH (Germany). He graduated from Novosibirsk Electrotechnical Institute in 1962. He received his Ph.D. degree in 1968. It dealt with the peculiarities of the surface acoustic wave propagation in layered structures. In 1980 he became Doctor of Sciences with the dissertation on physical principles of operation of acoustoelectronics and acoustooptics devices.



From 1970-1985 he lectured at the Novosibirsk State University on the acoustics of crystals. Since 1975 he has been the Head of the Surface Wave Laboratory of the Institute of Semiconductor Physics and since 1989 he has run the Department of Acoustoelectronics and Acoustooptics (AE&AO). He had published over 140 papers, including 18 Russian patents, two manuals for students and three monographs: "Light Diffraction of Surface Acoustic Waves," "Design of PSK Matched Filters," and "Acoustoelectronic Method for the Investigation of the Semiconductor Surface". During his last years Dr. Yakovkin was involved in investigations on excitation, propagation, and interaction of electromagnetic, acoustic and plasma waves in solids and layered structures. He had taken an active part in organizing the International Symposium on Surface Wave in Solid and Layered Structures (ISSWAS) in 86, 89 and 94.

A great deal of fundamental research aimed at studying surface acoustic waves (SAW) propagation and interaction with electrode groups in layer structures has been made at the AE&AO Department of Dr. Yakovkin and has resulted in emergence of a new type of acoustoelectronic elements for data processing. These works were practically realized in elaboration of calculation and engineering principles for fabricating frequency selection devices such as bandpass filters (BF), matched filters

(MF) of phase-manipulated signals (PMS) and multitap delay lines (MDL) on surface acoustic waves. The work of the Department has been supported by the Russian Fund for Basic Investigations, International Science Foundation, Ministry of Science of Russian Federation, International Research and Development grants from USA and Germany companies and institutions, etc.

Dr. Yakovkin was awarded the USSR State Prize for progress made in the field of acoustooptics, and in 1993 he was awarded the Russia State Prize in the field of acous-

toelectronics for creating the scientific basis for developing and introducing SAW devices into radio electronics in the FSU. He was senior member of the IEEE and the Ultrasonics, Ferroelectrics, and Frequency Control Society.

Dr. I. Yakovkin was a life-loving and enthusiastic person. He was highly skilled in different spheres of mankind. His personal charm, gentleness, openness, and true human nature brought him a lot of friends around the whole world. He was enjoyed by his friends and he loved to invite them to his summer cottage and sauna built up by his own arms. He loved music, painting, and to travel. He loved very much his family - wife Luba, daughter Marina, and grandson Ilja.

Many times, his insightful works brought new perspectives in the fast developing field of SAW technology and science. He also raised a good scientific school of young scientists known widely in the world. Solid state acoustics has lost an outstanding scientist.

Dr. Andrei Tsarev
Acting Head of AE&AO Department
Institute of Semiconductor Physics
Novosibirsk, Russia

IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society Administrative Committee

IEEE HEADQUARTERS

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

SOCIETY OFFICERS

President	D. C. Malocha	<i>University of Central Florida, Orlando</i>
Vice-President	J. R. Vig	<i>U. S. Army Communications-Electronics Command, Fort Monmouth</i>
Secretary-Treasurer	G. K. Montress	<i>Raytheon Company, Research Division</i>

ELECTED COMMITTEE MEMBERS

1995 - 1997	G. A. Alers	<i>National Institute of Standards & Technology</i>
1995 - 1997	J. Brown	<i>JB Consultants</i>
1995 - 1997	N. Chubachi	<i>Tohoku Gakuin University</i>
1995 - 1997	J. R. Vig	<i>U. S. Army Communications-Electronics Command, Fort Monmouth</i>
1996 - 1998	K. W. Ferrara	<i>University of Virginia, Charlottesville</i>
1996 - 1998	D. A. Hutchins	<i>University of Warwick</i>
1996 - 1998	J. G. Smits	<i>Boston University</i>
1996 - 1998	P. V. Wright	<i>Thomson Microsonics</i>
1997 - 1999	W. D. Hunt	<i>Georgia Institute of Technology</i>
1997 - 1999	D. R. Pape	<i>Photonic Systems Incorporated</i>
1997 - 1999	B. R. Potter	<i>Vectron Technologies Incorporated</i>
1997 - 1999	K. Yamanouchi	<i>Tohoku University</i>

EX-OFFICIO COMMITTEE MEMBERS

Awards	R. H. Tancrell	<i>Tancrell Associates</i>
Chapters-Membership	E. S. Furgason	<i>Purdue University</i>
Fellows	R. M. White	<i>University of California, Berkeley</i>
Ferroelectrics	L. E. Cross	<i>The Pennsylvania State University</i>
Finance	H. van de Vaart	<i>VDV Associates</i>
Frequency Control	T. E. Parker	<i>National Institute of Standards & Technology</i>
Long Range Planning	H. L. Salvo, Jr.	<i>Northrup Grumman Corp., Electronic Sensors & Systems Division</i>
Newsletter	F. S. Hickernell	<i>Motorola, Inc., SSTG</i>
Nominations	B. R. Tittmann	<i>The Pennsylvania State University</i>
Standards	A. Ballato	<i>U. S. Army Communications-Electronics Command, Fort Monmouth</i>
Transactions	W. D. O'Brien, Jr.	<i>University of Illinois, Urbana</i>
Ultrasonics	J. F. Greenleaf	<i>Mayo Clinic</i>
Past President (1996 - 1998)	H. L. Salvo, Jr.	<i>Northrup Grumman Corp., Electronic Sensors & Systems Division</i>

*Non-Voting Member

President's Message

This is my last president's message; two years goes by quite fast when your having fun!! There have been many changes and new initiatives over the past two years in our society. As any good president I should step forward and take all the credit. However, the real credit rests with all the volunteers who make the society work (and let me look good). For my last article I thought I would highlight some of the interesting changes in the society.

Starting in 1998 we will be operating under a new UFFC constitution and bylaws. The main changes are that we will now have a president-elect who will serve two years and then automatically become president for the following two years. This will ensure continuity and provide training for the incoming president. There will also be four other vice-presidents representing each of our three technical areas and a vice-president for publications. In addition, the number of voting appointed chairs has been reduced to give the voting elected members a greater voice. Constitutional and bylaws changes take a great deal of time (approximately four years) and are finally done thanks to Jim Greenleaf's persistence. I think he has an appreciation of what Jefferson must have felt like trying to please the colonial assembly.

We have the UFFC WEB site on the Internet. There have been several significant contributors including Prof. Emad Ebbini, graduate student Osamu Haddadin, and our current vice-president John Vig. Due to their efforts we have a WEB site which provides information on our technical areas, symposiums, links to other sites and more. In addition, we have a new section on sensors and actuators established and maintained by Ryszard Lec. The society is in progress of purchasing its own Internet server for enhancing and maintaining the site. John Vig is now our WEB Master and has done an outstanding job in the past two years in organizing and promoting the site. Anyone who wishes to contribute is encouraged to do so and contact John at j.vig@ieee.org. By the way, you can contact any UFFC officer or AdCom member by e-mail by using the (nearly) universal format within IEEE: to contact a person via e-mail put the following information between the characters which is first initial.last name@ieee.org.

In January we began printing and layout of the UFFC Transactions with the American Dairy Science Associa-

tion (ADSA). I believe this has been transparent to you except for a slight upgrade in paper quality and image quality. If all goes well, this will save the society money and keep an enhanced quality publication. This initiative has been supported primarily by Bill O'Brien, UFFC Transactions Editor, and Jan Brown, AdHoc Publications Chair. In addition, the society, via Jan, is starting to look at CD ROM for conferences, past publications and other appropriate society material.

AdCom as a whole has been promoting and encouraging non- North American venues for symposiums to enhance and enrich the international exchanges of technical information. You will see that we have future symposia scheduled for Japan, Switzerland, Germany, France, and Puerto Rico. There is also the added benefits of traveling to differing outstanding sites to meet the local people, experience the culture, and, of course, sightseeing.

For several years it has been discussed of the combining of the EIA Piezoelectric Devices Conference held in August in Kansas City and the IEEE Frequency Control Symposium. This will merge the strengths of both conferences and provide a single forum for engineers and scientists to attend each year. The symposium name, format and May-June time will remain the same but there will be renewed emphasis on manufacturing and an expanded exhibition from industry. A memorandum of understanding has been signed and further negotiations on details continue. It appears the first joint meeting will be in the year 2000. Much thanks to Gary Johnson who has volunteered to continue to lead the negotiations for this merger.

These are but a few of the highlights and there are many more continuing activities. I would like to thank all of the AdCom Committee members, the symposium committees and all the volunteers which made my tenure as president both productive and enjoyable. We are the smallest IEEE society but I think the best! Someone once asked what were my thoughts about being the UFFC society president. To paraphrase a Mel Brooks' quote: " No matter how big or small the kingdom, its good to be king!"

Donald C. Malocha
UFFC Society President

ADCOM BRIEFS

The Administrative Committee (AdCom) meeting of the *Ultrasonics, Ferroelectrics, and Frequency Control Society (UFFC-S)* was called to order at 9:02 A.M., May 31st, 1997, by D. C. Malocha, *UFFC-S* AdCom President, at the Hilton Hotel - Walt Disney World Village, Lake Buena Vista, Florida. Introductions of attending members were conducted.

D. C. Malocha, *UFFC-S* AdCom President, welcomed the four recently elected *UFFC-S* AdCom members, whose terms began on January 1st, 1997: W. D. Hunt, D. R. Pape, B. R. Potter, and K. Yamanouchi. All four newly elected *UFFC-S* AdCom members were able to attend the *UFFC-S* AdCom meeting.

