

IEEE life members newsletter



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An Affinity for Life Members

Joe Cruz, Chair, IEEE Life Members Committee

On 1 January 2014, 2,528 IEEE Members became Life Members (LMs), retaining their previous membership grades. Thus Fellows became Life Fellows (LFs) and Senior Members became Life Senior Members (LSMs). Of the newly elevated Members 1,818 were LMs, 521 were LSMs, and 189 were LFs. This brings the total number of LMs to 30,633. I congratulate our new LMs throughout the



**IEEE Life Members
Committee Chair
Joe Cruz**

world. If you are a new LM, IEEE recognizes your many years of professional work and your many years of membership and engagement in IEEE. You are joining the ranks of other IEEE LMs throughout the world who have attained this status before you, in your Sections, Regions, and Societies.

We encourage you to continue your engagement with IEEE. If you belong to a medium- to large-sized Section, it is likely that there is a Life Members Affinity Group (LMAG) in your section. If there is no LMAG, and if you know a few LMs in your section, inquire from your Section chair how you might create one. Write to me if you wish, at jbcruz@ieee.org. We can connect you with your regional LM coordinator who can provide you with suggestions on possible initial activities. Some LMAGs get together on a regular basis, with a guest speaker, and have lunch together.

Although the original purpose of forming affinity groups like the LMAG, IEEE Women in Engineering, and IEEE Young Professionals is to band together IEEE Members who have common interests, the meetings and other activities of the groups might involve IEEE

Members outside of the affinity groups. For example, members of an LMAG might want to interact with IEEE Members who are just starting their careers so as to explore mentoring relationships. LMs have an opportunity to tap their substantial experience in dealing with peers, subordinates, and superiors and offer wisdom to their younger IEEE colleagues in how to hone their interpersonal

skills. Share your success stories with those who need heroes and role models.

In geographical locations where there are nearby colleges or universities where engineering is offered, there is yet another opportunity for mentoring members of IEEE Student Branches. These students are the future active Members of IEEE. There is an even greater need to connect with the precollege students who might have aptitudes for careers in engineering who might choose other paths due to a lack of mentoring. If you influence the career paths of these students, you will experience a great feeling of satisfaction in that you have made a difference in their lives.

IEEE has a committee called the Life Members Committee (LMC), whose members are listed on the final page of this newsletter. It is a joint committee of IEEE and the IEEE Foundation. Among its functions, the LMC provides leadership in the identification of and support to the interests of the LMs in activities of the IEEE. It helps to determine what projects deserve financial support from the Life Members Fund in the IEEE Foundation. LMs are encouraged to contribute to the Life Members Fund.



Granting the Wishes of Worthy Programs

The IEEE Life Members Committee (LMC), a joint committee of the IEEE and the IEEE Foundation, is responsible for the administration of the IEEE Life Members Fund (LMF). In coordination with the IEEE Foundation, the fund supports activities of interest to LMs, potential engineers, and engineering students. It is supported by the generosity of IEEE Members. The IEEE LMF is pleased to announce its monetary support for the following programs:

- **The Next Generation of Engineers (US\$10,500):** SciEnTeK-12 Board members will travel to a minimum of 60 schools within the 13 cities and seven counties in the Southern Arizona region that are not currently participating or requiring assistance in an area of science, technology, engineering, and math (STEM). A priority will be placed on schools in areas of poverty and on underserved populations (such as female and minority students). Student presentations will include hands-on demonstrations of engineering design, scientific principles, forming a hypothesis, following research protocols, modifying prototypes, keeping a log book, controlling and reducing variables, interpreting data, and forming reason-based conclusions. Parents and teachers will receive guidance in meetings on how to use the scientific method or engineering design, their role as a facilitator and mentor, and the Next Generation Science Standards.
- **Discover Milestones of Ukrainian Science (US\$11,000):** The goals of this project are to show the history of Ukrainian science through milestones to the world, help Ukrainian scientists join the world community, and revive the interest of young people in science. The project hopes to form 11 new IEEE Milestones, which will be reminders of the historically significant achievements of Ukrainian science. The IEEE Milestones will help to ensure that these achievements will not be forgotten and inspire scientists to new achievements. Additionally, they will be important for the entire scientific community of Ukraine and the IEEE Members of Ukraine Section.
- **Museo de la Ingeniería Desde la Antigüedad (MIDA) (US\$7,435):** MIDA is a proposal to address the decreasing number of engineering students in Argentina. This program aims to promote engineering careers among young people. MIDA will virtually exhibit ancient devices, with each one visually recreated and associated to short games that enable the attendant to interact with

it in different ways: assembling, disassembling, and studying its components and solving problems specifically created to enhance acquired knowledge during the object studied. The user will also be able to watch videos and read technical and nontechnical texts with descriptions and history of the object.

- **METS Science and Engineering Fair (US\$5,000):** The METS Science and Engineering Fair is an opportunity for students to apply the scientific methods learned within the classroom to conduct independent research. Young scientists and engineers from grades 9–12 will pursue specialized fields of science by working on individualized research projects, both as part of their core curriculum as well as through independent study. These projects will broaden scientific awareness and allow students to delve deeply into areas of special interest, giving them a chance to explore, gather information, think critically, arrive at conclusions, and present ideas in a competitive forum. The fair will provide an excellent training ground for students to sharpen their communication and presentation skills and will also give students a unique opportunity to compete for college scholarships, awards, and other exciting prizes.
- **How It Works–Computer Operation Interactive (US\$6,500):** Oaysis (<http://www.myoaysis.com>) specializes in the creation and integration of educational resources that enhance the learning of middle and high school communities. One of the identified deficient educational key areas relates to lack of STEM skills in the upcoming generation. With the understanding of the computer science field's roots in these four areas, Oaysis is looking to provide a tool that can assist in this gap through its computer operation demonstration module. The demonstration module blends the effective learning techniques from the past while adding technological advancements of present technologies. Oaysis seeks to make a demonstration that is interactive to maintain learning interest. This is accomplished by allowing a user to explore the demonstration while learning at the same time.

To submit a grant application, visit the IEEE Foundation Web Site at www.ieeefoundation.org. To the maximum extent possible, LMs should financially support the LMF. You can make a donation to the LMF online at www.ieee.org/donate.

Life Members Look to Connect with IEEE Leadership at Sections Congress

The IEEE Life Members Committee (LMC) is excited to be a sponsor of IEEE Sections Congress 2014 at the Rai Convention Centre in Amsterdam, The Netherlands, 22–24 August. The LMC is taking full advantage

of this unique opportunity to reach out to the Section leadership and engage them in promoting Life Member (LM) activities locally in their Section. It is also a wonderful venue to share information and ask for feedback about the

IEEE Life Member Fund (LMF) of the IEEE Foundation, the grants it provides, and the programs it supports.

The LMC/LMF will sponsor the Sunday luncheon at Sections Congress. During the luncheon, LMC members will be in attendance to promote the works of the LMF, share available granting opportunities, and encourage other IEEE Members to donate to the fund in support of its activities.

In the main exhibit hall, the LMC will hold learning labs geared toward educating attendees on how to create or enhance their local LM Affinity Groups (LMAGs). Section leadership will learn best practices for providing local activities for LMs and how to create their own LMAG. In the exhibit hall, the LMC/LMF will also host a booth next to our partners, the IEEE Foundation. LM volunteers and IEEE Member and Geographic Activities (MGA) professional staff will be available to discuss all activities related to LMs and the LMF. LMC members welcome this opportunity to directly interact with IEEE Section leaders from around the globe and to exchange ideas on ways to improve opportunities and activities for LMs. The LMC strives to engage all of IEEE's LMs to enhance their membership experience.

