

# the Beacon

Happy  
Thanksgiving!

The Monthly Publication of the Maine Section, IEEE [www.ieee.org/maine](http://www.ieee.org/maine)

November '01  
Volume 11  
Number 3

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## Chairman's Message

Let's Lend 'em a Hand!

by Brian Conroy, Chair

There are many volunteer opportunities available for us to give back some of our engineering talent back to our communities. One of the best ways to invest our talent and further the future of engineering is to work with students. There are two articles in this issue of the *Beacon* outlining ways in which to share your math, science and engineering background with the engineers of tomorrow. Please consider taking advantage of these volunteer opportunities and investing your talent on tomorrow.

The first opportunity with the RE-SEED program involves working with middle school teachers to review physical science concepts. Volunteers take a training course and are given a sourcebook and kit for hands-on activities. Typically, volunteers work with students once a week.

The second opportunity involves working with 9-14 year olds on Maine's FIRST™ LEGO® League robotics program. The activity culminates in a tournament that's a cross between a robotic track meet and a science fair.

The idea is to hook kids on science, math and computer science, but another consequence may be to hook the volunteer on this exciting event!

Please consider giving of your time and talent to these worthy causes. You will be helping your community and the field of engineering, but the greatest result may be your sense of satisfaction in this rewarding experience. More details and contact information for these programs can be found on page 3.

On another note, this may be my last chance to converse with you in the *Chairman's Column*. On January 1, Dave Potts will become the next Chair of the Maine Section of IEEE. You will be in very capable hands with Dave at the helm of the Section. I wanted to let you know it has been an enjoyable and rewarding experience to serve as your Chair. I have already picked up additional responsibilities earlier than I expected as a Cub Scout den leader. Hopefully, I can provide a little guidance and mentoring to a couple of tomorrow's engineers.

## Electronic Beacon Delivery and Personal E-mail Aliases

Maine Section members are encouraged to subscribe only to the electronic version of the *Beacon*. Each subscriber receives an e-mail notification whenever the latest issue of the *Beacon* is posted online. Electronic delivery of the *Beacon* ensures timely notification of all Section activities and reduces Section mailing expenses. Instructions for subscribing to e-mail notification for the *Beacon* can be found on the Section website: [www.ieee.org/maine](http://www.ieee.org/maine). It is very important that subscribers keep the Section informed of their current e-mail address. This process can be greatly simplified if a member obtains an IEEE personal e-mail alias. With a personal e-mail alias, a member only has to notify the IEEE whenever their e-mail address changes. Messages addressed to the [alias@ieee.org](mailto:alias@ieee.org) will automatically be forwarded to the real Internet e-mail address. The IEEE address for obtaining a personal e-mail alias is: <http://elecomm.ieee.org/personal-aliases.shtml>

## Maine IEEE Annual Magic of Christmas Concert and Dinner Social Planned for Saturday, December 15, 2001

For over 20 years, the Portland Symphony's "Magic of Christmas" concerts have been the brightest event of the holiday season. Make it part of yours. Enjoy festive Yuletide music performed by the full symphony orchestra, organist Ray Cornils, the 100-voice Magic of Christmas Chorus and special guest stars. Its the most wonderful time of the year! As always, everyone is welcome at this event.

4:00 PM Social at Maria's  
5:00 PM Dinner at Maria's  
6:30 PM Kotzschmar Organ Concert  
7:30 PM Magic of Christmas with Portland Symphony  
Orchestra

Maria's is located at 337 Cumberland Ave, Portland (10 minute walk to Merrill Auditorium. Dinner attendees may park in Maria's lot for the duration of the dinner and concert.)

**Registration is required by November 30th, however space is strictly limited so register early to guarantee seats.**

### MENU

Appetizer:	<i>Meatball Florentine</i>
Entrees:	<i>Stuffed Chicken ala Maria (Prosciutto &amp; Mozzarella)</i> <i>Shrimp and Scallop Alfredo</i>
Child's Entree:	<i>Pasta Marinara w/Meatball</i>
Dessert	

Entree choice must be supplied at time of registration

Total adult dinner and ticket cost: \$57.00  
Total child dinner and ticket cost: \$39.00  
(Ticket only: \$29.00)

Dinner prices will include dinner, tax, and tip. Tickets will be distributed during dinner. To register, please make checks payable to Maine IEEE for the total cost of tickets and meals and mail to:

David Potts  
14 Line Drive  
North Yarmouth, ME 04097  
(207) 829-4069 or potts@ieee.org

**Don't delay, order today!**

## Maine National Engineer's Week – Call for Support *by Daniel Martin*

Planning for the 2002 Maine National Engineers Week Celebration is underway. It will be held at the University of Maine, in Orono, on March 1<sup>st</sup> and 2<sup>nd</sup>, 2002.