G. K. Montress, *UFFC-S* Secretary/Treasurer, moved to approve the minutes of the November 3rd, 1996 *UFFC-S* AdCom meeting. The motion was seconded by H. van de Vaart. The motion passed.

G. K. Montress, *UFFC-S* Secretary/Treasurer, reported that no e-mail/FAX ballots had been conducted during the time period from 4 November 1996 to 30 May 1997.

D. C. Malocha, *UFFC-S* AdCom President, reported on the most recent IEEE TAB meeting which he attended. Electronic publishing and the various media types are still active areas of investigation within the IEEE. It is still not at all clear exactly how the IEEE will respond to the drastic changes now sweeping the publishing business.

A committee had been appointed by the *UFFC-S* AdCom President to study whether an Administrative Assistant position would be beneficial to the *UFFC-S*. The committee reported its finding that the position should remain unfilled for the time being, since there was insufficient justification supporting the need for an Administrative Assistant at this time.

F. S. Hickernell reported that he is still investigating arrangements for a *UFFC-S* Membership Directory, which had been approved at the November 7th, 1995 *UFFC-S* AdCom meeting. The actual publication of the membership directory has been placed on hold pending an examination of whether it might be easier and more suitable to simply set-up a membership directory as part of the *UFFC-S*'s WebSite HomePage.

F. S. Hickernell, *UFFC-S* Newsletter Editor-in-Chief, presented an oral report. The deadline for submission of material for the September 1997 (Fall) issue of the *UFFC-S* Newsletter is August 8th, 1997. This earlier than usual deadline is due to the fact that the Ultrasonics Symposium is scheduled for 5th - 8th October 1997, and the *UFFC-S* Newsletter will contain information describing the Ultrasonics Symposium. This information should be in the hands of *UFFC-S* members prior to the actual dates of the symposium, hence the early deadline.

W. D. O'Brien, Jr., *UFFC-S* Transactions Editor-in-Chief, presented oral and written reports. Five new Associate Editors for the *UFFC-S* Transactions have been appointed recently. The newly established publishing arrangement with the American Dairy Science Association (ADSA) is working well. The *UFFC-S* Transactions is getting closer to the point where changing to twelve monthly issues per year will have

to be discussed. However, there would probably need to be somewhere between 1500 to 1800 pages published yearly on a steady, continuing basis to justify this decision.

W. D. O'Brien, Jr., moved to approve an increase of 272 pages in the *UFFC-S* Transactions's 1997 page budget, from 1128 to 1400 pages. The motion was seconded by J. Brown. The motion passed.

W. D. O'Brien, Jr., moved to approve a 1998 *UFFC-S* Transactions page budget of 1550 pages. The motion was seconded by J. Brown. The motion passed.

W. D. O'Brien, Jr., moderated a discussion of placing the *UFFC-S* Transactions "on-line". W. D. O'Brien, Jr., moved to approve establishing on-line access to the *UFFC-S* Transactions for a period of two years, commencing with the January 1998 issue. The motion was seconded by J. Brown. The motion passed.

J. Brown, *UFFC-S* Publications Board Chair, moved that the *UFFC-S* Publications Board should develop a business plan for making *UFFC-S* publications (conference proceedings and Transactions, etc.) available on CD-ROM. The motion was seconded by W. D. Hunt. The motion passed.

H. van de Vaart, *UFFC-S* Finance & Operations Committee Chair, presented oral and written reports. The *UFFC-S* has a surplus of approximately \$515k at this time. H. van de Vaart presented the 1998 *UFFC-S* operating budget. H. van de Vaart moved to approve the 1998 *UFFC-S* budget as presented. The motion was seconded by J. Brown. The motion passed.

T. E. Parker, *UFFC-S* Frequency Control Standing Committee Chair, presented oral and written reports. The Electronic Industries Association (EIA) has approached the *UFFC-S* to discuss combining their annual conference (Piezoelectric Devices Conference & Exhibition) with the *UFFC-S*'s annual Frequency Control Symposium. A memorandum of understanding has been prepared covering the arrangement.

T. E. Parker moved to approve combining the EIA's Piezoelectric Devices Conference & Exhibition with the *UFFC-S*'s Frequency Control Symposium. The motion was seconded by J. Brown. The motion passed. The *UFFC-S*'s Frequency Control Standing Committee was empowered to handle details related to the consolidation.

T. E. Parker moved to approve the 2000 IEEE International Frequency Control Symposium in either Washington, DC, or Kansas City, Kansas. D. B. Sullivan will serve as General Chair for the symposium. The motion was seconded by J. Brown. The motion passed.

J. F. Greenleaf, *UFFC-S* Ultrasonics Standing Committee Chair, presented an oral report. Nashville, Tennessee is under consideration as the venue for the 2001 IEEE International Ultrasonics Symposium. The dates for the 1998 IEEE International Ultrasonics Symposium are the 5th - 8th October 1998, in Sendai, Japan.

F. S. Foster, General Program Chair, reported that arrangements for the 1997 IEEE International Ultrasonics Symposium (Toronto, Ontario, Canada) are still proceeding nicely. The Hotel will be the Marriott - Eaton Centre. K. W. Ferrara

is serving as Technical Program Chair. The dates for the conference are 5th - 8th October 1997.

R. H. Tancrell, *UFFC-S Awards Committee Chair*, presented oral and written reports. W. D. O'Brien, Jr., will be the *UFFC-S Distinguished Lecturer* for 1997-1998. The lecture is entitled: "Modern Diagnostic Ultrasound Imaging Assessing the Risks." The sub-committee for Major IEEE Awards has submitted the nomination paperwork for the IEEE's Morris N. Liebman and Cleo Brunetti Awards. Nominations for the IEEE's Edison Medal and Medal for Engineering Excellence Awards are in preparation, and should be completed and submitted by the 1st July 1997 deadline. The Major Awards sub-committee seeks to nominate deserving *UFFC-S* members for the IEEE's major awards. R. H. Tancrell reported that he is working to establish another sub-committee to stimulate the nomination of deserving *UFFC-S* for IEEE Fellow Grade recognition.

E. S. Furgason, *UFFC-S Chapter/Membership Services Committee Chair*, presented oral and written reports. The *UFFC-S* has experienced a net gain of 6 members on a base of 2131 members for the three years 1994 - 1996. During the same period, the total membership for all IEEE societies has decreased by 1248 against a base of 220,479 total society members. The *UFFC-S* continues to attract new members through its Membership Outreach Program. Finally, the IEEE is considering a proposal to reduce student membership fees by 30% in the hope of enticing more undergraduates to join.

R. M. White, *UFFC-S Fellows Committee Chair*, was unable to attend the *UFFC-S AdCom* meeting. The following four *UFFC-S* members were elected to the IEEE's Grade of

Fellow, effective 1st January 1997: J. H. Henaff, K. J. Langenberg, J. G. Smits, and R. C. Smythe.

B. R. Tittmann *UFFC-S Nominations Committee Chair*, presented oral and written reports. The election for new *UFFC-S AdCom* members will be held during the Summer (1997), with their three year terms in office starting on 1st January 1998. The slate of nominees from IEEE Regions 1 - 7 is: N. Batra, R. Gururaja, D. Kishoni, A. H. Meitzler, A. Safari, and K. Uchino. Nominees from IEEE Regions 8 - 10 are: D. B. Hauden and W. W. Wolny. 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. B. R. Tittmann introduced a motion to approve the slate of candidates as presented. The motion was seconded by F. S. Hickernell. The motion was approved.

The Bylaw and Constitution revisions have been approved by the *UFFC-S's AdCom*. The revised *UFFC-S Constitution* is still progressing through the IEEE's approval process. It should receive final approval by year's end (1997). The revised Bylaws and Constitution should be in place effective 1st January 1998.

A motion was introduced that the next *UFFC-S AdCom* meeting be held at 9:00 A.M., on October 5th, 1997, in conjunction with the 1997 IEEE International Ultrasonics Symposium, in Toronto, Ontario, Canada. The motion was approved.

The *UFFC-S AdCom* meeting adjourned at 5:09 P.M.

Gary K. Montress
UFFC-S AdCom Secretary/Treasurer, 1997

AdCom Reflections



The Sendai Symposium Group, Van de Vaarts, Bernie Tittman, Chubachis and Yamanouchis



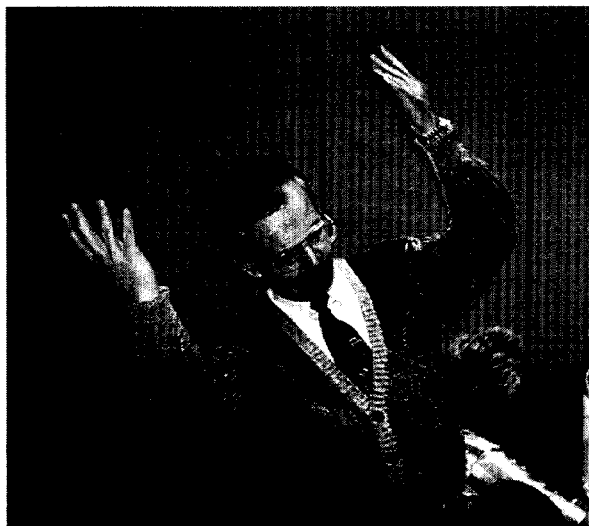
Jim Greenleaf, Technical Program Co-Chair and Noriyoshi Chubachi General Co-Chair, 1998 Ultrasonics Symposium



