A Voice for 26,000 Life Members
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As I was thinking about a suitable greeting for this article, I found this quote by Winston Churchill: “We make a living by what we get, but we make a life by what we give.”

There are over 26,000 Life Members (LMs), and I believe we have been very fortunate to make a living by developing the technologies that have improved lives throughout the world. I feel that the public may have underappreciated our efforts, which is why I’m glad that the IEEE has launched a public visibility initiative. The goal of this initiative is to increase the visibility of the IEEE and promote public understanding of how engineering, computing, and technology benefit humanity.

I would encourage you to view the “IEEE: One Voice” video, which was made as part of the larger IEEE Public Visibility Initiative. This video aims to make those in the technology community proud to be part of the IEEE and to encourage those who are not affiliated with the IEEE to feel good about the contributions of technology to society. The video is available on the IEEE Web site, at http://www.ieee.org/go/brand_videos.

Daytona Section—Small Radio Telescope. In keeping with the theme of the quote by Winston Churchill, I would like to comment on the efforts of the IEEE Daytona Section LM Affinity Group. In February 2009, the Life Members Committee (LMC) members and Regional Life Members Coordinators visited the Daytona Section in Daytona, Florida, USA. We had the pleasure of meeting with the volunteers who are giving back to the community by constructing a small radio telescope (SRT) with funds donated by the IEEE Life Members Fund (LMF). The telescope has been constructed and will be placed in the Museum of Arts & Sciences in Daytona Beach. It is expected that approximately 8,000 students and 12,000 adults will view the telescope as part of the museum’s planetarium program. Once operational, the SRT will be used to conduct radio astronomy experiments and as a teaching tool for students and adults in the Daytona area. I congratulate the Daytona Section LM Affinity Group for their hard work and hope that their efforts will be an example for other LM affinity groups.

Grants Awards by the IEEE LMC. We are very fortunate that IEEE LMs continue to contribute to the IEEE LMF. Thank you for your continued support. The LMF/LMC grant proposal submission process has been consolidated with the IEEE Foundation process. This ensures that more proposals of a greater variety are submitted to the LMC for consideration. During our February meeting, the LMC approved five grant requests, totaling over US$42,000. Please see the article on page 2 for more information.

LM Technology Travel/Tours. The LMC feels that IEEE LMs would be interested in participating in an IEEE-sponsored travel program. Each tour will focus on an IEEE historical milestone or similar attraction of interest to IEEE LMs. We are currently working on a Panama Canal tour. I would like to thank Ted Bickart, LMC member, for his efforts in organizing and developing this program. Please see his article on page 2 for more information.

LM Affinity Groups. The LMC has an ongoing effort to establish LM affinity groups to encourage LMs to take an active part in local IEEE Sections. A total of 57 groups have been formed. I would like to specifically congratulate the following Sections for forming an LM affinity group in 2009:

- Region 1 — New Hampshire Section
- Region 3 — Orlando Section
- Region 6 — Los Alamos/Northern New Mexico Section

continued on page 5
IEEE Technical Tour to Cruise Panama Canal in 2010

The Panama Canal project included one of the largest and most important electrical installations in the world, early in the 20th century. The use of 1,022 electric motors with an installed capacity of 28,200 horsepower largely replaced the commonly used steam and water powered equipment. Reliability and safety were also engineered into the innovative electrical control system, enabling remote lock operation from a central location.

Congratulations to the Outstanding Life Member Affinity Groups

The IEEE Life Members Committee (LMC) is pleased to announce the inaugural list of Outstanding Life Member (LM) Affinity Groups. The Outstanding LM Affinity Groups were identified based on the number of LM events held, the average attendance at those events, and the number of contributors to the IEEE Life Members Fund (LMF) in 2008. As a total, the groups noted below conducted 76 events, with more than 630 participants and members within their Sections contributing more than $582,650.

