

Newsletter

IEEE-SECTION CHAIR COLUMN

Roger Lawrence

2006 IEEE Eastern NC Section Chair.
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It's September and the leaves are falling. School is back in full swing. IEEE Eastern NC Section (ENCS) looks back on an interesting and fun filled summer in much the same way as families do at this time of the year. We also look forward to some interesting activities in the fall. The fall program is set out on the calendar (new link below) and more activities will be added as their organization is put in place.



The summer picnic was a success. It was well attended. The food was good and there was

plenty of it. The home baked desserts were delicious! The weather was kind and although it was brutally hot and humid, the predicted rain and thunder held off. Only the day before, storm gusts had given the boundary stakes and the tent a workout! Our Bingo

mixer was hugely popular. WCPE trivia posed us some questions that we struggled to answer. We heard an interesting talk from Microsoft's Skip Pizzi and we were able to explore radio broadcasting first hand. It was great to meet so many of you and your families. It was good to have so many children attend and to watch them having a good time, especially since they were enjoying exposure to electrical engineering as it benefits our daily lives.

We had another well attended Section Meeting to Morehead Planetarium in Chapel Hill for their "Extinction" program. Our "presence" was such that we used a dedicated entrance! Who would ever have guessed that 99.9% of all organisms that have ever lived on the earth are already extinct? Let's hope there were no nightmares after this entertaining and informative program given the meteors, bangs and flashes, and the monsters on the ceiling. A number of people extended their visit to the Planetarium and attended the Carolina night sky, the show that followed.

Thanks to all the people who did the organizing work that went in behind the scenes to make these two events successful family, social, and educational events for we "electricals". We particularly thank WCPE for being our host for the picnic... thank you Deborah, thank you Rae, thank you WCPE staff and volunteers. We can now put a face to a name when we hear you on the air and we know what is going on behind the scenes!

Inside this Issue

IEEE-Section Chair Column	1
The Women in Engineering Affinity Group	2
Leadership, Management, and Taking Charge of Your Career	3
IEEE at the Beach	3
Careers Workshop Coming to Triangle!	4
Robotics & Automation Special Announcement	4
Robotics & Automation Chapter Meeting Announcement	4
Embedded Systems Group	5
Highlights from The 2006 International Geoscience and Remote Sensing Symposium	6
New Low-Cost Microsatellite Initiatives at The Office of Naval Research	7
IEEE ENCS Engineering Management Society	8
2006 IEEE Elections	9
IEEE / EMS Joint Section Meeting	9
Events this Fall	10
Contact Information for IEEE Eastern N.C. Section	11

An electronic version of this and previous Newsletters can be found at:

ewh.ieee.org/r3/enc/nl.htm

(Continued on next page)

Our June Section Meeting, joint with the Robotics and Automation Chapter, explored the automotive industry in North Carolina and the Advanced Vehicle Research Center (AVRC). It was an interesting presentation. Good things are happening in North Carolina! The Robotics and Automation Chapter has invited the Director of Product Planning for Lotus sports cars to their October Chapter Meeting. That should cause some of us to abandon our regular evening routine and journey to NCSU.

IEEE ENCS is now officially a PDH approved sponsor. What does that mean? It means ENCS is authorized to award PDH hours for suitable technical meetings documented and run by the Section. It will benefit members by extending their technical knowledge and by helping them achieve their required PDHs.

We continue to promote senior membership for those of you who have ten years or more service in the electrical engineering profession and five years' of significant performance. Don't procrastinate; apply for your senior membership now! IEEE ENCS can guide you towards the proper mechanism for applying. It can help you in formatting the information and it offers you Section support in your application. It will help you navigate the IEEE system.

We appreciate very much all our willing volunteers and we are always happy to welcome more. There are some exciting things in progress in education, professional development, and in management organization thanks to our volunteers.

There is a lot going on during the remainder of 2006. The technical difficulties we experienced with the calendar some weeks ago are now fixed. I trust the inconvenience was minimal to you. Our website calendar can now be reached at <http://ewh.ieee.org/cgi-bin/cal/calendar.pl?month=10&calendar=enc&month=9> and, again, I urge you to use the calendar as a source of information for Section Meetings and Chapter Meetings. All members are welcome to attend our Executive Committee Meetings that take

place on the third Thursday of the month. Member interest makes the difference!