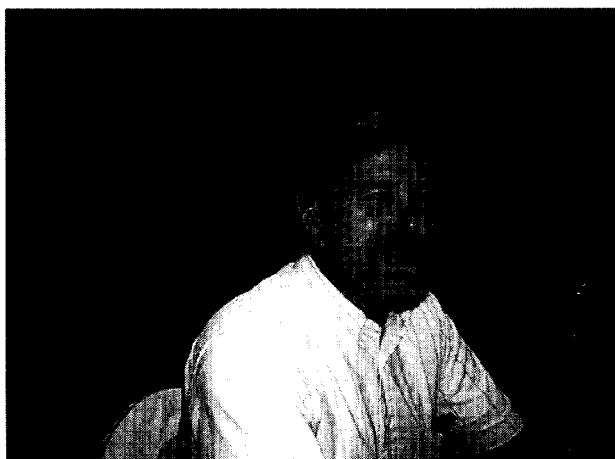
Don't worry Herman, Bernie and Kazuhiko will have a financially successful symposium in Sendai



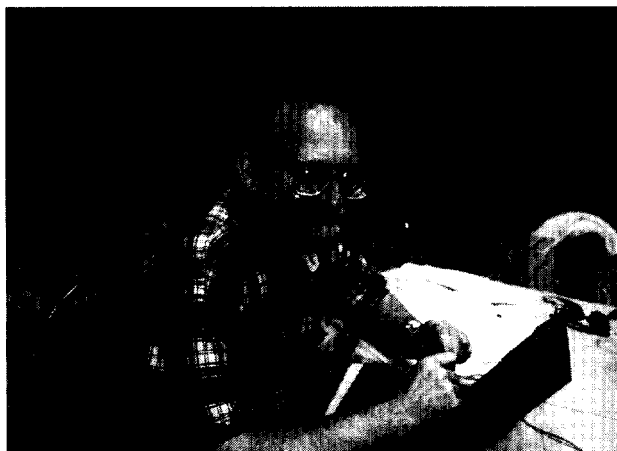
Presidents Past and Present - Greenleaf, Salvo, and Malocha



Vice President Vig signals a touchdown or surrenders?



Membership is up - Eric Furgason



On the spot AdCom minutes, Gary Montress - Secretary/Treasurer



Why did everyone leave? - Bob Potter



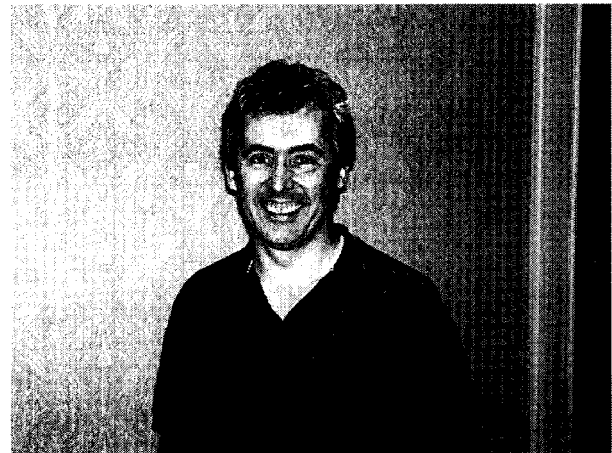
I'm wondering that too - George Alers



**The semi-annual Raytheon reunion, Tancrell,
Parker and Montress**



**Finalist in the smiles contest. Jeff Schoenwald -
A successful Ultrasonics Symposium**



**Finalist in the smiles contest. Gary Johnson - A successful
Frequency Control Symposium**

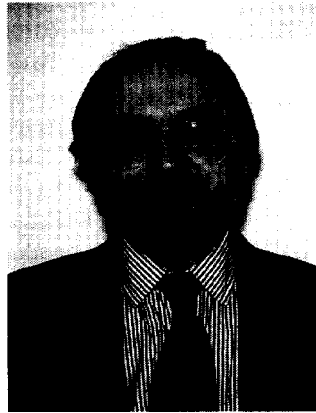


**Winners of the mixed doubles smiles contest.
Evelyn Zernetzki and Dennis Pape**

Introducing Ryszard Lec - Sensors and Actuators Web Site Coordinator

Ryszard M. Lec received his M.S. from the Warsaw Technical University in electronic instrumentation in 1969 and his Ph.D. in technical science from the Military Technical Academy in Warsaw, Poland, in 1978. His Ph.D. thesis was on the dielectric, piezoelectric, acoustic and acousto-optic properties of Lithium Iodate crystals. Since then his interest has been in the areas of material science, sensors, ultrasonic instrumentation and industrial applications.

From 1969 to 1978 he worked at the Military Technical Academy in Warsaw, initially as a research fellow, and then, from 1973 to 1978 as the Head of the Acousto-Optic Laboratory. His work was focused on the development of solid state acousto-optic modulators, Q-switches and the technology of wide-band high-frequency transducers. From 1979 to 1986 he worked at the Institute of Fundamental Technological Research of the Polish Academy of Sciences in Warsaw where he was Head of the Ultrasonic Spectroscopy Laboratory from 1981 to 1986. His interest was in the development of a variety of ultrasonic measurement systems and instrumentation for the characterization of solid and liquid media. Since 1986 he has been with the Electrical Engineering Department (ECE) at the University of Maine (UM), where first he was Visiting Professor (1986-92) and currently is Research Professor of Electrical Engineering. Here his focus has been on the development of bulk acoustic wave (BAW) and surface acoustic waves (SAW) sensors for chemical, biochemical and physical measurands. Examples include: BAW antigen-antibody sensors, a particle size distribution BAW sensor for colloidal systems, SAW gas sensors and recently sensors for automotive applications such as en-



gine oil quality sensors and non-contact torque sensors. He is strongly interested in industrial applications of piezoelectric sensors and since 1992 he has been the Technical Leader of the Industrial Process Control Sensor System (IPCoSS) Program in the College of Engineering at the UM. Currently his research involves the utilization of artificial intelligence for the development of smart sensors.

Dr. Lec has also been active in the area of engineering education for more than 15 years. His interest has been in the integration of research into engineering curricula

and in demonstrating that research and teaching complement themselves in a synergetic manner. Recently, he developed novel undergraduate and graduate programs in the BAW and SAW piezoelectric sensors in the ECE Department. In 1993 he was formally recognized as a successful innovator in science, mathematics and engineering education by the National Science Foundation. He has received over thirty research and science education grants from the National Science Foundation, Department of Energy, Polish Academy of Sciences, DuPont, IBM, BIODÉ Inc., and other government and private institutions. He has presented many scientific papers both in the US and abroad and has authored and co-authored over 50 publications and one book and has been awarded two patents. He is a reviewer for several scientific journals.

He enjoys classical music with his wife, writing short stories for his two children, who are eight and six years old, skiing, both cross-country and downhill and riding bicycles with the whole family in rural Maine.

Chapter Activities

German Chapter

Members of the German Chapter have been active in sponsoring conferences and workshops. There have been three such activities since April of this year.

- (1) Commercial Radio Sensor and Communication Techniques (Joint meeting of the German MTT/AP and the German UFFC Chapter during this year's MIOP-Conference), Sindelfingen, Germany, 21 April 1997 (responsible: R. Weigel, Munich/Linz)
- (2) Intravascular Ultrasound (IVUS), Bochum, Germany, 14 June 1997 (responsible: H. Ermert, Bochum)
- (3) Acoustic Wave Devices for Portable Telecommunica-

tion (Focused and Open Forum sessions at the IEEE MTT-S Symposium), Denver, Colorado, USA, 10-11 June 1997 (coordinator: R. Weigel, Linz)

The German UFFC chapter co-sponsored the International Workshop on Radio Sensor and Communication Techniques, Sindelfingen, Germany, 21 April, 1997. The workshop was additionally co-sponsored by the German MTT/AP chapter and has been held in conjunction with MIOP '97-9th Conference and exhibition on Microwave, Radio Communication and Electromagnetic Compatibility. The audience of the workshop was some 60 participants. There were 21 papers out of which there were 6 SAW papers which were entitled as follows:

- F. Seifert et al., Wireless Sensors and Data Links Based on SAW Devices;
- K. Tsubouchi, Spread Spectrum Wireless Card Using 2.4 GHz Front-End SAW Matched Filter;
- W. Buff, SAW Sensor Systems With Passive Remote Measurement Capability;
- G. Scholl et al., Wireless SAW Sensors for Remote Measurements of Physical Parameters;
- P. Heide, Microwave and Millimeterwave Sensor Systems for Commercial Applications at 24, 61 and 77 GHz (Based on Flip-Chip and SAW-Technology);
- J. Enderlein et al., SAW Based Spread Spectrum System for Audio Transmission

At the IEEE MTT-S Symposium this year in Denver 11 acoustic wave papers were accepted (3 of which had been invited) dealing with acoustic wave devices and applications. They were grouped into an Open Forum session and a Focused Session. Both sessions were highly successful. In the Focused Session there was an audience of about 300. The Focused Session was entitled "Acoustic Wave Devices for Portable Telecommunication." It included three high-caliber invited papers coming from Motorola, Siemens and Hitachi.

Robert Weigel
Johannes Kepler University
Linz, Germany

Tokyo Chapter

The Tokyo Chapter held five technical meetings during the first half of 1997, in conjunction with the Technical Group on Ultrasonics of the Institute of Electronics, Information and Communications Engineers of Japan:

Date	Papers	Place
1) January 23, 24	18	Osaka
2) February 28	8	Chiba
3) April 25	10	Tokyo
4) May 23	6	Tokyo
5) June 24	7	Chiba

The 18th Symposium on Ultrasonic Electronics (USE97) will be held under the sponsorship of the UFFC-S Tokyo Chapter on November 12-14, 1997, at the Chiba University in Chiba prefecture. Most of the papers at the last year's symposium (USE96) were recently published in the special issue of Jpn. J. Appl. Phys., Vol. 36, No. 5B(1997). We plan to invite Prof. William D. O'Brien, Jr., the UFFC-S 1997-1998 Distinguished Lecturer, to Japan. The Tokyo Chapter will soon contact him to arrange the schedule of his lectures.