<table>
<thead>
<tr>
<th>Region</th>
<th>Chair of LM Group</th>
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<tr>
<td>Boston</td>
<td>E. Abuelsouf</td>
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<tr>
<td>New York</td>
<td>M.F. Wilson</td>
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<tr>
<td>Cedar Rapids</td>
<td>B.T. Vincent</td>
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<tr>
<td>Dallas</td>
<td>J.F. Malm</td>
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<tr>
<td>New Orleans</td>
<td>Joe Watson</td>
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<tr>
<td>Oklahoma City</td>
<td>Jerry E. Knotts</td>
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<td>Buenos Aires</td>
<td>Villal Joan</td>
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<tr>
<td>Kingston</td>
<td>Roland J. Saam</td>
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<tr>
<td>United Kingdom and the Republic of Ireland</td>
<td>Agustin Leon</td>
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<tr>
<td>Chile</td>
<td>Alfonso Perez-Gama</td>
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<td>Colombia</td>
<td>F.L. Perez-Bracetti</td>
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<td>Puerto Rico and the Caribbean</td>
<td>Jose Roberto Lacerda</td>
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<tr>
<td>South Brazil</td>
<td>Pravin B. Parikh</td>
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<td>Bombay</td>
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The LMC believes that keeping LMs active and engaged is a key component to the success of the IEEE in local IEEE activities. This engagement can be conducted through the local Section and/or Technical Chapter but the LMC believes that it having a local LM Affinity Group is a more effective method in keeping LMs active. If your Section doesn't have an LM Affinity Group, you are encouraged to discuss the formation of a group with your Section leadership. In 2008, IEEE LM Affinity Groups conducted over 150 events, which included more than 1,000,000 participants.

Future issues of the IEEE Life Members Newsletter will highlight specific activities of Outstanding LM Affinity Groups. The IEEE LMC would like to congratulate each Outstanding LM Affinity Group for its efforts.
IEEE Foundation Renames Planned Giving Donor Recognition Group

The IEEE Foundation is pleased to announce that as of January 1, 2008, the Goldsmith Society will now be known as the IEEE Goldsmith Legacy Legacy. The planned giving donor recognition group was renamed to make it more prominent and better align with the goals of the IEEE. Members of the IEEE Goldsmith Legacy League are very generous. They build for tomorrow by leaving legacy gifts to benefit future generations of engineers. Many members of the League have included a bequest in their wills or trusts documents. Some have named the IEEE Foundation as beneficiary of a life insurance policy, retirement plan, or charitable remainder trust. Others have made outright gifts from their IRA during their lifetime.

The League is named for Alfred N. and Gertrude Goldsmith in recognition of their extraordinary commitment to the IEEE. During his lifetime, Alfred N. Goldsmith made a significant personal commitment to furthering the goals of the engineering profession. He was one of the founders of the Institute of Radio Engineers (IRE), a precursor society of the IEEE, editor of the Proceedings of the IRE for 42 years, and a member of the IRE board for 51 years. He perpetuated his commitment to the profession after his death by providing a significant bequest to the IEEE Foundation through his estate. Gertrude honored her husband's legacy in the engineering community by leaving a generous portion of her estate to the IEEE Foundation. Together, Alfred N. and Gertrude Goldsmith's philanthropic vision seeded the IEEE Foundation's ability to support the IEEE’s mission.

As was in the past, members of the IEEE Goldsmith Legacy League will receive the IEEE Foundation Focus newsletter and are recognized annually in the Honor Roll of Donors. By joining, the benefits offered to this special group have been expanded to include a keepsake coin, certificate of membership, invitation to attend the annual IEEE Honors Ceremony, recognition on the “Wall of Fame,” and eligibility to receive personal estate and tax planning information. To join or learn how you can make a planned gift, contact the IEEE Development Office at +1 732 562 3800, or by e-mail at donate@ieee.org.

IEEE Foundation Announces New Humanitarian Technology Fund

The IEEE Foundation has established a new fund that will provide unique opportunities for engineers to make a difference to people all over the world, especially in developing areas. The Humanitarian Technology Fund was created to support the development and application of innovative uses of technology for humanitarian causes and to support the IEEE’s activities in working to benefit humanity. In regions where the world is sparse and the need is for high technology to help solve problems, the technology, power, and communication, the IEEE has an opportunity to serve people and improve their quality of life.

Through the awarding of grants, the Humanitarian Technology Fund supports projects that provide technological solutions to problems including health services, disaster relief, microfinancing, interactions with government, disaster relief, economic development, clean water, energy, and communication. Grants may be awarded to IEEE units or outside organizations.

This fund is important in aiding the transfer of technology to those who need it, and it has attracted the support of the IEEE president and two IEEE past presidents. The 1984 IEEE President and current IEEE Foundation President Richard (Dick) G. Gowen seeded the fund along with John R. Vieg, IEEE president, and Lewis M. Terman, IEEE past president. Many IEEE members have also contributed to the fund.

"This fund will give IEEE members the opportunity to receive funding to bring together industry and the needs of the developing world," said Gowen. "I was a proponent for the establishment of this fund recognizing that IEEE has a significant opportunity to assist and bring necessary technology to people in developing areas and improve their existence, which is part of IEEE's mission."