Enjoy this cool September weather. It IS getting cooler, isn't it? Come along to at least one meeting this fall. Be in touch with your suggestions and ideas.

Roger Lawrence ♦

THE WOMEN IN ENGINEERING AFFINITY GROUP

Jana Jenkins

The Women in Engineering Affinity Group will have its next meeting on September 14th at NC State University. Our guest speaker will be Ms. Rosalyn Snyder, with the topic of "Women in Robotics." We are very excited to have the WISE (Women in Science and Engineering) group co-sponsor this meeting with us. The meeting will be from 6:00pm to 8:00pm in the Bragaw Student Lounge on NC State Campus. We are looking forward to an exciting and fun filled evening. WIE and WISE would love for you to come and join us.

Also, please mark your calendars that WIE's will have a meeting the last week of October. Speaker and arrangements will be announced at a later time.

If you have any questions, concerning our upcoming events, or if there is a topic you would like to see presented, please feel free to contact Jana Jenkins at [jenkins1447\(AT\)bellsouth.net](mailto:jenkins1447(AT)bellsouth.net) . ♦

Editor's Note:

E-mail addressing notation

Due to concerns about spam, all email addresses are ciphered by replacing the at-sign with (at) and the dot-org/com ending with a bullet. In case you wondered, we did not invent a new protocol, but just a "different" way to present the information

LEADERSHIP, MANAGEMENT, AND TAKING CHARGE OF YOUR CAREER

Charles Lord

In conjunction with an IEEE initiative known as *Leadership by Developing Others*, a series of informative workshops was held in our area on July 11 in RTP and July 12 in Wilmington. Led by IEEE Region 3 Director-Elect Bill Ratcliff and Region 3 Leadership Development Chair (and our own) Charles Lord, these workshops introduced the skills of understanding personality types, making use of conflict modes to solve conflicts, and understanding how to mentor others and be mentored. Building on those workshops, we are pleased to announce two additional workshops to be held this fall in RTP, sponsored in part by our section's Engineering Management Society (EMS) chapter.

On September 12 we will have a presentation entitled "Strategic Thinking; Tactical Actions" which will run from 6:30-8:30 pm at MCNC's auditorium. We have all heard the old adage "plan your work and work your plan" but how many of us actually go through the process of setting forth our strategic plan before we go into action ("tactical")? This talk will give examples of strategic thinking and strategic planning for such diverse projects as your career, a work project, a company start-up, and a non-profit organization (such as the IEEE). This short workshop will include some group discussion and exercises as well as lecture. It will be led by Charles Lord and should be of great interest to all.

On October 10 we will have a presentation entitled "Collaboration over Distances; the Next Best Thing to Being There" which will run from 6:30-8:30 pm at ISA Training Center at 67 Alexander Drive in RTP. Team interaction and collaboration with co-workers, customers, suppliers, and other shareholders in a project or other endeavor are critical to the success of that project, but what if all of these players are separated, perhaps by great distances. This workshop will explore some of the team dynamics required for this collaboration as well as some vari-

ous methods of carrying out successful team collaborations over great distances without spending a fortune on gas or airfare. It will also be facilitated by Charles Lord and is planned to feature some speakers from the IEEE electronic conferencing ("e-conf") initiative. Charles, along with fellow team members Bill Ratcliff and David Green, received the IEEE Regional Activities Innovation Award for their work on this project.

The EMS Chapter and our Professional Activities Chair (Charles) are interested in starting the popular Professional Development Institute series of meetings next year. We would like your suggestions on future topics in leadership, management, and career skills areas. Please contact Subroto Bhattacharya ([subroto\(at\)us.ibm.com](mailto:subroto(at)us.ibm.com)) or Charles Lord ([c.j.lord\(at\)ieee.org](mailto:c.j.lord(at)ieee.org)), if you have any suggestions or questions. ♦