IEEE Sections Congress is a triennial event that provides IEEE Section leadership with a priceless opportunity



IEEE Sections Congress 2014 will be held at the RAI Convention Centre in Amsterdam, The Netherlands. (Image courtesy of Wikimedia Commons/Adam Kliczek.)

to impact the future of the IEEE. Leadership will be able to attend training programs, network with other Section leadership, and develop recommendations for the future of IEEE.

Europe the Destination for 2015 IEEE Life Members Technical Tour

The IEEE Life Members Committee (LMC) over the last couple of years has organized technology-themed tours centered around IEEE Milestones. The LMC is currently planning the next tour for May 2015 in Europe. The tour will include stops in Germany, France, and Switzerland and highlight IEEE Milestones and other significant

technological sites/events, as well as related museums and cultural sites.

Details for the tour including itinerary, dates, and registration will be posted as they become available. Please visit the LMC Technical Tour Web site at www.ieee.org/lmtour. If you have any questions about the tour, please contact lm-tours@ieee.org.

It's Here—The New IEEE Foundation Web Site

The IEEE Foundation is proud to announce the release of our new Web site, www.ieeefoundation.org, designed with a fresh new look and user-friendly navigation. Our goal was to build a visually appealing, interesting, and simple to navigate site that delivers a best-in-class user experience, increases operational efficiencies, and creates new opportunities for member and user engagement, now and into the future.

You will quickly find the contents you need, including up-to-date news, success stories that share the impact of donor support, access to Facebook as a forum for discussion, and donor recognition group benefits. Just as before, users may make online donations, but the process is even more organized and personalized. Want to make a donation with personal sentiment? The new “eCard”

feature allows you to send a customized message or let someone know you made a donation as a tribute to him/her or his/her recent accomplishment. The new “My Account” area allows donors to review their own giving history and obtain and print receipts for tax purposes. All of the features of the Web site will be just as easy to navigate from the palm of your hand, thanks to the responsive design optimized for handheld devices.

The new site, scheduled to launch at the end of May, represents a complete overhaul from the previous Web site. This is no longer just a Web site but an all-inclusive solution for efficient, two-way communication.

We hope that you will enjoy browsing our new site, www.ieeefoundation.org, finding more options and information each time, and that it will be yet another tool for strengthening our relationship.

Be Forever Generous: Leave a Bequest to the IEEE Life Members Fund of the IEEE Foundation

Did IEEE play a role in your life story? If the answer is yes, a bequest to the IEEE Life Members Fund of the IEEE Foundation is an excellent way to pay it forward to the next generation of engineers.

Bequests to the IEEE Life Members Fund of the IEEE Foundation should be worded as follows:

I give the sum of \$_____ [or all (or stated percentage) of the rest, residue, and remainder of my estate] to the IEEE Foundation, Incorporated, New

York, NY, USA for the benefit of the IEEE Life Members Fund.

Notify the IEEE Foundation of your intentions to leave a bequest in your will or trust and you will be invited to join the elite legacy giving donor recognition group—the **IEEE Goldsmith Legacy League** and be *Forever Generous*. Donors may choose to remain anonymous.

For more information visit www.ieeefoundation.org, contact Karen Galuchie in the IEEE Development Office at +1 732 562 3860, or e-mail donate@ieee.org.

IEEE Life Members Fund 2013 Honor Roll of Donors

The IEEE Life Members Committee (LMC) gratefully recognizes the IEEE Members and other friends who have directed their donation to the IEEE Life Members Fund of the IEEE Foundation. Those names are listed here. Your generosity enables the IEEE LMC to support philanthropic activities that encourage students and young electrical engineers to pursue careers in engineering, investigate the history of electrical engineering, and represent the interests of IEEE LMs or similarly mature Members. All listings acknowledge gifts of US\$100 or more made during the calendar year 2013 specifically to the IEEE LMs Fund of the IEEE Foundation. A full listing of donors who gave US\$100 or more to any of the 150+ IEEE Foundation funds appears in the IEEE Foundation's Honor Roll of Donors, which is published in July.

The IEEE Development Office makes every effort to ensure the accuracy of the listing, including the proper acknowledgment of gifts and correct spelling. Please notify us of omissions or errors by sending an e-mail to donate@ieee.org or calling +1 732 465 5871.

The IEEE LMC extends a special thank you to those donors who are not included here.

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Patrick E. Ferguson, LM
Paul M. Ferguson, LSM
Nils C. Fernelius, LSM
James A. Ferner, LSM
Melvin D. Field, LM
Eugene P. Finger, LSM
Fred I. Finkelstein, LM
William L. Firestone, LF
S.M. Fischer, LM
David A. Fisher, LSM
Jerry W. Fitzsimmons, LM
Dr. Philip J. Fleming, LM
Irving L. Fletcher, LM
Gordon M. Floyd, LM
Robert S. Flumach, LM
Richard P. Fogarty, LSM
Kirby W. Fong, LM
Harold C. Forst, LM
Jerry G. Fossum, LF
Charles A. Fowler, LF
Ernest A. Franke, LSM
Robert Frias, LM
R. James Fritsch, LSM
Charles H. Fritz, LM
Toshitaka Fujisaki, LM
Yasuhiro Fujita, M
Hideo Fujiwara, LF
Kiyoshi Fukahori, LM
Hatsuaki Fukui, LF
Akira Fukumoto, LSM
Hak-Ming Fung, LSM
Yoji Furuhamo, LF
Stanley Gaglione, LM
L.E. Gagne, LM
Louis M. Galie, LM
Chester E. Gall, LM
Homer C. Galloway, LM
James H. Galloway, LSM
Luis Gandia, LSM
Thomas V. Garceau, LSM
S.R. Gardner, LM
James R. Garner, LM
Dennis J. Gausshell, LSM
H. Paul Gay, LM
Hans P. Geering, LF
Lester A. Gerhardt, LF
David W. Gillespie, LSM
Burhl Gilpin, LM
Benjamin Glatt, LM
Aloys A. Godar, LM
Richard E. Godfrey, LM
Robert C. Goessman, LM
Aaron J. Goldberg, LM

August Golden, LM
Richard L. Goldman, LM
Julius L. Goldstein, LSM
Jack Golin, LM
Mario J. Gonzalez, Jr., LF
Kenneth R. Goodwin, Jr., LSM
Brian E.B. Gott, LF
Richard J. Gottardi, LM
John K. Gotwals, LM
L.E. Gough, LM
Werner Graf, LM
John J. Grainger, LF
Richard W. Granville, Jr., LM
Thomas Grau, LSM
Gary D. Gray, LSM
Geoffrey D. Green, LM
J.H. Green, LM
J.P. Green, Jr., LM
Vincent J. Green, Jr., LM
Edward M. Gregerman, LM
Donald G. Gregory, LSM
Randall V. Gressang, LSM
Walter W. Griffin, LSM
Leonard L. Grigsby, LF
Larry B. Grim, LM
Carl E. Grindle, LSM
Chris Gross, LM
Roger Grubic, LSM
John A. Guevara, LM
Yuri V. Gulyaev, LF
Paul J. Gund, LM
David Gundry, LM
John Gutman, I
Harold Haake, LSM
Roderic H. Haake, LM
H.K. Haase, LM
Rolland R. Hackbart, LM
Jerrier A. Haddad, LF
James J. Hagner, LSM
Jay B. Haines, LM
Fred M. Half, LM
Harold R. Hall, LM
Terry H. Hamada, LM
Masanao Hamai, LM
Charles F. Hammer, LM
Dan W. Hammerstrom, LF
Ronald M. Hamrah, LSM
Charles L. Hand, LM
David G. Hanna, LM
James P. Hansen, LM
H.A. Hanson, LM
Shya Hao, LM
Tatsuya Harada, LF
Russell C. Harbaugh, Jr., LM
Harold E. Harden, LM
Robert Harper, LM
Robert V. Harper, LM
James E. Harris, LM
Roy E. Hart, LSM
Robert L. Hartman, LF
David P. Hartmann, LSM
Ryusuke Hasegawa, LF
Tatsuro Hasegawa, LF
Masao Hashiguchi, LM
Asif M. Hassan, LSM
Sameer S. Hassan, LSM
Edwin B. Hassler, Jr., LM
Mack A. Hataway, LM
Anthony V. Hattier, LM
Shuzo Hattori, LM
George R. Haus, LM
George M. Hausman, LM
D.L. Hawkins, LM
Richard A. Hays, LM
Richard L. Healer, LM