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

Orlando Chapter

We have accomplished 3 excellent meetings this year, with a very high level of technical content. The Chapter officers would like to express appreciation for the excellent member and non-member support this year. In particular, for our Dis-

tinguished Lecturer Banquet which had a record attendance of 36 (membership is 34). THANKS!!

Accomplishments

- Three technical meetings were held
- Two of the speakers came from outside the US (Brazil and Germany)
- National Distinguished Lecturer's Banquet held
- 1996 budget was met, 1997 budget on track
- Dr. Robert C. Smythe was named IEEE Fellow
- Established e-mail distribution list for paperless chapter announcements
- Total membership increased from 30 to 34 (13%)
- National UFFC support applied fo

Technical Presentations

11/13/96 "High Velocity Pseudo SAW: Further Insight"
 Dr. M.P. DaCunha, Univ of Sao Paulo, Sao Paulo, Brazil

11/13/96 "Applications of SAW devices in Spread Spectrum Communications"
 Dr. Clemens Ruppel, Siemens Corp.
 Research, Munich, Germany

2/6/97 "The Search for the Perfect Oscillator"
 Dr. Thomas Parker, NIST

Proposed Chapter Officers for 1997/98 year

Chair: Gary Archibald
 (407) 298-2000 ext 273
 garchib@piezotech.com

Vice-chair: Open
 Secretary: Open
 Treasurer: Open

Alex Zajac
Chair, Orlando Chapter

Moscow Chapter

The recent death of Igor Yakovkin has changed our plans regarding the September 1998 Symposium in Moscow. We decided to organize The Igor Yakovkin Memorial "4-th International Symposium on Surface Waves in Solids and Layered Structures" (it was he who initiated the First ISSWAS Symposium in Novosibirsk). It is planned to be held at the beginning of June, 1998 (after the 6th). The place of the symposium will be on a cruise ship traveling from Moscow to St.-Petersburg. The 3rd ISWASS took place on such a ship in conjunction with the Russian National Conference on Acoustoelectronics in May 1994.

In this connection, the previously declared 1998 International Symposium "Acoustoelectronics, Frequency Control, and Signal Generation" is going to be held together with ISSWAS on the same ship and participants can take part in both events. All other details will be given later. For further information watch the society website or contact can be made with G. D. Mansfeld at mans@mail.cplire.ru.

G.D.Mansfeld
V.N.Kuleshov
S.V.Kulakov

WELCOME NEW UFFC-S MEMBERS

We welcome the following new members to the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society.

ARGENTINA

Crisi, Leopoldo
Cruz, Claudio M.
Murphy, Paricio L.
Villarroya, Pablo

ARMENIA

Vardanyan, Eduardo

AUSTRALIA

Ghanayem, Omar H.
Oghanna, Wardina

BRAZIL

Alvarenga, Andre V.

CANADA

Milliken, Bruce E.
Steinman, Aaron H.
Wight, Derek L.
Wright, Steven A.

COLOMBIA

Forero, Luis L.
Rodriguez, Omar

ENGLAND

Everard, Jeremy
Recoquillion, Marc
Walker, Simon P.
Young, Warren

FINLAND

Huhtinen, Ville

FRANCE

Detaint, Jacques L.
Luis, Pizarro
Rychagov, Michael N.
Tavakkoki, Jahangir
Thvier, Bov Mayar

GERMANY

Gruenwald, Richard
Graf, Rolf
Wallner, Paul
Wilkening, Wilko G.

INDIA

Harikumar, C

IRAN

Banitalebi-Dehkoyde, Ali

ISRAEL

Miara, Gal
Oni-Grinberg, Adar
Sawalhi, Yousef Abed

ITALY

Rocchi, Santina

JAPAN

Jinzaki, Yoshinobu
Matsuoka, Tsugufumi
Sakakura, Mitsuo
Usugi, Kikuo
Yamazaki, Masato

KOREA

Jeon, Jin-oh
Kang, Bongkoo
Kim, Hyo S.
Kim, Jong K.
Suh, Dong-Man

MEXICO

Barcnas, Carlos
Chavez-Zamora, Guillermo
Williams-Alonso, Adrian

NETHERLANDS

Cespedes, E. Ignacio

NICARAGUA

Medina, Luis A.

NORWAY

Austeng, Andreas

RUSSIA

Anatolievich,
Kolosovsky, E.
Kochemasov, Victor
Naumenko, Natalya
Sidorov, Ivan
Tsarev, A. Vladimirovitch
Zaitsev, Boris D.

SINGAPORE

Yu, Jiun-Der

SOUTH AFRICA

Broadhurst, Anthony

SPAIN

Yebra, Jobe L.

SWEDEN

Dahl, Jan A.
Gunee, Anders E.
Olsson, Torbjorn
Olsson, Ulf T.

TANZANIA

Nshekanabo, Gratian M.

TURKEY

Cebi, Ilker
Firat, Cuneyd
Kozak, Mucanit
Norgaz, Gokhan
Ozer, Hamza

CALIFORNIA

Barney, Darryl L.
Cherrey, Kelly
Chung, Min-in
Dauguet, Patricio E.
Howell, Gelston
Selva, Luis Enrique
Tang, Andrew P.
Witham, John P.

COLORADO

Cheek, Daniel S.
Fielding Jr., Joseph T.
Hamza, Ahmed

CONNECTICUT

Heines, Gerald W.
Mitchell, Elle

DELAWARE

Sharkawy, Ahmed S.

FLORIDA

Singh, Ricardo P.

GEORGIA

Olutade, Bolaji

ILLINOIS

Sahm, Peter

KANSAS

Lindsley, Erik

MASSACHUSETTS

Chi, Jim Y.
Kotidis, P.
Lavoie, Adrian J.
Luettgen, Mark R.
Narayanan, V. Mandj
Thimothée, Michelet
Wheeler, Bradley A.

MAINE

Vetelino, John

MICHIGAN

Morin, Jeffrey
Ridley, Raymond B.

NORTH CAROLINA

Daidsen, Richard E.
McGough, Robert J.

NEW HAMPSHIRE

Whitworth, Glenn

NEW JERSEY

Furmato, James A.
Meister, James E.

NEW MEXICO

Hall, D.

NEW YORK

Kim, Tae-Gun
Leary, Sean P.
Lee, Choon B.

OHIO

Houser, Kevin L.
Talman, James R.
Taylor, Keith P.

OREGON

Carsten, Bruce W.
Cary, David A.

PENNSYLVANIA

Aurand, Robert C.
Mastrocola, Angelo R.
Ritter, Tim A.
Steinberg, Bernard D.
Stridinger, Kurt R.

SOUTH CAROLINA

Elias, William H.

TEXAS

Ahsan, Soheli
Bertrand, Maurice J.
Ophir, Jonathan

VIRGINIA

Schwarz, Willi G.

WASHINGTON

Frey, Gregg
Kim, Jim H.
Por, Hing
Sugiyama, Takashi

WISCONSIN

Cao, Hong
Dong, Fang
Johnson, Paul H.

Standards Activities Report

1. Our Society is currently responsible for nine items, eight standards, and one project.

2. Piezoelectric Crystals - T. R. Meeker (176-1987 and 177-1978)

The present version of Standard 176 was published in IEEE Trans. UFFC, Vol. 43, No.5, September 1996, pp. 719-772, along with explanatory material and proposed revisions (pp. 717-718); comments have been received, and are being scanned. The revised version will then be circulated among the subcommittee members for approval.

3. Ultrasonics in Medicine - P. D. Edmonds (790-1989)

"There has been no activity and I don't foresee any." (From 11/96 report: Standard 790-1989; "Guide for Medical Ultrasound Field Parameter Measurements" was reaffirmed by the IEEE Standards board on September 19, 1996, for a period of five years.)

4. Time and Frequency - J. R. Vig (1139-1988 and 1193-1994)

Standard 1139-1988, "IEEE Standard Definitions of Physical Quantities for Fundamental Frequency and Time Metrology," is ready for balloting. A paper on the draft standard was given during Poster Session 1 at the Orlando FCS.

5. Sensors - J. Schoenwald (P1182)

From 11/96 report: "IEEE Guide to Terms and Definitions of Ferroelectric, Frequency Control, and Ultrasonic Sensors is in limbo until after the San Antonio meeting, 11/96."

6. Ferroelectrics - A. H. Meitzler (180-1986)

The first meeting of the committee revising Standard 180-1986 took place 11/96 at PSU. The plan is to keep Std 180 in substantially the same form and with substantially the same content, but with corrected errors, improved definitions, and perhaps, a few new concepts included. The work of revision will be done by utilizing the pool of talent at the Materials Research Lab of PSU to form a working group. A. H. Meitzler and Susan Trolrier-McKinstry function as co-chairpersons.

7. Surface Acoustic Wave Devices - E. L. Adler (1037-1992)

Subcommittee reconstitution will be pursued at the FCS Orlando meeting. Reaffirmation of the existing standard is probably the best option at this time, since a decision has to be made by 12/97.

8. Actuators and Transducers - J. G. Smits

"In my case there are not changes. I will not be able to attend the ADCOM meeting in Florida, but I will certainly be in Toronto."