The focus of the NEW celebration here in Maine is to engage children, young adults and K-12 educators in the excitement of engineering. In 2002, the NEW celebration will begin with a banquet on the evening of March 1<sup>st</sup> at the Penobscot Valley Country Club. March 2<sup>nd</sup> will consist of a day-long event featuring hands-on engineering exhibits and activities provided by volunteers from local engineering firms and members of professional engineering societies, the University of Maine, and educators from Maine's K-12 school system.

I'd like to invite members of the IEEE to participate – first by attending the event itself, where you can meet with colleagues and hear a fascinating speaker (to be announced here), and then view the displays of engineering firms and organizations from all over the state.

You can also participate by volunteering to help me staff the IEEE hands-on exhibit on the second day of the event. We'll be bringing three breadboards containing DPDT knife switches, batteries, lamps and motors. Last year this set-up was used to demonstrate concepts ranging from simple circuits and three way switches all the way to digital logic. The NEW committee also needs volunteers to staff other hands-on activities. Your employer or company can participate as well, by signing up for a table at the event and showing the public how engineers contribute to society.

Finally, you don't need to wait until March to get involved! The NEW committee is asking for volunteers to help organize the event. Come to one of our planning meetings to find out how you can help – with publicity, program planning, web site development, or a number of other essential tasks.

So – please plan on attending the NEW celebration, and volunteer to support it if you can. If you'd like to volunteer, contact Daniel Martin at [daniel.p.martin@ieee.org](mailto:daniel.p.martin@ieee.org) or 207 839-5107 for details. You can also get the latest information about NEW at their website: [www.mainelyengineering.org](http://www.mainelyengineering.org)

### New Senior Member

The following Section member was recently elevated to Senior Member status:

*James D. Bouford*  
**Congratulations!**

## Maine's FIRST™ LEGO® League Program

On December 9th forty teams of 9-14 year olds are expected to culminate this years FIRST LEGO League robotics program. Over 1000 kids, coaches, volunteers, parents, and visitors are expected at this year's tournament and anyone from the general public is invited to attend this exciting finale to the 2001 season. The tournament, sponsored by the Agent Institute and the University of Maine, is best described as a cross between a robotic track meet and a science fair. Over 14 awards are given for topics including team spirit, programming, mechanical design, presentation, and creativity.

Besides letting the kids and the adults have a blast, the program is designed to hook and hold the interest of our youth in the science, math, and computer science areas. To accomplish this goal we are seeking individuals who can attend the tournament and demonstrate that science, engineering, math, and computer science are a real future for them. We also need volunteers to help judge, referee, and in general help on December 9th, and of course we can always use financial help to keep the program running.

If you would like to find out more please visit the programs website at <http://www.agent.maine.edu/lego.shtml> and if you would like to volunteer or sponsor the event, please call **Tom Bickford or Sabina Hamidova** at 581-2012.

## RE-SEED Makes a Difference

A collaboration between the University of New England and the RE-SEED Program at Northeastern University is providing the opportunity for volunteers to make a difference in Science Education in the schools in Maine.

This program prepares engineers, scientists, and other individuals with science backgrounds to assist middle school teachers. The program has been in existence since 1991, and over 350 volunteers have impacted 80,000 students in 9 states offering more than 200,000 hours of their time.

Volunteers participate in workshops reviewing physical science concepts. They are supplied with a kit of materials and a sourcebook with over 200 hands-on activities. After completing the review, the volunteer is connected with a classroom teacher and work with this teacher on a weekly basis. To find out more about this valuable and rewarding program contact Kit at the following address:

Kit Juniewicz  
147 Decary Hall, University of New England  
11 Hills Beach Road, Biddeford, ME 04005  
e-mail [kjuniewicz@une.edu](mailto:kjuniewicz@une.edu); phone (207) 283-0171  
Ext. 2135.

## PEERS, a Pre-college IEEE Educational activity

PEERS, the new IEEE Educational Activities the Pre-College Educator/Engineers Resource Site website, is designed to help engineers and educators work together to raise technological literacy at the pre-college level. PEERS is dual tracked to enable engineers and educators to get "pre-acquainted" and learn the basics about each other, so that they will be more at ease when getting started.

PEERS doesn't confine itself only to information for classroom volunteers. There are many other ways for engineers to contribute, including aiding teachers' professional development, getting involved in curricula reform, or acting as an email resource person for a teacher or his class. To get started, access PEERS at <http://www.ieee.org/eab/precollege/peers/index.htm>

## Maine Section aids student project at the University of Maine

On Thursday, October 18 the IEEE student chapter at the University of Maine hosted an Engineering Co-op Job Fair that was a success according to John Roberts, chapter president. Sixteen companies participated and over 210 students from various engineering disciplines attended. The Maine Section is proud to have supported the fair with a donation of \$150. Congratulations students! Keep up the good work.