IEEE AT THE BEACH

Charles Lord

If you live in the greater Wilmington area (or in easy driving distance), take heart! We will be setting up a couple of IEEE meetings for you this Fall. We are looking for topics of interest and possible hosts. If you are in the Wilmington area and your company (or other entity) has a meeting room that is accessible to the public in the evening, please contact me (info below) and we will arrange a meeting there. We are particularly interested in a place that is convenient (or hosted by) GE or Progress Energy, as those are two of the largest employers of EEs in the area. If you have access to meeting space, have ideas for a good meeting program/topic, or want to help out, please contact Charles Lord at [c.j.lord\(at\)ieee.org](mailto:c.j.lord(at)ieee.org). If we don't hear from you, we can't serve you! ♦

CAREERS WORKSHOP COMING TO TRIANGLE!

Charles Lord

The IEEE-USA will be hosting an all-day careers workshop on Saturday, November 11, here in the Triangle area. This will be an exciting, informative presentation and interactive workshop with some of the top speakers in the IEEE career management/enhancement field. The details of the workshop are still being finalized - check our website at www.ieee.org/encs for an update around the middle of September - but mark the date on your calendar TODAY! If you have questions, you can contact Charles Lord at [c.j.lord\(at\)ieee.org](mailto:c.j.lord(at)ieee.org). ♦

ROBOTICS & AUTOMATION SPECIAL ANNOUNCEMENT

Grayson Randall, the Eastern NC Robotics & Automation Chapter Chair has been invited to lecture across the north east US under the IEEE R&A Distinguished Visitor Program. Grayson will be traveling across Vermont, Massachusetts and New York, presenting his experience competing in the DARPA Grand Challenge. The DARPA Grand Challenge is an autonomous vehicle race, sponsored by the US Department of Defense (DARPA). The vehicles traveled a 132 mile course across the Mohave Desert without drivers or remote control. Grayson's team Insight Racing was a finalist and placed 12th out of the 195 contestants. Grayson will speak at the University of Vermont, University of Massachusetts at Amherst, State University of New York at New Paltz, State University of New York IT, Syracuse University, and Rochester Institute of Technology. Way to go, Grayson! ♦

ROBOTICS & AUTOMATION CHAPTER MEETING ANNOUNCEMENT

Our next meeting will be 17 October at 7pm at Centennial Campus.

We will hear from Simon Cobb, Director of Lotus Product Planning and an automotive engineering expert, who is working on advanced automotive technologies and the advancement of Lotus' presence in North Carolina. Simon will talk on the history of Lotus, active suspensions, and the future of Lotus in North Carolina. This promises to be a very interesting talk. Don't miss it!

Simon Cobb Bio:

Simon Cobb is an honors degree qualified mechanical engineer (Nottingham University, UK) who has worked in the automotive industry for the past 28 years. This has included development engineer roles at Perkins Diesels and Ford Motor Company (UK & USA) and the past 20 years at Lotus Engineering in both UK and USA.

Areas of technical work experience have included electro-hydraulic suspension, engine valve control and "by-wire" technologies; base engine development (gasoline & diesel); electronic engine calibration; future powertrain concepts and high volume production programs. His responsibilities have included project team leadership; project management; technical sales; strategic planning and organizational leadership.

Simon is married to Joan and has three teenage boys. The Cobb family moved to Detroit in 2001 and recently relocated to Wake Forest. The family are now permanent USA residents.

Simon's current role is to develop a new Lotus Engineering presence in North Carolina, related to the partnership with the Advanced Vehicle Research Center (AVRC). ♦

EMBEDDED SYSTEMS GROUP

Steve Lund

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I hope that everyone has had a good summer. I surely have but I am beginning to miss the long daylight hours but won't be missing the heat and humidity. By the time you read this Labor Day will have passed and another school year begun. Speaking of school, Eve Barkley has offered this update on the Group's K-12 outreach project.

K-12 Outreach Project - By Eve Barkley

The month of August was a busy one for the school outreach program. With the help of Harold Nelson, we received NanoSonics teaching materials. Harold was able to get us a free teaching kit, which has three preplanned teaching units that include the course curriculum and activity supplies for at least one full class. Thank you to Harold for your time and help. We also have been able to contact the community education group at Morehead Planetarium and have been able to obtain teaching plans for hands on projects, and have been given the opportunity to use one of their simulation tools for a classroom demo. These teaching materials will be used to augment the NanoSonic teaching materials. Morehead Planetarium's education group, has expressed an interest in helping us and is interested in getting feedback on how their materials and teaching plans are used and received by the students.