Herbert Hecht, LSM
Arthur J. Heidrich, LM
Herman M. Heinemann, LM
Harold C. Held, LSM
John W. Held, LM
Kenneth I. Heldebrandt, LM
Duane Helmer, LM
John C. Hempstead, LSM
H.A. Hennen, LM
John H. Hennings, LM
Mogens Henriksen, LSM
Robert O. Herendeen, LM
John M. Herman, III, LM
J.V. Herosy, LM
Denver W. Herr, LM
John P. Herron, LM
Gary A. Heuston, LM
Arthur Heyman, LM
Arthur N. Hicks, II, LM
Richard A. Hieber, LM
John A. Higgins, LF
Sterling F. Higgins, LM
Walter T. Higgins, Jr., LM
Douglas W. Hill, LSM
Larry C. Hill, LM
Peter C.J. Hill, LSM
Joseph S. Hills, LM
Narain and Joyce Hingorani, LF
John L. Hinkle, LM
Kazuhiro Hirasawa, LF
Khalaf H. Hirmina, LSM
David W. Hogan, LM
Dieter B. Hohmann, LM
Egon R. Hollm, LSM
John D. Holm, LM
Eric Holme, LM
Dwight P. Holmes, LM
J.F. Holmes, LM
John D. Holodak, LM
Raymond H. Holstead, LSM
William G. Holt, LM
Kiyoo Hooshiar, LSM
Duong B. Hop, LM
Jun Horikoshi, LM
Hans P. Horisberger, LM
Kazuo Horiuchi, LF
Joh D. Horrocks, LM
Nozomu Hoshimiya, LF
R.W. Houskamp, LM
Dean D. Howard, LF
Robert P. Howard, LM
Jones V. Howell, Jr., LM
Robert E. Howell, LM
Raphael Hoyda, LM
Richard A. Hrusovsky, LM
Joseph Huang, I
William J. Huck, Jr., LM
Edward W. Hudson, LM
Mark V. Hughes, LSM
Robert Hughes, LM
Harold W. Hulst, LM
J.E. Humbert, LM
John E. Hunter, LSM
Michael B. Hunter, LM
James J. Hurny, LSM
John Hus, LSM
Robert L. Hutchins, LSM
Kenji Ikeda, LM
Hiroyuki Imai, LM
Masaaki Imamura, LSM
Barry D. Inglis, LF
Hisach Irie, LM
Donald T. Irvine, LM
David J. Irwin, LM
J. David Irwin, LF

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Elmer L. Isaac, LM
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Charles E. Isbell, LM
Kokichi Ishibitsu, LM
Tomo Ishikawa, LSM
Katsuyoshi Ito, LM
Tatsuo Itoh, LF
Nick Itines, LM
Ferdo Ivanek, LF
Terje Iversen, LM
Mo Iwama, LSM
Robert W. Jack, LSM
Bruce B. Jackson, LM
James R. Jackson, LM
George T. Jacobi, LSM
James E. Jacobson, LM
Robert A. Jacobson, LM
Tyland L. Jacobson, LM
Cecelia Jankowski, SM
Donald L. Jans, LSM
William K. Janz, LM
Fred R. Jarratt, LM
Alexander F. Jaszek, LM
Herndon H. Jenkins, LM
William C. Jenkins, LM
William B. Jervis, LM
Peter A. Johanson, LM
Harold F. John, LSM
Dwight A. Johnson, LM
Edward L. Johnson, LM
Mark H. Johnson, LM
Richard A. Johnson, LSM
Walter A. Johnson, LF
George I. Johnston, LSM
Allan S. Jones, LSM
Colin M. Jones, LF
G.A. Jones, LSM
Katharine J. Jones, LM
Merrill C. Jones, LM
Russ Jones, LM
Thomas D. Jones, Jr., LM
M.H. Jordan, LM
Erik Jorgensen, LM
Edward J. Joscelyn, LM
Aravind K. Joshi, LF
Donald E. Joslyn, LSM
Jerry I. Jost, LM
Frank E. Jump, LM
Adolph J. Kachler, LSM
Masaichi Kajiwara, LSM
Carroll F. Kane, LSM
Robert P. Kappler, LSM
Fred G. Karkalik, LSM
Lars B. Karle, LM
E. Karpinski, LM
Paul F. Karshis, LM
Akinobu Kasami, LF
Hiromitsu Kashiwagi, LM
John G. Kassakian, LF
Thomas J. Kausek, LM
Haruo Kawahara, LF
Carl M. Kawauchi, LM
Shigeo Kazama, LSM
Walter R. Keevil, LM
Fred R. Keith, Jr., LM
David J. Kellem, LM
Francis W. Keller, LM
Larry E. Keller, LM
William R. Kelley, LM
Kenneth M. Kempner, LSM
Feltus Kennedy, LM
Lawrence E. Kerr, LM
Joel R. Kesler, LSM

Thomas J. Kesolits, LSM
Otto Kessler, LM
Mohammed A. Khan, LM
Yuri Khersonsky, LSM
Henry K. Khoo, LSM
E.C. Khu, LM
Dallas L. Kibbe, LSM
Marshall C. Kidd, LSM
Donald J. Kienast, LSM
E.G. (Ad) Kiener, LF
Donald W. Kilpatrick, LM
John N. Kim, LM
David A. King, LM
Denis J. King, LSM
James D. King, LSM
John H. King, Jr., LM
Marsh B. King, I
Russell C. King, LM
William P. King, LSM
Wilson K. Kinkead, LM
Russell Kirby, Jr., LM
George M. Kirkpatrick, LF
John A. Kise, LM
Peter E. Kise, LM
Harris H. Kitamura, LM
Martin S. Klemes, LM
John A. Klobuchar, LF
Frank J. Kloht, LSM
D.R. Klose, LM
Martin S. Klotzbach, Jr., LSM
Susumu Kobayashi, LM
V. Prasad Kodali*, LF
R.A. Koelzer, LM
Henricus Koeman, LSM
Harlen N. Koen, LM
J.I. Koeper, LM
George E. Koleszar, LM
H.F. Kongabel, LM
Robert J. Kost, LM
Charles J. Kovarik, LSM
Richard A. Kowalski, LSM
Walter J. Kozak, LM
Taisaku Kozuma, LSM
George D. Kraft, LM
Paul C. Krause, LF
Emil Krenn, LM
Walter F. Krolkowski, LM
Gregory A. Kromholtz, M
John C. Kroon, LSM
Robert J. Krueger, LM
Clarence K. Kubo, LM
Paul A. Kuckein, LM
Chandra M. Kudsia, LF
Louis H. Kurkjian, LSM
Jerome I. Kurshan, LSM
Luther W. Kurtz, Jr., LSM
Joel S. Kvitky, LM
Pang C. Kwong, LM
Bruce Lager, LM
Hungchi Lai, LM
H.R. Lamberth, LM
Dennis W. Lamont, LSM
Paolo Lampariello, LF
Edward J. Lancevich, LM
Louis J. Lanzerotti, LF
Wallace E. Larimore, LM
Almon E. Larsh, Jr., LSM
John D. Larson, LF
Martin E. Larson, LM
Richard L. Larson, LM
Bhagawandas P. Lathi, LF
George T. Laughlin, II, LSM
Theodore Lavoot, LM
Larry G. Layman, LM
Howard H. Leach, Jr., LSM

