

# The Beacon

**A new Maine Section Year is about to begin. Be sure to attend some of the interesting and entertaining events that are planned!**

The Monthly Publication of the Maine Section, IEEE [www.ewh.ieee.org/r1/maine/](http://www.ewh.ieee.org/r1/maine/)

**September, 99  
Volume 9  
Number 1  
In This Issue**

Chairman's Column

Maine Section  
Officers

Magic of Christmas  
Concert and Dinner  
Social (12/11/99)

CS/EDS Chapter  
Meetings:  
*Scaling MOSFETs for  
the 21st Century*  
(10/12/99)

*Eastern Maine Trails -  
Progress and the Future  
&  
Applications of  
Geophysical Devices and  
Technology* (11/3/99)

## From the Chair ...

Welcome to another year of Maine Section IEEE! The Section is as busy as ever, but we would like to see the general membership in Maine become even more active in meetings, volunteer activities, and planning. With that, I'd like to use this column throughout the year to explain some of the activities that take place in an attempt to make it easier for anyone and everyone to be involved in our Section.

Since before the AIEE (American Institute of Electrical Engineers) and IRE (Institute of Radio Engineers) merger took effect in 1963, Maine Engineers have been active on a National level (setting Standards and participating in Conferences) and a Local

level (volunteering and participating in Section activities).

Generally, we hear and/or read about the local activities through the news or this newsletter, *The Beacon*. I know there are a lot of Maine Engineers who are active on a national level, and we'd like to start publishing and sharing those activities in *The Beacon*. Information from conferences that were attended, and decisions made at technical committees are just a couple of examples of information that could enrich all of us. As for the local level, this is where you can make a direct contribution to your Section. In Maine, we are organized as the Maine Section and also have 5 Chapters of

## Maine Section Officers for 1999/2000

*Chairman:*

**RON OSGOOD**, Fairchild Semiconductor  
(207)775-8068  
[ron.osgood@fairchildsemi.com](mailto:ron.osgood@fairchildsemi.com)

*Vice Chair:*

**Brian Conroy**, Central Maine Power  
(207)791-1023  
[baconroy@cmpco.com](mailto:baconroy@cmpco.com)

*Treasurer:*

**Jim Skilling**, University of Maine  
(207)621-3252  
[jskill@maine.edu](mailto:jskill@maine.edu)

*Senior Member-  
at-Large:*

**Nathan March**, Quadic Systems  
(207)773-2662  
[nate@quadic.com](mailto:nate@quadic.com)

*Junior Member-  
at-Large:*

**Bridget Rioux**, National Semiconductor  
(207)541-8473  
[bridget.k.rioux.nsc.com](mailto:bridget.k.rioux.nsc.com)

*Junior Past  
Chairman:*

**Jack Swanton**, ECHOlab, Inc.  
(781)273-1512  
[j.swanton@ieee.org](mailto:j.swanton@ieee.org)

IEEE

*continued on page 2*

### **From the Chair**

*continued from page 1*

Societies associated with the Section. You are probably already aware of this, but for those of you who aren't, the Chapters are:

**PES/IAS** (Joint Chapter of Power Engineering Society and Industry Applications Society)

**Communications** (Chapter of the Communications Society)

**EDS/Computer** (Joint Chapter of Electron Device Society and Computer Society)

We are always looking for individuals interested in becoming Section and Chapter officers to help in the Section/Chapter planning. The Section also has several focus committees to help plan and promote such things as:

- **National Engineers Week**
- **Membership Development**
- **Professional Activities**

If anyone is interested in serving as an IEEE officer or helping in any way, please contact me immediately at:

[ron.osgood@fairchildsemi.com](mailto:ron.osgood@fairchildsemi.com)

Another focus area along the same theme of furthering communication is the Section website ([www.ewh.ieee.org/r1/maine/](http://www.ewh.ieee.org/r1/maine/)) and the online Beacon newsletter. We have approx. 600 IEEE members in the State. Previously, each and every one of you (provided IEEE . gives us an updated database) would receive a copy of The Beacon mailed to you through the US

Postal Service. This has been an enormous task for each issue of The Beacon that has been performed for many years by a few very dedicated volunteers (many thanks to the Circulation volunteers). For the last few years, the same information that is mailed to you in The Beacon has been posted on our website (see above). Last year, our Beacon editor asked the membership to consider only receiving email notification of when The Beacon is updated. They they could then go to the website to view it. About 7% of you now receive email notification and do not receive the hard copy sent through the post office. This is a great first step in saving paper(trees), Section money, time when you receive the information, and reduces the efforts of some of our circulation volunteers. I know not all of you have web access or email, and we intend to ensure that all members of the Maine Section receive The Beacon by whatever means is necessary. However, for those of you with web access who wouldn't mind the web version in lieu of the hard copy, please email The Beacon Editor ([gelliott@eece.maine.edu](mailto:gelliott@eece.maine.edu)) and specifically ask to be dropped from the hard copy mailing and ask to be notified by email. In almost all cases, the website can be updated before you would receive The Beacon through the postal service. Please give it some thought and let us know how we can enhance the web site to be a better communication tool.