9. Piezomagnetic Technology - S. L. Ehrlich (219-1990)

Standard will be reaffirmed. Kathy Doty (IEEE Standards Dept) recently left IEEE, and the ballots have not gone out yet. Situation will be corrected after June ASA Penn State meeting.

Arthur Ballato
Chairman, Standards Activities
Ultrasonics, Ferroelectrics, and
Frequency Control Society



Dr. Satoru Fujishima

Dr. Satoru Fujishima was honored with a high decoration by the Emperor of Japan in a ceremony on May 12, 1997. The reason was a great contribution to the development and mass-production of piezoelectric devices for frequency control and selection using piezo-ceramics. The photo of Dr. Fujishima and his wife Kazu was taken at the ceremonial hall following the presentation.

BYLAWS

IEEE ULTRASONICS, FERROELECTRICS, AND FREQUENCY CONTROL SOCIETY

1. Nature of the Bylaws.

These Bylaws are intended to provide general, and in some cases explicit, instructions for the supervision and management of the affairs of the Society, in accordance with the Society Constitution and the IEEE Technical Activities Manual which includes the Constitution and Bylaws of the IEEE. Amendments to these Bylaws may be made by means of the procedures described in Article 9, Section 9.2 of the Constitution. Decisions on procedures made and voted by the AdCom as reported in its Minutes are binding as written and approved. Only the most important and time independent procedures shall be incorporated in the Bylaws.

2. Society Membership.

2.1 Regular Members. There shall be only one grade of Society membership available to all IEEE members, based on the payment of the annual fee prescribed in Section 4.1 of these Bylaws.

2.2 Honorary Life Members. Such membership, exempt of the payment of the annual fee, shall be based on the recommendation of the Awards Committee and the approval of AdCom.

2.3 Affiliates. No Societies are recognized for affiliate purposes. However, Affiliates may join in accordance with any other provision that may be incorporated in the IEEE rules and regulations.

2.4 Students. An exception to the annual fee shall be made for students, as prescribed by IEEE rules and regulations.

2.5 Voting Membership. The voting membership shall be constituted of Regular Members, Honorary Life Members and Affiliates.

3. Administrative Committee (AdCom).

3.1 AdCom Makeup. Article 5, Section 5.1 of the Constitution provides that AdCom shall consist of a President, a President-Elect (Section 3.6), and not more than 12 ex-officio members, and not more than 12 elected members. Of the elected members, at least three must be from regions 8 through 10. Article 7, Section 7.2 of the Constitution provides that a quorum shall be nine members, without distinction between elected members and ex-officio members, and that all members shall have an equal vote. Unless otherwise provided, a majority vote of the members attending an AdCom meeting shall be sufficient for the conduct of its business.

3.2 Ex-Officio Members. The following shall be ex-officio members with vote if they are not already elected members (in any case, each shall have only one vote):

- a. The retiring AdCom President for a period of four years (no more than two)

- b. Chairs of the voting standing committees as listed in Section 5.1 of these Bylaws

- c. Secretary-Treasurer

3.3 Absences and Vacancies. In order to create a continuously active AdCom, elected and ex-officio members who miss three consecutive meetings will be dropped from membership in AdCom in the absence of extenuating circumstances. A vacancy in the elected membership thus or otherwise created will be filled by appointments for the unexpired term by the President as prescribed in Article 6, Section 6.1 of the Constitution.

3.4 Nomination of Members. A slate of nominees for vacancies on AdCom shall be prepared by the Nominations Committee for approval by AdCom at its first scheduled meeting of the year. The number of nominees shall be at least six from regions 1 through 7 and at least two from regions 8 through 10, and proper consideration shall be given to technical interest. Nominees may also be presented by Society members. A Nominating Petition, carrying at least 25 names of Society members, places that nominee automatically on the slate. Nominees may also be presented from the floor by members of AdCom. A simple majority vote will place the nominee on the ballot. All nominees must be voting members of the Society in good standing at the time of nomination.

3.5 Election of Members. The election to fill forthcoming vacancies on AdCom shall be by mail ballot to the entire Society voting membership. To ensure representation from regions 8 through 10, each member shall vote for up to three nominees from regions 1 through 7, and for at least one nominee from regions 8 through 10. The deadline for the return of the ballots shall be not less than 30 days after the actual date of mailing of the ballots. Distribution, collection, and counting of ballots shall be done by IEEE Headquarters. Election shall be based on the highest number of votes, taken in descending order for the candidates from regions 1 through 7, and in descending order for the candidates from regions 8 through 10. Ties shall be broken by AdCom.

The Chair of the Nominations Committee shall insure an orderly progression and completion of the election procedure prior to the last scheduled AdCom meeting of the year.

3.6 Nomination and Election of Officers. At the last scheduled meeting of an election year (Section 3.7), AdCom shall elect a President-Elect for the following two years. Nominations will be invited from the floor and election shall be by secret ballot. A majority of the ballots shall determine the election. In case there are more than two nominees, and no nominee receives a majority, the nominee with the lowest number of votes shall be dropped from the slate, and the voting repeated until a majority is obtained. The election for President-Elect shall be conducted by the incumbent President.

3.7 Term of Office. Each odd-numbered year is an election year. As provided in Article 5, Section 5.1 of the Constitution, the term of both the President and the President-Elect shall be for two years, commencing January 1 of even years. The retiring President shall not be eligible for election to the office of President-Elect. If a President resigns in his first year, the President-Elect becomes President and elections for both President and President-Elect will be held the next odd year. If the President resigns in his second year, the President-Elect becomes the President with a term of no more than three years. A President-elect who replaces a standing President may serve no more than three years.

3.8 Duties of Officers and Members of AdCom. It is intended to retain as much flexibility in the operation of AdCom as possible. Therefore, with the exception of a few minimum requirements, the provisions of this section are intended to serve as general guidelines without being binding in detail. It is the responsibility of all officers and standing committee chairs to continue in service until their successors have had the opportunity to be briefed, receive the files appropriate to their offices, and in other respects take the reins of office. Transfer of Society records and files should always be confirmed in writing, with copies of the letter of transmittal sent to the Secretary-Treasurer. At the discretion of the President, Society Archives may be transferred to the Ultrasonics, Ferroelectrics, and Frequency Control Society section of the IEEE Archives.

3.8.1 President. The President shall supervise the affairs of the Society, as defined in Article 5, Section 5.2 of the Constitution, and shall speak for the Society on all matters not specifically delegated to others. The President is automatically a member of certain IEEE committees, and in these positions is expected to promote the interest of the Society, and to influence for the better the conduct of IEEE affairs. The President shall also serve as the Society representative on the IEEE Division IX Nominating Committee. The Society may provide funds to enable the President or designated alternate to attend the IEEE TAB Meetings and to chair the first scheduled AdCom meetings, provided that all possibilities of employer reimbursement have been exhausted.

3.8.2 President-Elect. The President-Elect shall fulfill the Presidential duties in the President's absence or incapacity, and shall fulfill such other functions as directed by the President or AdCom.

3.8.3. Vice-Presidents. There will be no more than four Vice-Presidents.

The Vice-Presidents for Ultrasonics, Ferroelectrics, and Frequency Control are to be chairs of their respective standing committees, with duties described in Section 5. The Vice-President for Publications is to oversee the publication activities of the Society as described in Section 7. Vice-Presidents may be added or deleted by AdCom as the need arises through amendment of the Bylaws, subject to the restrictions imposed by Article 5, Section 5.1 of the Constitution. Vice-Presidents

shall be appointed biennially by the President and ratified by a majority of the elected members of AdCom.

3.8.4 Secretary-Treasurer. The Secretary-Treasurer shall be appointed by the President as prescribed in Article 5, Section 5.1.3 of the Constitution and shall be responsible for keeping the records of AdCom. These responsibilities include preparing and distributing meeting notices and minutes in sufficient detail so that they constitute a satisfactory record of decisions made by AdCom and other Society affairs, maintaining a complete file of minutes, financial records and other correspondence which will become the permanent record of the Society, endorsing and transmitting to IEEE all bills for payment, and monitor rates of receipts and expenditures in order to insure conformance to the Society's budget and guidelines as imposed by AdCom.

3.9 Meetings. The basic conduct of AdCom meetings is covered in Article 7, Section 7.2 of the Constitution. No AdCom meetings shall be held for the purpose of transacting business unless each member has been notified of the place and time of such meeting at least ten days prior to the scheduled date of the meeting. In case less than a quorum attend a duly called meeting, tentative actions may be taken which will become effective upon ratification at a subsequent meeting or by mail by a sufficient number of members as to constitute a majority. Minutes of each meeting shall be mailed to all AdCom members at least ten days before the next scheduled meeting.

4. Society Funds.

4.1 Annual Fee and General Expenditures. The Society may raise funds as specified in Article 4 of the Constitution and in the IEEE Bylaws and rules and regulations. The Society may spend funds within the same restrictions. Expenditures must fall within budget projections, as approved by AdCom. It is the responsibility of the Secretary-Treasurer to monitor the expenditures, and in case of gross deviations from the budget consult with the Finance and Operations Committee and obtain AdCom approval for those expenditures. The annual Society fee shall be set by AdCom subject to approval by the IEEE Executive Committee. The Affiliate fee shall be equal to the Society fee plus an IEEE support surcharge set by the IEEE Executive Committee. Actual Society fees are to be found in the current IEEE fee schedule. IEEE Headquarters shall act as a bursar for all Society funds except as specified hereunder. Billings and receipt of the annual fee shall be via the IEEE Membership and Fiscal Departments. All other fiscal affairs shall be handled through the office of the TAB Secretary.