John R. Leary, LM
Richard A. Leary, LM
Richard C. Lee, LM
Song P. Lee, LM
Russell J. Lefevre, LF
Warren K. Legler, LM
Gordon A. Leiter, LM
Dan P. Leonida, LM
Richard A. Lerche, LM
Harry Letaw, Jr., LSM
M.E. Levi, LM
Robert E. Levin, LSM
George K. Lewis, LM
Glyn J. Lewis, LM
Richard E. Lewis, LM
J.F. Libbe, LM
Zvie Liberman, LSM
Alberto S. Licup, LM
Antonio L. Lim, LM
Teong C. Lim, LSM
Chin-Huang Lin, LM
David C. Lincoln, LM
M.S. Lindberg, Jr., LM
W.J. Lindblad, LSM
Philip E. Lindquist, LM
David D. Lindsey, LSM
Fuyun Ling, LF
Duane P. Lingafelter, LM
John C. Linz, LM
Michael S. Liu, LSM
Ming T. Liu, LF
Kenneth C. Lockwood, LM
John J. Lomax, LM
L.R. Lombardo, LM
Alfred R. Lopez, LF
Jean-Francois Loude, LSM
Daniel J. Love, LF
Paul Lovecchio, LM
Lester H. Lowe, Jr., LSM
Frank E. Lowther, LSM
Albert R. Lubarsky, LSM
Fabrizio Luccio, LF
Louis A. Luceri*, LSM
Robert A. Ludtke, LM
Edgar J. Luecke, LSM
James R. Lusby, LM
G.J. Luszczek, Jr., LM
Kevin B. Luxford, LM
Peter B. Lyons, LM
Gene H.C. Mach, LM
M.L. MacMedan, LM
Walter J. Macomber, LM
J.C. Maender, LM
Frank J. Maguire, LM
Ernest A. Magyar, LM
S. Mahanti, LSM
Rowdan K. Maharaj, LM
Tsugio Makimoto, LF
William T. Malanczuk, LM
Charles G. Mallery, LSM
William T. Maloney, LSM
George A. Mann, LM
John A. Mann, LM
Salvatore J. Manno, LM
Mohamed Mansour, LF
James R. Manuel, LM
Louis J. Maroglio, LM
James T. Marrs, LM
Alan H. Marshak, LF
Richard O. Martin, LSM
Robert W. Martin, LM
Tom A. Martin, LM
William L. Martino, LM
Matthew S. Mashikian, LF
Samuel H. Maslak, LM

Vukota Mastilovic, LSM
Hiroo Masuda, LSM
Joe T. Mathis, LM
Taro Matsuura, LM
S.H. Matthews, LSM
Peter T. Mauzey, LSM
John Mavor, LF
Robert Mayer, Jr., LM
Clarence E. Mayo, LM
Alexander Mazur, LM
D.R. McAvoy, Jr., LM
Robert H. McCamish, LM
Thomas J. McCarthy, LSM
Kenneth R. McClymont, LF
Gary E. McConnell, LM
Martin J. McCormick, Jr., LM
Dennis D. McCrady, LSM
Stuart McCullough, LSM
T. McDonagh, LM
Arthur McDonald, LSM
William C. McDonald, LM
Samuel F. Mcgeiver, LM
Bryan W. Mcghee, LM
William M. McGill, LSM
August L. McGuffin, LSM
John P. McHenry, LM
Gregory F. McHugh, LM
George A. McIntosh, LM
Jack D. McKinney, LM
D.D. McNelis, LM
A.J. McNerney, LSM
James F. Mcveigh, LM
Dean R. Mehlberg, LM
Thomas H. Mehling, LM
Roy W. Meinke, LSM
Osorio C. Meirelles, LM
H. Paul Meisel, LSM
John W. Mench, LSM
Richard A. Mendler, LM
D. Mercado, Jr., LM
Harry W. Mergler, LF
Russell F. Messier, LM
Hans U. Meyer, LM
James R. Meyers, LM
Andrew L. Michel, LSM
James A. Michel, LM
Dr. and Mrs. Angelo Miele, I
C. Michael Miglore, LM
Tetsuya Miki, LF
Norbert B. Miklitz, LM
James R. Miles, Jr., LM
Christopher R. Miller, LM
David A. Miller, LM
John O. Miller, LM
Jon R. Miller, LM
Melvin Miller, LM
Norman Miller, LSM
Roger L. Miller, LM
William C. Miller, Jr., LM
George C. Milligan, LM
J.M. Milne, LM
William G. Minahan, LM
Harry D. Minert, LM
Milton J. Minneman, LSM
N. Minnici, LM
Charles J. Mintz, LM
Elpidio Miranda, LM
Tsuneo Mitsui, LF
John K. Miyasaki, LM
Shigehiro Miyatake, LM
Kunika Mizushima, LF
Eugene L. Mleczo, LM
Alvin W. Moeller, LSM
John I. Molinder, LSM
Ronald L. Monahan, LM

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Laurence L. Moon, LM
Franklin D. Moore, LSM
James L. Moore, LM
Robert A. Moore, LF
Frederic R. Morgenthaler, LF
Norihiko Morinaga, LF
Mitada Morisue, LM
James B. Moritz, LM
Lloyd A. Morley, LF
Maynard B. Morris, LSM
Joost Mortelmans, LM
Robert A. Morton, Jr., LM
Roger S. Morton, LM
David R. Moss, LM
Rangaswamy Mukundan, LSM
Fred F. Mulholland, Jr., LM
Kaoru Murakami, LM
Patrick R. Murphy, LSM
Robert Murphy, I
Kalyan K. Mustaphi, LM
Warren L. Nadler, LM
Atsushi Nagano, LM
H. Troy Nagle, LF
Kyoji Naitoh, LM
Takao Nakano, LF
John Nakata, LM
Toshihiko Nakayama, LM
Seiichi Namba, LF
Philip R. Nannery, LF
August Neitzel, LM
Wm. M. Nellis, LM
Howard N. Nelson, LM
Paul E. Nelson, LM
Robert G. Nettles, LM
Hans Neukom, LM
Peter G. Neumann, LF
Robert W. Newcomb, LF
Sheldon Newman, LM
Robert E. Newsome, LM
Sanh T. Nguyen, LSM
William R. Nicholson, LM
John L. Nicoletto, LM
James A. Niederer, LM
Jorma U. Nieminen, LF
Stig L. Nilsson, LF
Gene M. Nishimura, LM
Robert T. Noble, LM
Hector F. Noel, LM
Alexander R. Norden, LSM
George G. North, LM
Fred L. Nylander, LSM
Michael J. O Connor, LM
Thomas P. O'Brien, LSM
John T. O'Donnell, LM
William M. Ogden, LM
J.H. Ohara, LM
Gilbert M. Ohlen, LM
Boris V. Ohman, LM
Ryoichi Ohnishi, LF
Carl A. Ohsiek, Jr., LM
Akira Ohte, LF
Koustubh D. Oka, LM
Roy T. Okamoto, LM
Sevgin Oktay, LM
Edgardo V. Oliveros M, LSM
Arthur G. Olsen, LM
Dennis R. Olsen, LSM
William A. Olsen, LM
Ray Olson, LM
Orville R. O'Neal, LSM
William H. Oost, LM
Joseph R. Oranchak, LM