"I am honored to be a founding member of the fund," said G. J. and retired category. This policy includes Society dues and subscriptions to IEEE Society magazines and journals not covered by the basic Society dues or IEEE-Standards Association dues. As an LM, you must maintain membership in a Society for five or more years, you are eligible to maintain this membership without payment, but no discount is offered on subscriptions not covered under the basic society dues. I would like to close this article with a quote attributed to Norman Vincent Peale: 'Live your life age for the past.' I wish you good health and happiness.
Coupler Guys and a Thalamus

I had the privilege of carpooling to the University of Toronto, where I was associate chair of the engineering science program, with my neighbor, Dr. L. Og. Organ, of the Faculty of Medicine. His specialty involved research in electrophysiology as it applied to understanding its potential for the treatment of pain, and he was the first to demonstrate the use of a pacemaker being introduced in 1973 to Dr. R. Tasker, an eminent neurosurgeon and head of the Surgical and Intensive Care Clinic at Toronto General Hospital. Dr. Tasker, assisted by Dr. Og. Organ, was experimenting with treatment by stereotaxic surgery for the control of involuntary movements as in Parkinson’s and for the relief of intractable pain. This involved destroying plaques or producing with precision a lesion deep in the brain to control the problem. At that time they employed a frustratingly slow, risky, and delayed two-stage technique for 5-D mapping of the patient’s thalamus by a process of in situ electrostimulation and observation of the patient’s responses. This entry through the skull and the stimulation session was performed on day one using a lozeng-shaped frame attached to the patient’s skull for spatial reference. The second stage of remedial surgery was performed the following day. In the interim, the patient’s skull had to bear four stainless steel anchors and bandages covering the open bore holes while the surgical team labored at making precise maps of the patient’s thalamus. I found this time consuming and suggested that a computerized solution could be developed with the goal of accomplishing the same using the data collection, analysis, and presentation as operative templates in one session.

With the assistance of one of my fourth-year students, Peter Hawrylhyn, a computer-based method was devised for obtaining an almost real-time 3-D map that could be employed immediately by the surgeon. During the stimulation session, the patient sat at my portable computer terminal in the operating room and input thalamic landmarks and patient responses through an acoustic telephone coupler, connected back to the main IBM System 750/165 computer at the university. There the computer morphed a standardized atlas map of the thalamus along with observed responses into the coordinate system of the patient, referenced to the surgical Leksell frame screwed to the patient’s head. When the output maps appeared on the university’s wide-screen plotter, complete with precisely located figures depicting a variety of responses, a runner tore off the paper and raced back to the operating room, a practice that the computer could then complete its task, confident that he was dealing with a very accurate picture of the thalamus and its diseased areas in three dimensions. This may have been the first use of computer-assisted surgery in Toronto and resulted in a lot of publicity as well as publication in a leading journal of neurosurgery.

Thirty years later I was in Seattle and happened across a PBS portrayal of stereotaxic surgery. The procedure was now routinely employed in primary care centers everywhere, aided by a whole new array of imaging techniques. There was not an acoustic coupler in sight.

Jarred Memory

Another time in 1958, Health Physics started collecting air sampling using an aluminum-coated golf card and used a small model engine with filter paper over the carburetor intake. Unfortunately, there was always blowout in Fort Worth, and early on in the tests it blew the di- gitable into our 13.5 KV power line. The balloon was punctured, and the helium spewing out wrapped the line around the tower several times leading to a loss of power for some time.

The tale on highlighting shortcomings of the “Flavor of the Week” had me of a time in 1974 at the Sherman Texas Instruments plant where the data for the voltage to the gas discharge tube had to be reduced, which had the side effect of reducing the IC driv- er’s power consumption rate from 3% to 10%.

“Search and Destroy” reminded me of a time in 1964 when I was doing semiconductor materials research. It seems that a lab project to build and outfit a bay to calibrate the HP radio reception was under the direction of Dr. O.G. “Mike” Vidalir. We were analyzing HP (shortwave) radio propagation during the sumptuous minimum and thus the project was called “Minisput Malta.”

The (British) Royal Army had used us for our equipment in an old powdery magazine at Fort Rimington, which was built in 1957 with a 38-foot wall and a dry moat, cut into the native lime- stone, surrounded three sides of the fort. The fourth side was a cliff, part of the escarpment that crosses the island. Several abandoned gun emplacements and a sound system for the cliff edge. The fort was then part of a Royal Army Signals “torn tower” tele- printer relay station. We had space for our HP beam antennas as well as a very effective sloping-V antenna that dropped over the cliff edge down to a farm’s field. It was an excellent site for a core to举行 radio reception.