We have met with one of the middle school science teachers from Woods Charter School, and have tentatively agreed to teach the 6th, 7th, and 8th grade science classes. This means we will be teaching a total of 9 classroom sessions (three for each grade). Based on the science class pacing guides, we have tentatively agreed to teach the first units in mid October to early November. The second and third units will be covered later, in November and December. We will be finalizing the teaching schedule after Labor Day. We are still taking volunteers to put together materials for all three

science classes and for teaching the units. If you are interested to help, please call 919-368-4517 or email [ebarkley\(at\)concertonetworks.com](mailto:ebarkley(at)concertonetworks.com). We are excited about this project and so are the teachers.

Upcoming Programs

The programs steering committee has been hard at work arranging some excellent programs for the coming months. We are also always on the lookout for programs dealing with all aspects of embedded systems. If you have any suggestions for program topics or know of any suitable programs please contact me at the address above.

Embedded Systems Conference Boston - An inside report of the latest trends in embedded system design

The Embedded Systems Conference (ESC) East is an annual conference that covers many of the hot topics in embedded systems, both from the hardware development and software development sides. This year's conference will be held in Boston. Charles Lord will attend and give us a first hand report. Charles' report from ESC will include parts of some of the more interesting technical and vendor presentations. If you are not going to Boston this year, come to MCNC for a "taste" of the conference. The ESC will be held in the week before our group meeting, which is why our meeting date is one week later than our normal 4th Monday schedule.

Date: Monday, October 2nd.

Time: 6:00 P.M. Social, 6:30 P.M Program

Location: MCNC (3021 Cornwallis Rd),

Directions: www.ieee-embedded.org/

All are invited!

The Embedded Systems Group is always looking to expand its base. If you or if you know of anyone who might be interested in our group you can find out more information at our web page at: www.ieee-embedded.org. You can also join us at our virtual community here: www.ieee-communities.org/embedded.



HIGHLIGHTS FROM THE 2006 INTERNATIONAL GEOSCIENCE AND REMOTE SENSING SYMPOSIUM

Linda Hayden

haydenl(at)mindspring.com

The 2006 International Geoscience and Remote Sensing Symposium took place in Denver, Colorado. The theme of this years symposium was "Remote Sensing - A Natural Global Partnership" The focus of the symposium was the widespread distribution and interoperability of remote sensing and environmental data and information as many countries begin launching remote sensing satellites. IEEE is poised to contribute to this effort as it is an international society with members from around the world.



During this conference, Elizabeth City State University was represented by Dr. Linda B. Hayden, Director of the Center of Excellence in Remote Sensing Education and Research (CERSER). Dr. Hayden joined with Dr. Ali Omar from NASA Langley Research Center in Hampton, Virginia in presenting "Collaborations Focused on Enhancing Undergraduate Involvement in Remote Sensing Applications to Atmospheric and Earth Science Research" a comprehensive look at the mentoring strategies used with groups of undergraduate phys-

ics, mathematics, and atmospheric science majors to develop their ability to contribute to remote sensing investigations. The projects discussed were joint efforts of scientist and educators at NASA Langley Research Center, Hampton University in Virginia, Elizabeth City State University in North Carolina, Stennis Space Center, and The Office of Naval Research. Also attending were Malcolm Mathis II and Brittany Green .



Malcolm Mathis presented on the topic "Exploring the Migration of the Roanoke Colonists", research looked at tracking the "lost colony" on Roanoke Island using data from satellite based Optical and ISAR instruments and aerial LIDAR which were compared to observe and quantify the terrain and environment of the historical locales. Ground Penetrating Radar, and geologic core samples at the sites were also used during this research.