4.2 Symposia Funds. Financial arrangements of conferences or symposia sponsored or co-sponsored by the Society shall be covered by a separate budget with adequate safeguards against undue risk. The general committee for such a conference or symposium may authorize the Conference Treasurer or Finance Officer to open an account to be used for the deposit and disbursement of funds related to the symposium and may request from the Society's general fund a loan

to cover expenses in advance of the symposium. The Symposium General Chair is required to submit a formal budget to AdCom for approval at least ten months before the symposium, and to present an account of symposium income and expenses at the first scheduled meeting after the symposium. The symposium budget shall also be submitted to the IEEE General Manager for approval. All symposia must comply with IEEE audit requirements. Final transfer of funds from the Symposium account to the Society's general fund, including return of the loan, must be completed within a year after the symposium.

4.3 Other. In other activities involving the Society or any of its subgroups, financial commitments shall be approved by AdCom, and prudent arrangements shall be made to safeguard the Society funds that may be involved.

5. Committees.

5.1 Standing Committees. Standing Committees may be added or deleted by AdCom as the need arises through amendment of the Bylaws, subject to the restrictions imposed by Article 5, Section 5.1 of the Constitution. Standing Committee Chairs including the Vice-Presidents shall be appointed by the President and ratified biennially by a majority of the elected members of AdCom. It will be discretionary with the President to appoint part or all of any standing committee, or to appoint the Chair or Vice-President only and request the latter to appoint additional committee members. The Standing Committees shall be:

1. Awards
2. Membership Services
3. Fellows (non-voting)
4. Ultrasonics
5. Ferroelectrics
6. Frequency Control
7. Nominations
8. Standards
9. Finance and Operations
10. Publications
11. Transactions (non-voting)
12. Newsletter (non-voting)
13. Proceedings (non-voting)

5.2 Term of Office. The terms of office of the chair and members of the standing committees shall be for two years. However, because it is recognized that the tasks in connection with Society activities are of continuing nature and it takes some time to become familiar with these tasks and be effective, chairs of these committees are encouraged to serve more than the minimum term. Although the number of terms of office is not limited by these bylaws, reappointment beyond five terms will require special approval by the elected members of AdCom.

5.3 Ad Hoc Committees. Special or Ad Hoc Committees may be created by AdCom as the need arises, as provided for by Article 5, Section 5.3 of the Constitution. For each such case, AdCom shall specify if the chair is to be an ex-officio

member of AdCom with or without vote, the number of members the committee shall have and how the members are to be selected, and the terms of office of the Chair and the members if other than for the life of the Committee. Unless otherwise specified, Long Range Planning Special or Ad Hoc Committees shall be automatically dissolved after a period of two years.

6. Duties of Standing Committees.

6.1 General. As with the duties of AdCom officers as noted in Section 3.8 of these Bylaws, the duties of the Standing Committees as listed below are intended to be general guidelines, and serve as minimum requirements only. Each Standing Committee Chair is expected to gather information from IEEE documents, from other IEEE Societies, from non-IEEE groups where appropriate to establish a point of reference for the Society's operations, and in general remain aware of the status of the Society within its sphere of interest. The Chair shall take the initiative to inform AdCom of developments which may affect its operations and plans and shall prepare

6.2 Awards Committee. The Awards Committee is charged with the following responsibilities:

- a. Select candidates and prepare nominations for the various IEEE Awards listed in the IEEE Awards Manual.
- b. Evaluate nominations for IEEE Awards if requested to do so by the IEEE Awards Board.
- c. Recommend members for Honorary Life Membership of the Society.
- d. Select candidates for Society Awards.
- e. Prepare Certificates of Appreciation for members who are completing tenure, as requested by the Committee Chair.
- f. Monitor awards presented by the Standing Committees.

These Society Awards are:

1. The Ultrasonics, Ferroelectrics, and Frequency Control Society Achievement Award.
2. The Ultrasonics, Ferroelectrics, and Frequency Control Society Outstanding Paper Award.
3. The Distinguished Lecturer Award.

AdCom may approve additional Society awards, subject to required IEEE approval. Nominations for Society Awards shall be considered annually by the Awards Committee, although awards need not be made annually. The Committee's decision is final and need not be ratified by AdCom, except for Honorary Life Membership and the Distinguished Lecturer Award.

Additional Awards may be awarded by the Ultrasonics, Ferroelectrics, and Frequency Control Standing Committees.

6.3 Membership Services Committee. The Membership Services Committee shall encourage membership in the IEEE and especially membership in the Society by all IEEE members who are interested in the fields of interest of the Society, support the local or regional Society Chapters and initiate or actively encourage the formation of new Chapters. It shall initiate membership drives, and prepare membership material for special mailings or distribution at Symposia sponsored by the

Society. The Chair shall be the interface between Chapters and AdCom and report on Chapter activities at AdCom meetings. The Committee shall maintain a list of Chapter officers, and a mailing list of non-Society members who have attended meetings or conferences sponsored by the Society or in any other manner have indicated interest in the activities of the Society.

6.4 Fellows Committee. The Fellows Committee shall be responsible for receiving and evaluating nominations for Fellow grade candidates engaged in the fields of activity covered by the Society. The Committee shall make recommendations concerning these nominations on behalf of the Society. Its deliberations and conclusions are confidential and shall only be transmitted to the IEEE Fellow Committee. The Society's Fellows Committee shall consist of at least five members, all of whom must be Fellows.

6.5 Ultrasonics Committee. The Ultrasonics Committee shall encourage and assist the orderly development of technical activities related to Ultrasonics and promote the Society as the focal point of these activities. The Committee shall be responsible for selecting schedules, dates and locations for the annual International Ultrasonics Symposium for approval by AdCom. It shall select a Symposium Chair for each Symposium and appoint a Proceedings Editor, and ascertain that all preparations for the Symposium are progressing satisfactorily. It shall support the Ultrasonics Symposium organizing committee where needed and insure that the Symposium plans are in accordance with Society policies and directives as described in the IEEE Conference Organization Manual. Its activities include the organization of workshops, tutorials, and the organization of topical sessions on Ultrasonics at other IEEE conferences. As part of the Finance and Operations Committee, the Ultrasonics Committee Chair shall review the Ultrasonics Symposium budget which is to be submitted by the Symposium Chair to AdCom for approval, and make sure the Symposium Budget and Financial Report are in accordance with IEEE rules and regulations. The Committee will be responsible for administering any awards given by the Committee. New awards may be approved by AdCom subject to required approval by IEEE.

6.6 Ferroelectrics Committee. The Ferroelectrics Committee shall encourage and assist the orderly development of technical activities related to Ferroelectrics and promote the Society as the focal point of these activities. The Committee shall be responsible for selecting schedules, dates and locations for the International Symposium on the Applications of Ferroelectrics for approval by AdCom. It shall select a Symposium Chair for each Symposium and appoint a Proceedings Editor, and ascertain that all preparations for the Symposium are progressing satisfactorily. It shall support the organizing committee of the International Symposium on the Applications of Ferroelectrics where needed and insure that the Symposium plans are in accordance with Society policies and IEEE directives as described in the IEEE Conference Organization Manual. Its activities include the organization of work-

shops, tutorials, and the organization of topical sessions on Ferroelectrics at other IEEE conferences.

As part of the Finance and Operations Committee, the Ferroelectrics Committee Chair shall review the Budget of the International Symposium on the Applications of Ferroelectrics which is to be submitted by the Symposium Chair to AdCom for approval and make sure the Symposium Budget and Financial Report are in accordance with IEEE rules and regulations. The Committee will be responsible for administering any awards given by the Committee. The current award given by the Ferroelectrics Committee is the Ferroelectrics Recognition Award. New awards may be approved by AdCom subject to required approval by IEEE.

6.7 Frequency Control Committee. The Frequency Control Committee shall encourage and assist the orderly development of technical activities related to Frequency Control and promote the Society as the focal point of these activities. The Committee shall be responsible for selecting schedules, dates and locations for the International Frequency Control Symposium for approval by AdCom. It shall select a Symposium Chair for each Symposium and appoint a Proceedings Editor, and ascertain that all preparations for the Symposium are progressing satisfactorily. It shall support the International Frequency Control Symposium organizing committee where needed and insure that the Symposium plans are in accordance with Society policies and IEEE directives as described in the IEEE Conference Organization Manual. Its activities include the organization of workshops, tutorials, and the organization of topical sessions on Frequency Control at other IEEE conferences. As part of the Finance and Operations Committee, the Frequency Control Committee Chair shall review the International Frequency Control Symposium budget which is to be submitted by the Symposium Chair to AdCom for approval and make sure the Symposium Budget and Financial Report are in accordance with IEEE rules and regulations. The Committee will be responsible for administering any awards given by the Committee. The current awards given by the International Frequency Control Committee are the Walter G. Cady Award, the I. Rabi Award, and the C. B. Sawyer Award. New awards may be approved by AdCom subject to required approval by IEEE.

6.8 Nominations Committee. The Nominations Committee shall each year prepare a slate of nominees for vacancies on AdCom for presentation to AdCom at its first scheduled meeting of the year, as prescribed in Section 3.4 of these Bylaws. It shall prepare biographies of candidates for inclusion with the ballots, and interact with IEEE Headquarters in the conduct of the election. The Nominations Committee shall consist of a Chair, and at least four members not more than half of whom may be present members of AdCom.

6.9 Standards Committee. The Standards Committee shall be responsible for establishing and reviewing IEEE Standards within the scope of interest of the Society. The Committee shall periodically upgrade existing standards and shall initiate stand-

ards in new areas when they have become sufficiently established. The Chair of the Standards Committee shall appoint subcommittees to deal with specific areas and shall be an ex-officio member of all such UFFC standards subcommittees.