Our equipment consisted of a num- ber of Collins 755-1 HF receivers and a Sanborn-Ampex FM tape recorder. On FM radio we had a large 240-240 V transformer to operate our equipment. The power was from the generator, as there was no power, though some ran a bit hotter. The tape recorder deck was an Ampex 350 unit. The recorder was special with a 16-inch drum and able to operate at 50 Hz, since the ac line frequency determined the tape motor speed. On this end of the project, as it was all of the equipment, returned to Stanford. The Radioscience Lab had produced an approximately 1000-pound equipment pool. We needed the tape recorder, and I was requested to have it pulled to operate on 60 Hz. We took some time to find the proper department at Ampex that knew how to do it.

Serendipity

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Retro-Style Housing is for the Birds

In the early days of laser communica- tion, we were setting up a laser communication demonstration at the Centre in Montreal at MBP Technologies, a spin off of RCA Laboratories. The purpose of the project was to run this experiment for a period of about six months, which would allow us to evaluate the possible weather conditions that Montreal could throw at us including all kinds of weather that we could that we have learned to love. The laser links consisted of a CO2 laser running at 10.6 µ and a HeNe- laser running at 6328. Comparative attenuation constants at those two wavelengths could then be obtained along with statistical data. The actual link originated from our lab and ended in the city of Montreal in a weather tower at a McGill University campus. The total link had a length of about 1 km. The receivers were situated back at the lab.

While building the link we tried to anticipate all sorts of problems such as self calibration that would be consistent over the duration of the experiment and the effect of the sun on the retro-reflector, snow deposition, and dew formation. We mounted the retro inside a metal tube to act as a baffle to protect from the direct rays of the sun, and we heated the tube chamber to keep the temperature above freezing and dew point. We actually started a few trial runs in the fall and went through the debugging phase and calibration procedures and were satisfied with our results.

One morning, however, looking at the results of the experiment, we were surprised to notice a strong attenuation at both wavelengths that started at about sunset and ended early in the morning before we got to work. We knew that the previous evening and night were uneventful in terms of the weather. Our first conclusion was that we had an equipment malfunction. We checked and rechecked and could not find anything wrong. We were afraid that it was one of those intermittent faults that are often difficult to pinpoint. We hoped that this was a one-time incident. Unfortunately, the next day had a repeat performance. We knew that this time we had to find the cause. We installed a tellacon at the point of the retro-reflector and decided to stay in the lab that evening until the attenuation event that we now anticipated would start. At the same time, we would observe the retro-reflectors through the telescope.

As the sun was setting, we noticed that birds were flying around the tower. We did not anticipate that a bird was going to enter the retro tube and not come out with all bird droppings. The attenuation was increasing in step. The mystery was solved. Come to think of it, what better way for a bird to spend the night than to cozy up in a heated tube when the temperature was falling at sunset in autumn. We came back next day early at sunrise to watch the reverse events taking place with the birds departing. It was only a matter of a presumably busy bird day. Needless to say that we quickly solved the problem and were soon back on track in front of the retro, with some regrets that it would leave the birds out in the cold.

Armand Wakseberg, LISM
Montreal, Canada

Clint Gilliland, LISM
Menlo Park, CA
Our Mailing List

The IEEE Life Members Newsletter is distributed to Life Members and those who are not Life Members but are 1) IEEE members 65 years and older, 2) retired IEEE members aged 62–64, and 3) members of special boards and committees.

Submitting Articles

We welcome articles for this newsletter. In particular, we seek articles about projects that are initiated at the Section and Region level by Life Members as well as "Tales from the Vault," which should focus on novel or interesting technical issues. The suggested length for "Tales from the Vault" submissions is 500 words.

Acronyms should be completely identified once. Reference dates (years) also should be included. Editing, including for length, may occur. If you wish to discuss a story idea before hand, you may contact Craig Causer, managing editor, by e-mail at lm-newsletter@ieee.org. The deadline to submit an article for possible inclusion in the next issue is 16 October 2009. Please include your Life grade, town, state, country, phone number, member number, and/or an e-mail address with your piece.

Stopping IEEE Services

Those Life Members who wish to have all services stopped should contact IEEE Member Services. If you are doing so at the request of someone else, submit the member's name, number, grade, address, change date and your connection, e.g., Section Chair.

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Qualifying for Life Member Status

To qualify as a Life Member, an IEEE Member must be at least 65 years old, and the sum of the member’s age and the number of years of paid membership effective the following January must equal or exceed 100 years.

Have Questions, Ideas or Problems?

Have questions regarding your Life Member status? Contact Member Services. Got something else you need to ask or discuss? E-mail the Life Members Committee or its staff at life-members@ieee.org, or call: +1 732 562 5501, or fax: +1 732 463 3657.