Brittany Green's research presentation was titled "Spatial-Explicit Growth Rate Model of Young Striped Bass in Albemarle Sound: Implications on Essential Fish Habitat (EFH) Using GIS." This research examined the growth rate potential of juvenile striped bass *Morone saxatilis* in Albemarle Sound, North Carolina, to identify essential fish habitat (EFH) for striped bass during the summer

(Continued on next page)

and early-fall months. Growth rate potential integrates a physiological-based model (bioenergetics) of fish growth with the physical environment.

During the conference the following people were recognized for their contributions to the field of remote sensing:

- 2006 IEEE Fellows: Kultegin Aydin, Eastwood Im, Ellsworth LeDrew, Charles Luther
- 2006 IEEE GRSS Distinguished Achievement Award Recipient: David G. Goode-nough
- 2006 IEEE GRSS Outstanding Service Award Recipient: Albin J. Gasiewski
- 2006 IEEE GRSS Education Award Recipient: Fawwaz Ulaby

More highlights from the conference can be viewed



at <http://nia.ecsu.edu/ieee/events/060731igarss/index.html>. IGARSS 2007 will be held in Barcelona, Spain, July 23-27th. The theme for the 2007 conference will be "Sensing and Understanding Our Planet". Information on the 2007 conference is available at www.igarss07.org. ♦

NEW LOW-COST MICROSATELLITE INITIATIVES AT THE OFFICE OF NAVAL RESEARCH

Linda Hayden

[haydenl\(at\)mindspring.com](mailto:haydenl(at)mindspring.com)

The Summer 2006 IEEE-GRSS Distinguished Lecture was presented by Dr. Robert McCoy of the Office of Naval Research (ONR). Dr. McCoy is the team leader for the Space Science Team within the Office of Naval



Research (ONR) Ocean Battlespace Sensing Department. Dr. McCoy manages an interdisciplinary team of scientists funding science and technology, in three research areas: space environment research; precision time, time interval (PTTI) and astrometry; and tactical space demonstrations. His program includes basic and applied research funding in academia, government laboratories and industry. The space science element of the program funds basic research in solar physics, ionospheric and thermospheric physics with emphasis on remote sensing, specification and forecast of the upper atmosphere and ionosphere. Goals of the program include development of improved techniques for remote sensing, improved understanding of ionospheric, and development of a new type of ionospheric model based on assimilation of space-based data with basic physics models. Dr. Dr. McCoy, as the program manager for the Tactical Space Innovative Naval Prototype program, supervises the development and spaceflight of microsatellites which demonstrate new warfighting capabilities in space for the Navy. Dr. McCoy came to ONR in 1995 to manage the space environment research program. At ONR he sponsored the development of the Global Assimilation of Ionospheric Measurements (GAIM) model which is cur-

(Continued on next page)

rently transitioning into operations at the Air Force Weather Agency.

Dr. McCoy received his A.B. in Physics from Cornell University in 1974, his M.S. in Physics from Texas A&M in 1976 and his Ph.D. in Astro-Geophysics from the University of Colorado in 1981. Dr. McCoy is the author on more than 60 publications in scientific and technical journals.



His presentation was titled "New Low-cost Microsatellite Initiatives at ONR. Traditionally access to space has been slow and costly which means that it typically takes years to launch a satellite and costs typically approach \$100M. The Office of



Naval Research, in conjunction with other government agencies has started a series of new initiatives to build and launch microsatellites quickly and

for a fraction of the usual cost. This program involves totally rethinking the problem of access to space and opens a wide range of possibilities for sensors and computers in space. For example, low-cost airborne instruments are being packaged in hermetically sealed containers and flown, and lap-top computers are being used to control experiments, take and process data. This new approach should open a wide range of remote sensing and other space applications and make it widely affordable and accessible for universities. ONR in conjunction with several U.S. federal agencies and the National Space Program Office of Taiwan recently launched the Constellation Observing System for Meteorology, Ionosphere and Climate (COSMIC). COSMIC is a constellation of 6 microsatellites to measure ionospheric electron densities and tropospheric neutral densities using GPS occultation, UV photometry and radio tomography. Powerpoint slides from Dr. McCoy's presentation are available at nia.ecsu.edu/ureoms2006/mccoy_ppt.swf. ♦