John A. Orr, LF
Joseph Orr, LSM
John M. Osepchuk, LF
Kanji Otsuka, LF
Thomas W. Otto, LM
Wilson D. Pace, LM
E. Valdes Pages, LM
Garrett Paine, LM
James D. Palmer, LF
L.C. Palmer, LSM
Claude J. Pany, LM
Robert E. Papsco, LM
David J. Park, LM
Kenneth K. Park, LSM
Robert D. Parker, LM
Robert G. Parkinson, LM
Lowell C. Parode, LSM
Oscar D. Parsons, LM
Theodore W. Parsons, LM
Yadollah Parvizi, LM
John Pascu, LM
Ralph W. Passarelli, LM
Bernard M. Pasternack, LSM
Devendra J. Patel, LM
John P. Patterson, LM
Boonsong Paukatong, LM
Guenther J. Paulus, M
Richard S. Payne, LF
Kenneth R. Peal, LM
D.R. Pearson, LM
Donald E. Pearson, LF
Jack O. Pearson, LM
Gabriel B. Peaseley, LM
William E. Peck, LM
Robert K. Pedersen, LM
Leroy S. Pendleton, LM
N.P. Penny, LSM
William B. Penzes, LM
Walter E. Pera, LM
Juan Peracaula, LSM
Anton E. Perera, LM
Douglas A. Perham, LM
Frank Perkins, LM
Peter E. Perkins, LSM
Robert E. Perkinson, LSM
Ron Perla, LM
Thomas F. Perrine, LSM
Richard T. Perron, LSM
H.R. Person, LSM
Emanuel P. Peters, LM
Jerome E. Peterson, LM
Bernard L. Pfefer, LSM
Hans K. Pfyffer, LM
P.G. Phillips, LM
Robert R. Phillips, LM
Thomas C. Pierce, LM
Michael J. Piovoso, LSM
A.J. Poggio, LSM
G.E. Pokorny, LSM
Somkiat Pongkanta, LM
Albert G. Ponte, LM
Donald N. Pontsler, LM
Paul Popenoe, Jr., LM
Don J. Popp, LM
Leonard J. Porcello, LF
David Porter, LM
Edwin L. Post, LSM
Ramesh S. Pradhan, LM
Ronald E. Pratt, LM
Ronald L. Prevost, LM
Gary K. Pritchard, LM
E. Norris Procter, LSM
Roger J. Provencal, LM
James W. Pryde, LM

Lee J. Pryor, LM
Robert J. Puckett, LM
Emerson W. Pugh, LF
Robert A. Pugh, LM
Walter C. Pumo, LM
Kay M. Purcell, M
Rene Quirighetti, M
Richard A. Quodomine, LM
Joseph G. Racz, LM
William A. Radasky, LF
Joseph A. Radocchio, M
William J. Raduchel, M
John R. Ragase, LM
Srinivasa H. Raghavan, LSM
Edward E. Rajakumar, LSM
Yudh V. Rajput, LSM
G. Ramakrishnan, LSM
Ramachandra Ramakumar, LF
Raj Ramchandani, LSM
Robert W. Ramsey, Jr., LM
Russell K. Raney, LF
Kenneth F. Rath, LM
R.L. Raybold, LM
John A. Reagan, LF
James J. Rechner, M
Roger and Joyce Rehfeld, LSM
Stig L. Rehnmark, LM
George T. Reich, M
James White Reilly, LSM
John R. Reinert, LSM
Clyde J. Reinhard, LM
William F. Reinke, LM
Carl F. Rench, LM
Alexander M. Rende, LM
Andrew W. Revay, Jr., LSM
R.K. Reynolds, LM
Eugene A. Rheingans, LM
John Rheinstein, LM
Richard G. Rhoda, LM
John Richards, LF
Alexander L. Richardson, LSM
Gordon Richardson, M
John F. Richardson, Jr., LSM
Leonard H. Richter, LM
Leland Riffel, LM
Charles Rino, LF
Roger M. Roberge, LM
John A. Roberts, LM
Larry W. Roberts, LM
Joseph E. Robertshaw, LM
George A. Robertson, M
James C. Robertson, LM
J. Darrell Robinson, LM
Leslie L. Robinson, LM
N. David Robinson, M.D., LM
Stanley M. Robinson, LM
Willard A. Robinson, LSM
Richard B. Robrock, II, LF
William M. Robson, LM
Joseph L. Rodgers, LM
George P. Rodrigue, LF
Stanley B. Roeske, LM
Richard E. Rogers, LM
Heljar B. Rognerud, LM
Hans G. Rolfes, LM
William S. Roman, LM
Salvatore A. Romano, Jr., LSM
Albert J. Rosa, LSM
John E. Rossi, LM
James A. Rothenberger, LM
Tarunbikash Roy, LM
Lawrence G. Rubin, LF
Raymond L. Rudolph, LM
Arthur K. Rue, LSM

Neil F. Ruggieri, LM
Charles M. Rush, LF
Robert D. Russell, LM
Henry F. Ryder, LM
Albert L. Ryff, LM
Sevier Sabin, LM
J. Sada-Gamiz, LM
Samuel Saez, LM
Thomas Y. Sakaguchi, LM
Roy Y. Sakamoto, LM
Maurice S. Salamy, LSM
Richard A. Salo, LM
Jack L. Saltich, LM
Joseph Salzman, M
Alberto Sanchez, LM
David W. Sanders, LM
Phillip A. Sandford, LM
Jun-Ichi Sano, LM
Hal M. Sappington, LM
Dean W. Sargent, LSM
Taiji Saruwatari, LM
Shin Sasaki, M
Yozo Satoda, LM
Tukaram N. Savdharia, M
S.G. Scaglia, LM
John F. Scarzello, LM
Martin M. Schaffel, LM
Herbert Schanker, LM
Larry L. Schedin, LM
Robert A. Scheman, LSM
Dale E. Scherry, LM
I. Morton Schindler, LSM
Frank E. Schink, LF
Edward L. Schlossberg, LSM
Frank W. Schmechel, LM
Dorothy L. Schnabel, LM
John N. Schneider, LSM
Robert L. Schneider, LM
W.K. Schnure, LM
James B. Schoedler, M
Stanley M. Schreiner, LSM
Rudolph F. Schreitmueller, LSM
Ronald B. Schroer, LSM
Bernard S. Schuchner, LSM
Mischa Schwartz, LF
Richard E. Schwarz, LM
R.A. Schwinn, M
Wm R. Scoble, Jr., LM
Richard J. Scott, LM
Richard P. Scott, LM
David A. Seamans, LSM
Jack E. Seitner, LM
Douglas R. Semmes, Jr., LM
Chen B. Sen, LF
J.I. Sendlein, LM
John G. Sendlein, LM
Ashis K. Sengupta, LM
Samuel Sensiper, LF
Donald N. Senzig, LM
Peter Sereny, LM
Peter G. Serev, LM
Walter D. Seward, LSM
D.G. Shales, LM
Charles K. Shanks, LSM
George A. Shaton, LM
Lisa A. Shay, M
Albert P. Sheppard, LSM
Yakov S. Shifrin, LF
James P. Shipley, LM
Chris M. Shirai, M
Francis R. Shoemaker, LM
Chen-Wen Shou, LM
Jerry F. Shoup, LSM
Roy W. Shoup, Jr., M