## Upcoming Events

December, 2001

### CS/EDS Short Course:

*SiGe Heterojunction Bipolar Technology*

### Locations:

*NSC, South Portland*

*USM, Gorham*

Please check out the Section website at [www.ieee.org/maine](http://www.ieee.org/maine) to get the latest information about these events

## Mead-Rumford Plant Tour and Historical Society Speaker

The Maine PES/IAS Chapter is pleased to announce a meeting at the Mead-Rumford paper plant on November 13, 2001. The meeting will consist of an afternoon plant tour of the Mead-Rumford facility, with dinner and an evening talk by speaker Bill Weston, a member of the Rumford Historical Society and a retired maintenance manager and engineer from the Rumford-Mead Mill. Bill will talk on the founding of the town of Rumford and the mill. This should be a talk that would interest both IEEE members and their spouses.

### Schedule:

2:45 PM Welcome, Safety and Orientation  
3:15 PM Tour of R15 Paper Machine  
4:15 PM Tour the Power Distribution System  
5:00 PM Conclude Tour  
5:30 PM Pre-Dinner Social  
6:00 PM Dinner at Madison Motel  
7:00 PM Program - Speaker Bill Weston

### Directions:

From the North (Bangor Area): Either take Rt. 2 all the way to Rumford (~108 miles) or travel to Augusta and follow the directions below from the Central Maine.

From Central Maine (Augusta Area): From I-95 take Exit 31 in Augusta heading West on Rt. 27 toward Belgrade and Farmington, then take Rt. 2 at Farmington to Rumford. We will meet in the Mead-Rumford Administration Building on Main Street.

From the South (Portland/Lewiston Area): From the Maine Turnpike take Exit 13 in Lewiston heading West on Lisbon St. (Rt. 196) toward downtown Lewiston, turn left onto Rt. 202 and cross the James B. Longley Memorial Bridge, look for signs North on Rt. 4 toward Turner/Livermore, and hang a left onto Rt. 108 at Livermore and continue to Rumford. We will meet in the Mead-Rumford Administration Building on Main Street.

### Dinner Details:

Dinner will be held at the Madison Motel on Rt. 2 about 5 miles West of Rumford at 6:00 PM. You will have your choice of chicken, beef or seafood. Registration will be \$20 (\$10 for students) to cover the cost of the meal.

### Registration:

Reservations should be made by contacting Curt Beveridge: Tel. (207)623-3521, ext. 2118 or by E-mail to [curtis.beveridge@cmpco.com](mailto:curtis.beveridge@cmpco.com). Your support of this program by your attendance will promote this type of meeting in the future.

## Useful Information Available from IEEE Websites

The following good information sources are available at IEEE websites. Check them out!

**1. What's New @ IEEE** (<http://www.ieee.org/whats-new>): "What's New" provides the latest news on IEEE activities, industry trends, member benefits, career tips, and new IEEE products. There are 11 newsletters for engineers and other technology professionals. You can choose from the following "What's New @ IEEE" newsletters:

- Circuits
- Communications
- Computing
- Eye on Washington (USA)
- Graduates of the Last Decade (GOLD)
- Libraries
- Members
- Power
- Signal Processing
- Students
- Wireless

It's easy to subscribe or unsubscribe, so you control what information you receive. To subscribe, simply log on to (<http://www.ieee.org/whats-new>). Then select one or more of the e-mail newsletters, enter your e-mail address and click "subscribe." Your e-mail address will not be shared with anyone outside of IEEE.

**2. IEEE-USA POLICY PERSPECTIVES** (<http://www.todaysengineer.org/policyperspectives/index.html>):

POLICY PERSPECTIVES is IEEE-USA's monthly, policy-oriented webzine, offering articles and commentary on the topics that are shaping legislation, the technology workplace, and the engineering world.

**3. IEEE-USA TODAY'S ENGINEER** (<http://www.todaysengineer.org/careerfocus/index.html>):

TODAY'S ENGINEER is IEEE-USA's monthly, career-oriented webzine, offering feature articles and short blurbs with career guidance, tips, strategies and solutions for all sectors of the profession.

**4. IEEE -USA Job Site** (<http://www.ieee.org/jobs>):

This is the premier site for EE jobs. Employers have found that the applicants through this site are much higher quality and job seekers find that you can focus on jobs that are relevant and not search through large numbers of irrelevant positions.