6.10 Finance and Operations Committee. The duties of the Finance and Operations Committee are to establish long range financial policy and plans of the Society, monitor and analyze financial data and make appropriate recommendations on expenses such as publication costs and meeting expenses. It shall prepare the annual budget for AdCom approval and submission to IEEE and report the financial status of the Society to AdCom. The Committee shall act as the sole interface between the Society and IEEE on all financial matters. In that capacity, the Committee shall review each Symposium Budget and Financial Report before it is submitted for approval by AdCom and be responsible for submitting these documents to IEEE. It will ensure that the financial records of each Symposium are audited as specified by IEEE rules and regulations. The Committee shall also periodically examine AdCom decisions and submit those deemed of sufficient general importance to AdCom for consideration to be included in the Bylaws, as prescribed in Article 9, Section 9.2 of the Constitution. The members of the Committee shall include the Chair, the Secretary-Treasurer, and the Vice-Presidents.

7. Publications.

Publications of the Society are to be overseen by the Vice-President for Publications. The Vice-President for Publications shall be biennially appointed by the President for a two-year term beginning January 1 and ratified by a majority of the AdCom. The duties of the Vice-President for Publications are to establish long range publications policy in accordance with the plans of the Society, monitor and analyze the current publications of the Society, and to make appropriate recommendations on quality, costs, and schedules of the publications. The Publications Committee chaired by the Vice-President for Publications should review all publication recommendations prior to presentation to the AdCom for discussion and approval.

The members of the Publications Committee shall include the Editor of the Society Transactions, the Editor of the Newsletter, and other members deemed necessary by the Vice-President for Publications and the President of the Society under the provisions of these Bylaws.

7.1 General. The Society shall publish a Transactions, a Newsletter, and a Proceedings for each Symposium sponsored or co-sponsored by the Society. The President shall appoint the Editors-in-Chief for the Transactions and Newsletter, subject to the approval of the elected members of AdCom. The Transactions Vice-President for Publications shall act as a liaison with the IEEE Publications Board. The editors for the Symposia Proceedings will be appointed by the chair of the

relevant technical committee: Ultrasonics, Ferroelectrics, or Frequency Control.

7.2 Transactions. The Transactions on Ultrasonics, Ferroelectrics, and Frequency Control shall be the primary publication of the Society. It shall contain the technical papers and review material which constitute the primary output of the Society. Its format, publication schedule, and contents are matters which shall be decided by AdCom, and executed by the Editor-in-Chief.

The normal term of office of the Editor-in-Chief shall be five years with the opportunity for reappointment. The Transactions Editor-in-Chief may appoint Associate Editors to receive and handle review of manuscripts in various technical areas. The terms of office for the Associate Editors shall be five years with the possibility for reappointment for only one additional term.

Paper review procedures shall be administered in accordance with IEEE and Society policies. Rules for manuscript preparation shall be available to those who request them, and shall be published at least once a year in the Transactions. The Editor-in-Chief may appoint guest editors for special issues, and may delegate corresponding responsibility for assembling the body of technical papers to be included. Other aspects of publication and content of special issues shall remain the responsibility of the Transactions Editor-in-Chief.

7.3 Newsletter. The Newsletter shall be published at least twice a year, and shall contain items of interest to members of the Society, such as announcements and results of elections and the biographies of elected AdCom members, the minutes of AdCom meetings, and reports of officers and committee chairs of AdCom. The Newsletter Editor-in-Chief shall have the responsibility of assembling the material and publishing the Newsletter in accordance with Society policy.

7.4 Symposium Proceedings. A Proceedings shall be published for each Symposium sponsored or co-sponsored by the Society which will contain papers presented at that Symposium. The Proceedings Budget, based on projected printing cost and the cost of the Proceedings to Symposium attendees and members of the Society, shall be set by the Proceedings Editor and the Chair of the relevant technical committee and be integrated with the Symposium Budget for approval by AdCom. Similarly, the Proceedings Financial Report shall be integrated with and be part of the Symposium Financial Report. The Proceedings Editor shall be a member of the relevant Symposium organizing committee. In all aspects, the Proceedings Editor shall follow the guidelines as set forth in the IEEE Policy and Procedures Manual and any AdCom guidelines.

7.5 Electronic Media. The Vice-President for Publications shall appoint a Director for Electronic Media who will be responsible for the Society's presentation of information on electronic media such as the Internet. Such presentations shall be considered Society publications.

IEEE FELLOW NOMINATIONS

It is not too early to be thinking about Senior Members of the UFFC-Society that you would like to nominate for the Fellow grade. Nominations will be due in March of 1997 and forms will be ready by November, 1996. To refresh your memory on the process it is described in the paragraphs that follow which focuses on the IEEE Fellow Committee and how it operates.

The IEEE Bylaws define the Fellow grade as one of unusual distinction in the profession, to be conferred only by initiation of the Board of Directors upon a person of outstanding and extraordinary qualifications and experience in the IEEE designated fields, who has made important individual contributions to one or more of those fields. A nominee must be a Senior Member of the Institute and have been a member in any grade for at least five years prior to January 1 of the year of election.

The Fellow Committee, appointed by the Board of Directors, has the responsibility of making recommendations to the Board of Directors for nominees to be conferred the grade of Fellow.

The Fellow Committee acts as a guardian of IEEE Fellow grade standards and works carefully and faithfully to maintain these standards uniformly throughout the IEEE. The committee is concerned with determining whether the applicants meet the requirements of the IEEE Bylaws, and it seeks assistance from many sources in adjudicating the nominations.

The Fellow Committee depends upon the nominator of a candidate to furnish all of the basic necessary information requested on the nomination form and to point out the unique contributions of the candidate in a concise and succinct statement.

The Fellow Committee depends upon the society evaluations of, the technical contributions of the candidates and their ranking of the candidates.

The Fellow Committee depends upon the Fellow grade references to comment on the candidate's specific achievements which they are qualified to judge.

The Fellow Committee will consider brief letters of endorsement from IEEE sections, chapters and committees.

In the processing by the Fellow Committee, the candidates' dossiers are evaluated on a basis of eight criteria:

1. Individual contributions as engineer, scientist, originator, technical leaders, or educator.
2. Evaluation by an IEEE society. Note that only one IEEE society evaluation is to be submitted for each candidate. The nominator is responsible for selecting the IEEE society that best reflects the candidate's field of technical accomplishments.
3. Tangible and verifiable evidence of technical accomplishments, such as technical publications, patents, reports, or published descriptions of products, facilities, and/or service.
4. Opinions of confidential Fellow references who are qualified to judge the work of the candidate (where possible, these should be associated with other than the candidate's own organization).
5. Service to IEEE and its predecessors, the AIEE or IRE.
6. Professional engineering service other than the IEEE.
7. Opinions of endorsers.
8. Total years in the profession.

Having considered all of the valuable information supplied from these many sources, a consensus of committee judgments is reached on the nominees to be recommended to the Board of Directors for evaluation to the IEEE Fellow grade, taking into account the maximum number of recommendations permitted by the IEEE Bylaws which can be submitted annually.

If you are interested in nominating one of our UFFC Society members you may obtain the necessary forms from

Sandy Schumacher, IEEE Corporate Communications & Awards Activities, P.O. Box 1331 - 445 Hoes Lane, Piscataway, NJ 08855-1331, (732) 562-3843

The following is a list of members of the UFFC-S who are Fellows of the IEEE.

IEEE UFFC-S Fellows

John D. Adam
E. L. Adler
Robert Adler
Akihiro Ametani
John M. Andrews
B. A. Auld
A. Ballato
L. L. Beranek
D. A. Berlincourt
Leif Bjorno
J. V. Bouyoucos
Mack A. Breazeale
C. B. Burckhardt
Charles A. Cain

C. K. Campbell
Paul H. Carr
M. Chodorow
H. W. Cooper
Leslie E. Cross
Joseph M. Crowley
C. C. Cutler
Louis J. Cutrona
Kenneth L. Davis
Eugene J. Dieulesaint
Michael M. Driscoll
Floyd Dunn
Lawrence N. Dworsky
E. P. Eernisse

Irving Engelson
G. W. Farnell
Francis J. Fry
Satoru Fujishima
Fred E. Gardiol
R. Gerhard-Multhaupt
James F. Greenleaf
Thomas W. Grudkowski
Gene H. Haertling
E. Hafner
Gerald R. Harris
Helmut W. Hellwig
Jeannine H. Henaff
Eric Herz

F. S. Hickernell
Charles F. Horne Jr.
Masaru Ibuka
Robert A. Johnson
Yukio Kagawa
Reynold S. Kagiwada
Peter Kartaschoff
Irving Kaufman
B. T. Khuri-Yakub
Gordon S. Kino
R. La Rosa
C. E. Land
Karl Joerg Langenberg
Hua Lee

Moises Levy
Peter A. Lewin
H. C. Lin
L. C. Lynnworth
J-A-M Lyon
Takehiko Machida
Albert Macovski
Charles Maerfeld
T. Makimoto
Donald C. Malocha
S. L. Marple Jr.
Bruce McAvoy
A. H. Meitzler
Nobuo Mikoshiba
Shota Miyairi
Gary K. Montress
R. A. Moore
Arye Nehorai

L. Neumann
V. L. Newhouse
Tatsuji Nomura
W. D. O'Brien, Jr.
Matthew O'Donnell
A. A. Oliner
E. P. Papadakis
Kevin J. Parker
Thomas E. Parker
Barry S. Perlman
Bernard Picinbono
John M. Reid
Paul Rosenberg
Peter H. Russer
W. J. Sarjeant
O. H. Schmitt
Thomas A. Seliga
G. M. Sessler