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K.R. Siarkiewicz, LF
John J. Sideravage, LM
Arthur Siegal, LSM
Thomas W. Sigmon, LF
Peter M. Silverberg, LSM
H.S. Silvus, Jr., LM
John J. Simkanich, LSM
Carl F. Simone, LSM
Donald C. Simoneaux, LM
Dolph Simons, LM
James E. Simpson, LM
Harpreet Singh, LSM
Heramb Singh, LM
E.T. Skantar, LM
Halvor Skeie, M
Ralph J. Skelly, M
William A. Skillman, LF
John W. Skooglund, LF
Walter Skuggevig, LM
Leslie H. Sladen, LM
James G. Sliney, Jr., LSM
Martha Sloan, LF
Thomas W. Slowey, LM
Douglas C. Smathers, LM
Douglas B. Smith, LM
H. Stanley Smith, LM
Harold P. Smith, Jr., LSM
Jeffrey E. Smith, LM
Michael C. Smith, LM
Paul L. Smith, LSM
Robert D. Smith, LM
Robert T. Smith, LSM
William C. Smith, LM
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Life Members Fund Supports Wyndrum's Professional Values

Since he joined IEEE predecessors the American Institute of Electrical Engineers and Institute of Radio Engineers in 1957, finding ways to spark innovation and recognizing member contributions have been at the forefront for former IEEE-USA President Ralph W. Wyndrum, Jr. The tools provided by IEEE have been invaluable throughout his career and as a student. "In graduate school and during my doctoral research, IEEE publications were indispensable, and this continued to be the case in the first decades of my career at Bell Labs," Wyndrum says. "Increasingly, in my career, the professional conferences and networking afforded by IEEE became most important."

An IEEE Life Fellow and long-time, generous donor, Ralph's most recent donation to the IEEE Life Members Fund of the IEEE Foundation exemplifies his commitment to continuing programs to further innovation. "The Fund supports my



"Young Members and senior Members alike can find initiatives that resonate with them and they should support those initiatives," Wyndrum said.

professional values, awards grants to programs that encourage innovation for humanity, recognizes important member contributions, and projects the values that innovative engineering delivers to the world at large. It also supports our History Committee, assuring a well-documented past for the IEEE," he said.

"The grants program of the Life Members Committee makes important technical and social contributions, is judged by competent peers, and will improve the lives of future generations," Wyndrum added. This is why he is driven to support the Life Members Fund.

"Those who should best understand the goals and successes of the foundation are indeed our Members. Young Members and senior Members alike can find initiatives that resonate with them and they should support those initiatives," Wyndrum said.

To donate to the IEEE Life Members Fund of the IEEE Foundation visit www.ieee.org/donate.

A Message from Liberty Mutual Insurance

Support your future engineers. Simply request a free quote on Liberty Mutual auto, home, or renters insurance between 15 April 2014 and 15 July 2014, and we will donate US\$10 to the IEEE Power & Energy Scholarship Fund of the IEEE Foundation.¹

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Locating Local Life Members Activities

Are you interested in attending or volunteering at local activities for Life Members? If so, be sure to get in touch with your local Life Member Affinity Groups (LMAG). The list of all our LMAGs can be found at www.ieee.org/lmag.

New LMAGs that have been formed this year include

- East Tennessee LMAG (Region 3)
- Twin Cities LMAG (Region 4)
- Northern Canada LMAG (Region 7)
- Germany LMAG (Region 8)
- Kerala LMAG (Region 10).

Congratulations to the Outstanding Life Members Affinity Groups

The IEEE Life Members Committee (LMC) is pleased to announce the 2014 Outstanding Life Members Affinity Groups (LMAGs). The Outstanding LMAGs 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).

As a total, the groups noted below conducted over 94 events, with more than 2,600 participants, and LMs within their Sections contributed more than US\$9,000.

Section

Rock River Valley (R4)
Central Texas (Austin) (R5)³
Oklahoma City (R5)²
Wichita (R5)³
Buenaventura (R6)⁵
Kingston (R7)⁴
Peterborough (R7)⁴
Croatia (R8)³
Israel (R8)⁵
Chile (R9)⁴
Colombia (R9)⁶
Panama (R9)⁴
Peru (R9)⁵
Bombay (R10)⁴
South Australia (R10)²

²Recognized two of the last six years

³Recognized three of the last six years

⁴Recognized four of the last six years

2014/2013 Chair of LM Group

Lawrence Wachowiak
Thomas Grimm
W. Watson
George Dean
Jerry Knotts
M. Rahman
James Dymond
Branka Zovko-Cihlar
Jacob Baal-Schem
Oscar Polanco
Julio Garcia/Alfonso Perez-Gama
Guillermo Lasso
Cesar Chamochumbi
Kirit Sheth/Atindra Banerjee
Harry Green

⁵Recognized five of the last six years

⁶Recognized six years in a row

The IEEE LMC believes that keeping LMs active and engaged is a key component to the success of IEEE in local IEEE activities. This engagement can be conducted through the local Section and/or Technical Chapter, but the LMC feels that having a local LMAG is a more effective method in keeping LMs active.

If your Section doesn't have an LMAG, you are encouraged to discuss the formation of one with your Section leadership. In 2013, IEEE LM groups conducted over 250 events, which included more than 13,000 participants.

The IEEE LMC would like to congratulate each Outstanding LMAG for its efforts.

Life Members Create Exhibits for Science Centers Around the World

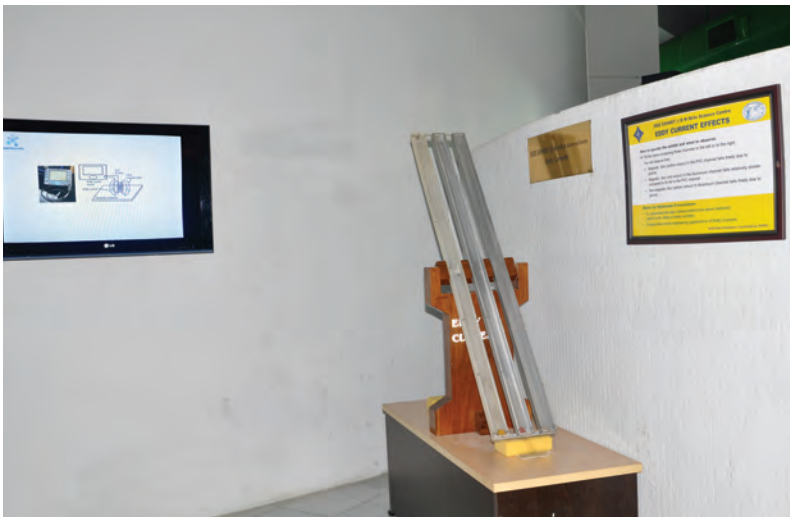
A 2009 tour of the B.M. Birla Science Centre in Hyderabad, India, revealed that many of the exhibits there were in disrepair and not functional. To address that concern, IEEE Life Members (LMs) of the Region 10 Hyderabad Section and the IEEE Educational Activities Board (EAB) proposed a project to revitalize the center. With support of a new initiative seed grant, the IEEE Forum for Science and Engineering Exhibits (IEEE Forum-SEE), a collaborative of IEEE, industry, educators, and the Birla Science Centre, successfully developed and placed exhibits in a 5,000-ft² area designated as "IEEE Exhibits" focused on engineering, technology, and computing. These exhibits illustrate fundamentals and

applications of science, engineering, technology, and computing and will help create interest in science and engineering as a career path. Dr. V. Prasad Kodali, IEEE LM and project lead for the IEEE Exhibits program, said, "This initiative provides a new window to reach out to the high school students and the public by presenting glimpses of advanced electrotechnology, its principles and practices, and the impact of these on society to improve quality of life."