**5. IEEE -USA Salary Calculator** (<http://www.ieeeusa.org/careers/salarycalculator/index.html>):

This site is scheduled to open in late November. You can participate now in a survey that will help determine the type of service that will be offered.

## That All May Know



by W. Cleon

Anderson

Past Director, Region 6

*Editor's note: I thought that most people would find it interesting to learn about the history of the IEEE logo.*

The Institute of Electrical and Electronic Engineers, pars pro toto, "The Institute" is also warmly known to its members as aye-triple-ee: IEEE. The beginnings of this organization date back to 1884 as the AIEE, the American Institute of Electrical Engineers. In 1963 the AIEE and the Institute of Radio Engineers, IRE, which had existed since 1912 merged. Because these two groups had a large number of members in common, they had come to realize that their general interests in electrical and electronic engineering lay together. So those common members joined forces to form the IEEE, with the determination to make it the premier scientific and educational organization. Such is the vision of IEEE : to advance global prosperity by fostering technological innovation, enabling members' careers and promoting community worldwide. Since the merger, electrical engineering has proven to be the learned profession at the forefront in most, if not all, modern technological development. The breadth of the technologies involved are represented by 37 societies of IEEE. These technologies have proliferated into every facet of human endeavor and are largely responsible for the quality of life enjoyed in the world today. As the breadth of these technologies from unclear and oceanic science to computer hardware and software is viewed, it seems quite distant to remember the work of Faraday, Maxwell, Gauss, Heavyside, Joule, Ohm, Ampere, Volta, Watt, Weber, Tesla, Marconi and the other 19 Th century founders of this profession. However, that all may know, we celebrate the work of these founders symbolically in the logo of IEEE.

When the founding organizations were joined in 1963 there was considerable effort expended to unify and simplify logos of these organizations while at the same time retaining their historical significance. The result of this work is the IEEE logo that we know today. It is the symbol we often refer to in familiar terms as the kite and right-hand rule. And symbolic it is:

A committee headed by Alexander Graham Bell in 1893 designed the AIEE's first log. It was a kite shaped badge with a periphery marked by a coil of gold wire. The midpoints were spanned by a galvanometer complete with a blued steel needle on an amber disk. In 1897 another AIEE logo was developed using two linked circles to describe the relationship between the electric

and magnetic fields. In 1912 the IRE logo was developed using a triangle and arrows to represent these same electrical and magnetic forces using the configuration of the right-hand rule.

The use of the right-hand rule in the IEEE logo captures, in simplistic terms, the great mathematical foundations of the profession as described in Maxwell's Equations. The right-hand rule is symbolic of the mathematical relationship between the electric and magnetic fields. It serves as a reminder that electrical engineering and the technologies that flow from it, are based on the calculus and higher orders of mathematics as would be expected of a learned profession.

In a similar manner the kite, as found in the original logo of the AIEE, represents the kite used by Benjamin Franklin when he discovered electricity in lightning. So the kite immortalizes discovery as an essential element of the engineering profession. One is immediately drawn to the effort expended by Edison as he tried filament after filament leading to the discovery of the incandescent lamp. Today, discovery remains the essential tool of a technologist. The kite represents discovery just as Edison's work provides us a definitive example of the discovery process.

The IEEE kite logo is shown without the tail and in a symmetrical diamond form. The geometry of diamond shaped kite with its right-hand rule can also be viewed as a stylized form of the Wheatstone bridge. It has been said that this bridge with its galvanometer also depicts the earliest observation of electrical phenomena by Thales, and the source of the word electricity. The bridge is used as a precise measurement tool. Folklore surrounding the Wheatstone bridge reminds us that the linemen of yesteryear used it to predict the location of a break in a telegraph line to within the distance between two poles. And further, they would often bet coffee on which pole the break was closest to. Hence, the diamond symmetry of the IEEE logo represents the technologist's use of precision instrumentation and exact measurement as indispensable tools of the profession.

The logo of the IEEE serves as a reminder to our diverse membership, that today, we but stand on the shoulders of the giants who founded our profession. As part of the master brand of IEEE, the logo serves as a reminder of the underlying unity of the technologies that have flooded to fill the world as the result of the practice of electrical and electronic engineering. Transcending language, this symbol has become known worldwide. It is expressive of those engineering tools that will continue to be used to foster technological innovation: Advanced mathematics, measurement, instrumentation, and discovery. And in the end, Providence willing, this logo will represent the engineers, scientists and technologists who will be known for promoting community worldwide.

# Beacon Publishing

The Beacon is published on a monthly schedule based upon the need to advertise upcoming meetings. All material submitted for the Beacon must be received by the editor no later than the 15th of the month preceding the issue in which it should be included. Sorry, NO EXCEPTIONS!!

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