There are some other things I want to mention, but my deadline to the editor is past due, and we want to get this out to you. Please feel free to e-mail me any comments, suggestions, or offers to serve! Thanks for reading, and until next time.....

**Ron Osgood**, Chairman  
Maine IEEE Section

### *Editor's Greeting*

I hope everyone has had a chance to get away for a while this summer and that all of you are looking forward to some interesting meetings and events scheduled by the Maine Section. I am always looking for new information to put in the *Beacon* newsletter. If you have any newsworthy item that you would like to share with the Section members, please e-mail me the information.

We keep trying to get more members to give up their paper Beacon and accept an e-mail notification whenever the latest issue is available at the Section website ([www.ewh.ieee.org/r1/maine/](http://www.ewh.ieee.org/r1/maine/)). Right now about 7% of the membership have given up their paper copy and our goal for this year is to get at least 25% e-mail notification. Please e-mail me at [gelliott@eece.maine.edu](mailto:gelliott@eece.maine.edu) if you are willing to give up your paper copy of the Beacon.



**Magic of Christmas**  
**Annual Concert and Dinner Social**  
*Saturday, December 11*

For 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. It's the most wonderful time of the year! As always, everyone is welcome to this event.

*4:00 PM Social at F. Parker Reidy's*  
*5:00 PM Dinner at F. Parker Reidy's*  
*6:30 PM Kotzschmar Organ Concert*  
*7:30 PM Magic of Christmas with Portland Symphony Orchestra*

F. Parker Reidy's is located at 83 Exchange St., Portland (5 min walk to City Hall, park on street or in city lot). *Registration is required by the early date of October 1 to guarantee group rates and seats.* Dinner Choices can be made at the restaurant, but reservation must be paid by 1 October. Complete meals with tax and tip will include choices of:

*Haddock*  
*Chicken*  
*Sirloin, and*  
*Scallops*

A variety of children's meals will be available for those under 12 year old for \$10 all inclusive.

Total adult dinner and ticket cost: \$42.00  
Total child dinner and ticket cost \$30.00

Dinner prices will include dinner, tax, and tip. A cash bar will be available. 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:

John Andrews  
3 Thunder Road  
PO Box 852  
Saco, ME 04072  
(207)283-1310  
[j.andrews@ieee.org](mailto:j.andrews@ieee.org)

**Don't delay, order today!** Group rate tickets will be purchased only with confirmed and paid reservations. After October 1, tickets may be available to purchase through the PSO ticket office (see website at [portlandsymphony.com/](http://portlandsymphony.com/)). Dinner reservations may be made after Oct. 1 on a space available basis.

# Computer and Electron Device Society Meeting

*Scaling MOSFETs for the 21st Century*

**Dr. Marvin H. White**

**IEEE Fellow & EDS Distinguished Lecturer**

*Tuesday, October 12, 1999*

The Maine IEEE Computer and Electron Device Chapter is pleased to announce the following talk featuring EDS Distinguished Lecturer and IEEE Fellow, Dr. Marvin H. White: "*Scaling MOSFETs for the 21st Century*". Is the continued evolution of Integrated Circuits and MOS Transistors:

- (1) industry's push to follow Moore's Law and the 'Roadmap'?
- (2) a natural consequence of semiconductor R & D?
- (3) a market-place phenomena driven by economic forces  
or all of the above?

What are the fundamental 'physical' limitations for MOSFETs? What are the 'design' limitations? This talk will describe the consequences of scaling MOSFETs. A nonvolatile semiconductor SONOS memory transistor, which scales as the MOSFET, will be described as an alternative to the 'floating gate' Flash Memory for future low-voltage, low-power, applications.

## **About the Speaker:**

In 1981, Dr. White joined the faculty at Lehigh University, Bethlehem, PA, as a Sherman Fairchild Professor in Solid-State Studies -- Electrical and Computer Engineering. His research areas are focused on the influence of defects on the performance of solid-state devices and circuits, solid-state sensors and devices, and custom microelectronic circuits. In particular, he has been involved with graduate education and research in nonvolatile semiconductor (SONOS) memory transistors and the study of interface and bulk trapping phenomena in dielectrics. In 1997, he received the '1997 J. J. Ebers Award' by the IEEE Electron Devices Society "For pioneering contributions to the development of high sensitivity solid-state cameras and imagers, widely used in consumer and technical applications, and for his major contributions to progress in semiconductor devices". This award is the highest form of recognition by the Electron Devices Society for technical accomplishments and commemorates the life of Jewell James Ebers, distinguished pioneering contributor to transistor modeling who helped shape the understanding and technology development of electron devices.