Since 2010, over 100 volunteers, including nine LMs and retired members and students from two high schools and three engineering colleges, participated in creating these exhibits. The exhibits featured in IEEE Exhibits are



The Fleming's left hand rule exhibit created by students of Andhra Mahila Sabha P.Obul Reddy Public School, India.



The eddy current effects exhibit created by IEEE volunteers and industry partner Wipro.



The IEEE Exhibit Boolean adder was created by the students of National Institute of Technology, Warangal, and mentored by IEEE Hyderabad Computer Society Chapter.

innovative methods to demonstrate complex scientific and engineering concepts to pre-university audiences. These include hands-on exhibits, multimedia presentations, and teacher manuals. Through exploration, visitors can experience and learn about

- a virtual physics laboratory with six to ten experiments
- text-to-speech conversion
- a demonstration of eddy currents
- computer-based language learning (reading and writing)
- Boolean adder (mentored by IEEE Computer Society Chapter members)
- a biometric and DNA identification demonstration
- an industrial robot (developed through an IEEE all-student Student Branch competition)
- green energy
- the force on current carrying conductor (Fleming's left hand rule)
- total internal reflections in prisms
- electrical resonance
- fiber-optic communications
- electromagnetic induction (linear variable differential transformer)
- nanotechnology (to be fielded in 2014)
- life sciences (to be developed in 2014).

In addition, two exhibits represent fully working replicas of experiments that have been recently recognized as IEEE Milestones in electrical engineering and computing, which is a rare distinction given for a significant technical achievement that occurred at least 25 years ago in an area of technology represented in IEEE. LMs active in the IEEE Exhibits program have been crucial to the creation of these exhibits that recognize engineering achievements. One exhibit, the Discovery of Raman Effect, replicates the experiment of C.V. Raman and K.S. Krishnan with focused sunlight, and later mercury arc lamp, as the light source. In the replica, a green laser beam is used as the light source to facilitate a real-time viewing of the results. In this exhibit, the visitor can see fluorescence (scattered light as per Rayleigh principle at the wavelength of incident light and the Raman Spectra at wavelengths different from that of the incident light). The second exhibit, the First Millimeter Wave Experiment, replicates the generation, transmission, and reception of millimeter wave frequencies as conducted by J.C. Bose. Bose generated electrical radiation at 5-mm wavelength, or about 60-GHz frequency, with an electrical spark between a sphere and two concentric outer hollow hemispheres. Frequency of operation in this replica was measured to be between 59 and 61 GHz using a spectrum analyzer.

With the generous support of the IEEE New Initiatives Committee in 2013–2014, global expansion of the IEEE program of science museum exhibits is underway. Working with volunteers and science centers in four countries, IEEE Exhibits will be fielded at Espacio Ciencia in Montevideo, Uruguay; Sci-Enza at the University of Pretoria in Pretoria, South Africa; Nehru Science Centre in Mumbai, India; the National Science Centre in Delhi, India; and Kenyatta University in Nairobi, Kenya. The objectives of the global IEEE Exhibits program are to enhance awareness, knowledge, or understanding of engineering and science concepts and careers; generate interest in and excitement about engineering careers; provide opportunities for student to learn new concepts/skills or reinforce existing skills; and increase the recognition and public perception of IEEE.

Over 300,000 students, teachers, and the public will visit these museums and have an opportunity to explore electrical, electronics, and computer engineering concepts in a self-directed, inquiry-based experience. “I visualize the IEEE Exhibits to play a crucial role in the future

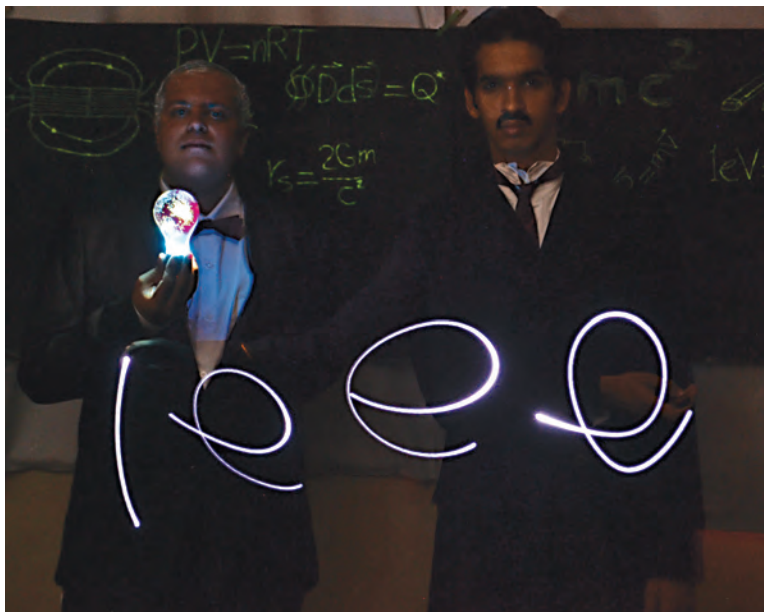
in the Institute’s outreach mission in reaching out to the pre-university students and the public at-large,” Kodali says. This program is one of several EAB programs that engage LMs who are interested in raising awareness of engineering, technology, and computing professions and provides resources to prepare the next potential engineer. The EAB is seeking support to continue this effort for a long-term sustainable program.

For more information about the IEEE Exhibits program for science centers, please contact pre-university@ieee.org

V. Prasad Kodali
Member
IEEE Life Member Committee

Yvonne Pelham
Senior Manager, Educational Outreach
IEEE Educational Activities

IEEE Day 2014



Save the Date: 7 October 2014

It is never too early to get involved. We suggest:

- Plan or assist in planning the event.
- Volunteer to be a subject matter expert speaker.
- Reach out to industry or academia to identify guest speakers.
- Publish the event in your Section or Region newsletter or local newspaper.

2013 Reference: <http://www.ieeeday.org/>

The photo was one submitted for IEEE Day 2013 by the IEEE Arab Academy for Science, Technology, and Maritime Transport Cairo Student Branch—“Trough Commemorating Inventors and Scientists such as Nikola Tesla and Thomas Edison.”

On My Radar

In the summer of 1955, I was a young engineer working for the Naval Electronic Navigation Project (NANEP) at the Naval Air Test Center (NATC) at the Patuxent Air Station in Maryland. I was appointed as the project engineer for the test and evaluation for the Radar Set AN/UPS-1(XN-1) built by RCA Corporation under contract to the U.S. Navy Bureau of Ships (Bu Ships). The radar had a peak power of 1 MW, operating at a frequency between 1230 MHz and 1330 MHz with a 2- μ s pulse width. It also had a moving target indicator (MTI) that used an amplitude-modulated quartz delay line that was extremely difficult to align, requiring about 30 min for the temperature in the unit to stabilize. Antenna, peak power, and sensitivity measurements were made over the operating frequencies. These tests were my introduction to radar theory.

I designed a pair of L-band waveguide-to-coaxial units as my introduction to waveguide theory. In early 1956, RCA replaced the amplitude-modulated quartz delay line with a frequency-modulated quartz delay line, reducing the alignment time to fewer than 10 min.

During 1956, we conducted flight tests using a small jet aircraft. We were going to compare the AN/UPS-1 radar performance against the performance of the standard Marine radar AN/TPS-1 unit at the time. The TPS-1 had a peak power of 250 kW and operated over the same frequencies as the UPS-1 unit. My supervisor at the time was Chuck Young, who recognized that every third transmitted pulse of the AN/UPS-1 could be synchronized with every second pulse of the AN/TPS-1. I designed a multivibrator circuit to accomplish the synchronization. This allowed only two

interference rings on the UPS-1 plan position indicator (PPI) of the UPS-1 and three interference rings on the PPI of the TPS-1. The flight tests were successful.