Gustave Shapiro
Yasutaka Shimizu
K. Kirk Shung
Bikash K. Sinha
Leland P. Solie
Johannes G. Smits
Robert C. Smythe
Roger Tancrrell
William J. Tanski
S. W. Tehon
Donald O. Thompson
R. E. Thompson
Harry F. Tiersten
Bernhard R. Tittmann
Chen S. Tsai
A. Uhlir, Jr.
Sotirios J. Vahaviolos
Herman van de Vaart

Jacques Vanier
John R. Vig
Robert C. Waag
G. Wade
Robert S. Wagers
Kikuo Wakino
Stephen Wanuga
Kiyotaka Wasa
W. Welkowitz
R. M. White
H. K. Wickramasinghe
Werner Wiesbeck
R. C. Williamson
Kazuhiko Yamanouchi
L. T. Zitelli

FUTURE UFFC-S SPONSORED SYMPOSIA

ULTRASONICS SYMPOSIA

1997 IEEE International Ultrasonics Symposium

Toronto, Ontario, Canada — 5 - 8 October 1997

For information contact:

F. Stuart Foster, *General Chair*

University of Toronto

Sunnybrook Health Science Center

Department of Medical Physics

Reichmann Research Building

2075 Bay View Avenue

Toronto, Ontario

CANADA M4N 3M5

(416) 480-5716 (Phone)

(416) 480-5714 (FAX)

stuart@srcl.sunnybrook.utoronto.ca (e-mail)

Katherine W. Ferrara, *Technical Program Chair*

University of Virginia

Department of Electrical Engineering

1105 West Main Street

Stacey Hall

Room 1421

Charlottesville, Virginia 22903

USA

(804) 243-6321 (Phone)

(804) 982-3870 (FAX)

kathyf@virginia.edu (e-mail)

1998 IEEE International Ultrasonics Symposium

Sendai, Miyagi, Japan - 5-8 October 1998,

For information contact:

Noriyoshi Chubachi, *General Co-Chair*

Tohoku Gakuin University

Faculty of Engineering

Tagajo, Miyagi 985

JAPAN

(81) 22-368-7070 (Fax)

chubachi@tjcc.tohoku-gakuin.ac.jp (e-mail)

or

Bernhard R. Tittmann, *General Co-Chair*

Pennsylvania State University

Department of Engineering & Mechanics

210 Hallowell Building

University Park, Pennsylvania 16802

USA

(814) 865-7827 (Phone)

(814)865-3626 (Fax)

brt4@psu.edu (e-mail)

James Greenleaf, *Technical Program Co-Chair*

Mayo Clinic

Ultrasound Research

200 First Street SW

Rochester, Minnesota 55905

USA

(507)284-8496 (Phone)

(507)284-1632 (Fax)

jfg@mayo.edu (e-mail)

Kazuhiko Yamanouchi, *Technical Program Co-Chair,*

Tohoku University,

Research Institute of Electrical Communication

Katahira, Aobaku, Sendai 980-77,

JAPAN

(81) 22-217-5526 (Fax)

yamasaw@riec.tohoku.ac.jp (e-mail)

Hiroshi Kanai, *Local Arrangements*

Tohoku University,

Graduate School of Engineering

Aramaki, Aobaku, Sendai 980-77

JAPAN

(81) 22-263-9230 (Fax)

ieeus98@tohoku.ac.jp (e-mail)

1999 IEEE International Ultrasonics Symposium

San Francisco Bay Area, CA

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

(415) 723-0718 (Phone)

(415) 725-7509 (FAX)

khuri-ya@ee.stanford.edu (e-mail)

2000 IEEE International Ultrasonics Symposium

San Juan, Puerto Rico

For information contact:

Madjid A. Belkaid, *General Chair*

University of Central Florida

Department of Electrical & Computer Engineering

Orlando, Florida 32816-2450

USA

(407) 823-5793 (Phone)

(407) 823-5835 (FAX)

mab@engr.ucf.edu (e-mail)

2001 IEEE International Ultrasonics Symposium

Location, dates, and contacts not approved yet

2002 IEEE International Ultrasonics Symposium

Munich, Germany

For information contact:

Reinhard Lerch, *General Chair*

University of Linz

Institute fuer Elektrische Messtechnik

Altenberger Strasse 69

A-4040 Linz

AUSTRIA

(43) 732-2468-9209 (Phone)

(43) 732-2468-822 (FAX)

r.lerch@jk.uni-linz.ac.at (e-mail)

FREQUENCY CONTROL SYMPOSIA

1998 IEEE International Frequency Control Symposium

Pasadena, California

For information contact:

Thomas E. Parker, *General Chair*

National Institute of Standards & Technology

Time & Frequency Division

Division 847

325 Broadway

Boulder, Colorado 80303

USA

(303) 497-7881 (Phone)

(303) 497-6461 (FAX)

tparker@bldrdoc.gov (e-mail)

Gary R. Johnson, *Technical Program Chair*

Sawyer Research Products Inc.

35400 Lakeland Boulevard

Eastlake, Ohio 44095

USA

(216) 951-8770 (Phone)

(216) 951-1480 (FAX)

g.johnson@ieee.org (e-mail)

1999 IEEE International Frequency Control Symposium

Besancon, France

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

FRANCE

(31) 81-66-66-32 (Phone)

(31) 81-88-57-14 (FAX)

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)

FERROELECTRICS SYMPOSIA

1998 IEEE International Symposium on Applications of

Ferroelectrics

Montreux, Switzerland

For information contact:

Nava Setter, *General Chair*

Ecole Polytechnique Federale de Lausanne (EPFL)

Laboratoire de Ceramique

MX-D Ecublens

CH-1015 Lausanne

SWITZERLAND

(41) 21-693-2961 (Phone)

(41) 21-693-5810 (FAX)

nava.setter@lc.dmx.epfl.ch (e-mail)

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 contributions. You are encouraged to identify members you feel 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. Participate by filling out the attached form.

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: (508) 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. 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

Notes from the Editor

The Ultrasonics Symposium, long standing annual major technical gathering for the UFFC Society, will be in the beautiful city of Toronto, Canada. This is the third time the symposium has been in Canada, and the 36th symposium since the society was formed in 1953. Stuart Foster, a previous AdCom member and Distinguished Lecturer, as the General Chair, has arranged for an outstanding meeting with the help of his organizing committee. It should be a beautiful time in Toronto with the colorful fall leaves decorating the maple trees. Kathy Ferrara and her legion of technical program committee members have developed an excellent technical program. The North and South American authors will be in the minority with most of the papers coming from outside the Western Hemisphere.

The Frequency Control Symposium in Orlando had a whopping 431 registered attendees. It had a strong international representation. Our congratulations to Tom Parker and Gary Johnson and the committee for a fine symposium. Our congratulations also go to the special award winners pictured in the newsletter.

In June the society lost one of its outstanding Russian members and I lost a personal friend. Igor Yakovkin passed away in early June following surgery for a brain tumor. I first met Igor in Novosibirsk, Russia, in 1986, at the International Symposium on Surface Waves in Solid and Layered Structures (ISWASS'86). He was a prime mover in inviting western scientists to a major symposia in Russia. It was later in 1991, when he was able to attend an Ultrasonics Symposium in the United States, that many of our society members had the opportunity to experience his gracious spirit. The Russian scientific community is organizing a special ISWASS in June of 1998 in memory of Igor. If you want to experience Russian history and life on the waterways between Moscow and St. Petersburg, with an excellent technical program for part of the day, don't miss this experience. Details will appear later.

President Malocha has apprised us of the changes and initiatives that have occurred. We have a new constitution and bylaws which improves the organizational structure for service to our membership. The website on the Internet has attracted a number of visits. In June the visitor number passed 10,000. We will have a number of our sponsored symposia outside the North American continent in the next few years.

Our society is also attracting the interest of groups who would like to affiliate. We will miss Don's cheery but firm guidance as President at the AdCom meetings.

Gary Montress has selected the important actions at our AdCom meeting in June and the photos that follow were taken during that time. Ryszard Lec is raising our consciousness in the field of acoustic sensors and actuators. Our compliments to the chapters that have reported in with their latest activities. Congratulations to Dr. Fujitsu for being honored by the Emperor of Japan. We welcome our new members to the society. The standards committees are making progress as time permits. This issue includes the latest revision to the UFFC-S Bylaws recently approved by the Administrative Committee. Take time to look them over and pass on any comments to the AdCom.

It is not too early to be thinking about Fellow nominations. You can secure packets from IEEE sometime this December. Also Roger Tancrell, our Awards Chair, has prepared some background information to assist in the process. Contact him at r.tancrell@ieee.org. Also to remind you that Roger and Mack Breazeale are looking for Achievement Award and Distinguished Lecturer nominations, a convenient form has been enclosed.

Don't forget to invite our Distinguished Lecturer, Professor William D. O'Brien Jr. for a presentation. His biography and abstract appeared in the spring newsletter and also can be found in the July issue of the Transactions.

I trust you will enjoy this issue of the newsletter. Special thanks go to Robin Edwards and her coworkers at IEEE Magazines/Newsletters for final assembly of this newsletter edition. The invitation is always there to any of our members to submit articles, photographs, and information which will be of interest to our readership. The next deadline falls around March 15, 1998, for the spring newsletter. The easiest way to communicate is email if you have it available. My address is f.hickernell@ieee.org. I have a fax- (602) 441-7714, a phone- (602) 441-2923, and an address-Motorola SSTG, MSH1330, 8201 E. McDowell, Scottsdale, AZ 85252. I look forward to hearing from you.

Fred Hickernell
Newsletter Editor



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