IEEE ENCS ENGINEERING MANAGEMENT SOCIETY

William Blackmon

Student Paper Competition

In spring 2007, the local EMS chapter will host a student paper competition. The EMS Vice-Chair will be reaching out to local university instructors to encourage their students to participate. Students from all local universities are welcome to participate. Details of the competition are being created and will be announced by January 2007. This is open to both IEEE members and non-members. If you are an instructor for any local university or college and would like to have your students participate or you are a student who would like to learn more, please contact the EMS Vice-Chair, William Blackmon at wblackmon@ieee.org. ♦

2006 IEEE ELECTIONS

Matt Horrer

The 2007 elections for IEEE offices are getting closer and I would like to emphasize once more the importance to inform yourself and participate. www.ieeeusa.org/volunteers/elections/index.html, the official IEEE web page provides the information about the candidates along with links to their personal web pages.

Joe Lillie has approached me to spread his statement for 2007 President Elect. My plan was to take this as a contribution and enclose his message, but because of concerns that this could be considered endorsement, I will only include a note from him that points out an error in the paper ballot:

“NOTE: IEEE has just notified me that there is an error in the IEEE-USA section of the paper ballot. The names for the President-Elect and Member-at-Large positions are reversed. You will receive a second ballot for the IEEE-USA election. For your vote to count you will either have to vote the second ballot or vote electronically on the IEEE website.” ◆

IEEE / EMS JOINT SECTION MEETING

William Blackmon

September 21 there will be an IEEE / EMS Joint Section Meeting. Topic of discussion will be Technical Vitality; how do we nurture the technically trained mind as we grow older and more experienced in our careers? We will be led by the EMS Chapter Chair and three prestigious panel members in this enriching discussion. Please check the IEEE ENCS calendar for details and panel members' biographies.

http://ewh.ieee.org/cgi-bin/calendar.pl?month=&calendar=enc&view=Event&event_id=21&datestring=20060921&starttime=6:00%20pm&endtime=8:00%20pm

Please register by RSVP to rogerlawrence@rglsolutions.com. ◆

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EVENTS THIS FALL

go to the Calendar on the web

September 2006

12 September 2006 • 6.30pm-8.30pm

[Strategic Thinking; Tactical Actions](#)

Location: MCNC Building 1

18 September 2006 • 5:00 pm -8:00 pm :

[SP Chapter Meeting: Adaptive IIR Notch Filters](#)

21 September 2006 • 11:30 am -1:30 pm :

[Executive Committee Meeting](#)

21 September 2006 • 6:00 pm -8:00 pm :

[Joint Section Meeting EMS Chapter Meeting](#)

October 2006

2 October 2006 • 6:00 pm -8:30 pm :

[Embedded Systems Group](#)

10 October 2006 • 6:30 pm -8:30 pm :

[EMS Chapter Meeting](#)

17 October 2006 • 6:30 am -8:30 am :

[Robotics and Automation Chapter Meeting](#)

19 October 2006 • 11:30 am -1:30 pm :

[Executive Committee Meeting](#)

19 October 2006 • 6:00 pm -8:00 pm :

[Section Meeting](#)

October 2006 continued

19 October 2006 • 2:30 - 5:30 pm :

[Fall CERSER Distinguished Lecture](#)

Location: 229 Dixon Hall, ECSU

Speaker: Dr. Geoffrey Fox

<http://cerser.ecsu.edu/06events/061019dls/fox.htm>

November 2006

16 November 2006 • 11:30 am -1:30 pm :

[Executive Committee Meeting](#)

16 November 2006 • 6:00 pm -8:00 pm :

[Section Meeting](#)

27 November 2006 • 6:00 pm -8:30 pm :

[Embedded Systems Group Meeting](#)

December 2006

21 December 2006 • 11:30 am -1:30 pm :

[Executive Committee Meeting](#)

CONTACT INFORMATION FOR IEEE EASTERN N.C. SECTION

2006 Officers and Volunteers

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cations

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Online Links

ENCS Homepage

www.ieee.org/encs

ENCS Calendar

[http://ewh.ieee.org/cgi-bin/cal/
calendar.pl?month=10&calendar=enc&
month=9](http://ewh.ieee.org/cgi-bin/cal/calendar.pl?month=10&calendar=enc&month=9)