In 1957, Bu Ships contracted with RCA to install a traveling wave tube amplifier (TWTA) in the receiver of the UPS-1 radar. When the TWTA functioned properly, a substantial increase in detection range was achieved but accompanied with a substantial increase in L-Band signal interference. There was a problem with the dc power supply in the TWTA that caused the performance of the tube to vary from operation as an amplifier to that of an attenuator. No further effort was made to improve the design.

S.J. Caprio, LSM
Laurel, MD

A Night to Remember

Back in 1956, I had just graduated from university in physics and started my first job at Canadair (a precursor of Bombardier). I was fortunate enough to be enrolled as a trainee, where I would be assigned to various divisions for a number of months, thus giving me the chance to learn various disciplines. One of these was the Electronic Division where, after three months, I had my fill of soldering electronic components. Yes, by then, I really knew how to use a soldering iron!

One day, I was helping with the electronic team to prepare for a stress test that was to begin the next day on a large CL28 aircraft. Leading to this, we had been busy installing strain gauges all over the skin of the aircraft to record the strains that would be produced by distorting the plane using hydraulic pistons. The results were to be recorded with a custom-made automatic strain gauge recorder connected to all the strain gauges.

As is often the case, once the test systems were installed and ready to try out before the next day's run, the strain gauge recorder failed, even though it had been tested and worked perfectly before. Engineers, technicians, and I worked feverishly to try to find the cause with no success. By about 11 p.m., most of our team had enough. They decided to leave, even if this meant postponing the main stress analysis test. Unfortunately, this would entail losses to the company as the test was on a critical path for completion and delivery of the aircraft.

Since everybody was going to leave anyway, on impulse, I offered to stay a little longer to make a last ditch effort to find the problem. Surprised, the departing exhausted team reluctantly accepted the offer. I started with the intention of staying just an extra hour before leaving. As I was checking one circuit after another, I got so involved that, before I knew, it was the middle of the night. I looked

around and became conscious that I was alone in a huge hangar with the CL28 and other aircraft as my only companions. To be fair, a night watchman did pass by a couple of times, surprised that I was still at work. Finally, in the wee hours of the morning, as I was staring bleary-eyed at the labyrinth of circuits, suddenly everything clicked into place, and I finally succeeded in finding the problem and in getting the system working.

When the team finally arrived, they were surprised and delighted that the stress tests could begin on schedule. Tired but excited and proud of my accomplishment, I insisted on remaining on site for the tests. Needless to say, I was the hero of the day.

Nowadays I don't believe I would have the guts to volunteer for such a challenge—but when you are young everything seems possible.

Armand Waksberg, LSM
Montreal, Quebec, Canada

Signal Corps School 1969

In the summer of 1969, my graduate education was interrupted by “greetings” from Uncle Sam, inviting me to join the war in Vietnam. After basic training, I was assigned to the signal school at Fort Gordon, Georgia, for “advanced individual training.” I was to be trained to be a radio carrier operator, which involved setting up and operating radio links for telephones and teleprinters. The equipment “van” was a shelter about the size of a small walk-in freezer with a rack of equipment on one wall and a couple of bench seats on the opposite wall. The van ceiling was barely 7 ft, which would preclude quite a few basketball players from this specialty. Down the center of this van was a single fluorescent tube for illumination.

At that time, to handle the large number of new soldiers required for the war effort, training was done in two shifts. I was in the second shift, which started late afternoon and ended shortly before midnight. One night, my partner, a young high school graduate, and I were to establish a radio link with another group a few miles away somewhere in the

Georgia woods but still inside Fort Gordon. A long-time radio amateur, I was able to make the connection in a few minutes, and then we found ourselves bored with nothing to do. As a young ham radio operator, I knew that if one held a fluorescent tube or a neon bulb near an antenna or the vacuum tube of a radio transmitter, the electric field was enough to light the bulb with no wires connected. This is something radio hams learned early in their radio careers.

Looking for some excitement, I told my young partner to take the spare transmitter and one of the extra antennas and to put the antenna on top of the rack of equipment and load up the transmitter. This van had two of everything: transmitters, receivers, and antennas, among others. This arrangement placed the antenna a fraction of a meter from the fluorescent light fixture in the center of the van.

I opened the door of the van and the light from the 40-W fluorescent tube streamed from the open door and broke the darkness of the Georgia woods. A young lieutenant,

a few weeks out of officer candidate school with a degree in, maybe, biology, came running toward us shouting, “Turn off that light! We are to maintain blackout conditions!” He reached just inside the door and threw the light switch down and the light did not extinguish. “Must be a bad switch,” he exclaimed. “Yes sir! Bad switch!” I replied.

“Take the bulb out of the socket,” he offered as a solution to the problem. I complied and had the bulb, still illuminated in my hand but completely free of the socket. “Must be a bad socket sir,” I suggested. That poor young lieutenant looked at the bulb, at me, back to the bulb, and slowly and deliberately turned away and walked into the darkness.

I closed the door and had a good laugh. The high school kid was as perplexed as the lieutenant but joined me in laughter. I wonder if the poor lieutenant ever found out how I performed my magic.

Albert Helfrick, LSM
DeLand, FL

Relay 49/50 Solstice

In 1972, I was a member of the Electrical Department at a refinery in Southern Ontario, which undertook a major expansion. Part of the expansion saw us build a new 30-kV substation with a lineup of 30-kV minimum oil circuit breakers. The control panels for these breakers were located in an adjacent room in the substation.

Two of the 30-kV breakers fed 5-kV motors through captive transformers. One fed a 5000-hp cat. blower and the other a 3750-hp wet gas compressor. Meters and the protection relays for these motors were mounted on the respective breaker control panels. The protection relays included P&B Gold 49/50 (thermal overload/instantaneous overload). The thermal portion (49) of the relay

tracked the load on the motor with a thermal element that mimicked the motor winding temperature. The motors were operated at 80–90% full load current (FLC), and the trip point was set at 105% FLC.

The new production units were commissioned in early 1974. They operated without incident until one late summer afternoon when the breaker feeding the wet gas compressor motor tripped off line. The relay had flagged a thermal overload (49) trip. There followed an exhaustive examination of the motor, the protection relays and the process conditions at the time of the trip. No reason for the relay operation was identified at this time. The motor was restarted and production resumed.

The new units were run for a further 12 months without interruption. That is, until one late summer afternoon when the wet gas compressor motor was again tripped offline by the same relay (49). Shortly after the second event, it began to “dawn” on us that there was a relationship between the time of year and the operation of the (49) relay. Small windows on the south wall of the substation were allowing the late summer sun to shine on and “warm” the thermal relay. Painting a translucent wash on the windows solved the problem.

Barry W. Pengelly, LM
Sidney, British Columbia,
Canada

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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 1 October 2014. Please include your Life grade, town, state, country, phone number, member number, and/or an e-mail address with your piece.

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2014 Life Members Committee

Jose Cruz
jbcruz@ieee.org

Jacob Baal-Schem
j.baal.schem@ieee.org

V Prasad Kodali
kodalivp@gmail.com

Charles Herget
c.herget@ieee.org

Lou Luceri
l.a.luceri@ieee.org

John Impagliazzo
John.Impagliazzo@Hofstra.edu

Charles Turner
c.turner@ieee.org

Dave Kemp
d.kemp@ieee.org

Ralph Wyndrum
r.wyndrum@ieee.org

Cecelia Jankowski
Secretary (staff)
c.jankowski@ieee.org

Stacey Waters
Senior Administrator, Member and Geographic Activities (staff)
s.waters@ieee.org

Craig Causer
Managing Editor (staff)
c.causer@ieee.org

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