## **Meeting Particulars:**

*Schedule:* 5:30 PM - **Social**  
6:00 PM - **Dinner**  
7:15 PM - **Presentation**  
8:30 PM - **Discussion**

*Cost:* \$20.00 per person for dinner. (Full-time students \$5.00)  
No cost for talk **only**, but you must still register to ensure a chair is saved for you.

*Location:* **Embassy Suites**, South Portland, ME

## **To Make Reservations:**

You may register at the Section website at [www.ewh.ieee.org/r1/maine/](http://www.ewh.ieee.org/r1/maine/) or you may contact Carrie O'Rouke @ (207) 775-8242 or e-mail at [corourke@spf.fairchildsemi.com](mailto:corourke@spf.fairchildsemi.com) to reserve your slot. Please inform Carrie if you will attend the dinner or just the meeting. Cancellations for dinner within 10 days of the start of the meeting will still be charged unless you are able to fill your vacated slot. As always, non-IEEE members are welcome and encouraged to attend! For information **only** about this talk, contact Dave Potts at (207) 775-4633 or [potts@ieee.org](mailto:potts@ieee.org).

**Computer and Electron Device Society Meeting**  
A Merger of the Outdoors and Technology:  
*Eastern Maine Trails - Progress and the Future*  
**Mr. John Andrews**  
*Applications of Geophysical Devices and Technology*  
**Robert G. Marvinney**  
*Wednesday, November 3, 1999*

The Maine IEEE Computer and Electron Device Chapter is pleased to announce an evening of two talks focused on exploring the land; a merger of outdoors and technology.

Mr. John Andrews will make a guest presentation on the status of the Eastern Maine Trail. The Eastern Maine Trail will be created from a 50-mile stretch of railroad tracks abandoned by the Boston and Maine Eastern Line. The trail will run from South Berwick to South Portland and will provide a beautiful four-season corridor for cyclist, hikers, inline-skaters, and cross-country skiers to travel. With an informative slide show, John Andrews will report on the progress of establishing the Eastern Trail's northern edge as well as what the future holds for the trail. John will then organize a Sunday hike for those interested and wishing to hike part of the Eastern Trail.

Dr. Robert Marvinney's presentation, *Applications of Geophysical Devices and Technology*, will emphasize geological applications - specifically what the State looks for with geological devices and how they interpret the results. His talk will cover the following topics:

1. Geological applications of geophysical devices
  - seismic refraction and reflection
  - side-scan sonar
  - ground-penetrating radar
2. Computer mapping in geology
  - data entry methods
  - analysis
  - data output

**About the Speakers:**

*John Andrews* is President of the Eastern Trail Association. He is an officer of the Maine IEEE Chapter of the Computer and Electron Device Society and has been active for many years within the Computer Society in Maine.

*Dr. Marvinney* has been the State Geologist and Director of the Maine Geological Survey in the Department of Conservation since 1995. This agency is responsible for establishing the geologic framework of the state and providing geological expertise to such issues as groundwater protection, coastal erosion and resource exploitation. The survey produces timely reports and maps on many aspects of the state's complex geology. Under his direction, the Maine Geological Survey has moved completely to digital means of map production and distribution.

**Meeting Particulars:**

*Schedule:* 5:15 PM - **Social**, complimentary hors d'oeuvre's from the Maine IEEE CS/EDS

6:00 PM - **Dinner**

6:45 PM - **Dessert and Guest Speaker:** Mr. John Andrews, *Eastern Maine Trails*

7:15 PM - **Featured Speaker:** Dr. Robert G. Marvinney, *Applications of Geophysical Devices*

*Cost:* \$20.00 per person for dinner. (Full-time students \$5.00)

No cost for talk **only**, but you must still register to ensure a chair is saved for you.

*Location:* **Embassy Suites**, South Portland, ME

**To Make Reservations:**

See registration information for the October 12 meeting on the previous page.

# 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!!

**Send articles to:**

George Elliott, Editor  
University of Maine  
5708 Barrows Hall, Rm. 15  
Orono, Maine 04469  
207-581-2350  
gelliott@eece.maine.edu

**Circulation issues? See:**

Stan Koski, Circulation  
Central Maine Power  
Edison Drive  
Augusta, Maine 04336  
207-626-9870  
stanley.koski@cmpco.com



Nonprofit Org.  
U.S. Postage  
PAID  
Augusta, ME  
Permit No. 0024

Maine Section, IEEE  
64 Edison Drive  
Augusta, ME 04330  
[www.eece.maine.edu/EET/IEEE/](http://www.eece.maine.edu/EET/IEEE/)

**The Beacon**