



# VIRGINIA MOUNTAIN SECTION NEWSLETTER

**IEEE Region 3, Council 09, Section 65**

**April 2005**

**Thursday, April 28, Clarion Hotel Roanoke Airport**

## **Spouses Night**

**Students from Virginia Tech and VMI  
report and demonstration on the**

## ***Robot Design Competition at IEEE SoutheastCon***

### **Continuing A Recent Tradition**

Based on prior years' success, Spouses Night this year will again feature an earlier start with an extended social hour, complementary hors d'ouvers and cash bar, special dinner price for two, and a program of general interest on a Robot Design Competition.

Date: Thursday April 28, 2005  
Social: 6:00 PM  
Dinner: 7:00 PM  
Talk: 8:00 PM

Cost:	Individual	\$ 15.00
	Couple	\$ 20.00
	Student	\$ 8.00
	Student couple	\$ 10.00

Reserve by **5 PM Monday April 25**

**Dr. James Squire (540) 464-7548**  
<mailto:squirejc@vmi.edu>  
Please specify number of attendees.

### **Directions to**

#### **Clarion Hotel Roanoke Airport**

2727 Ferndale Drive NW  
1581 Exit 3 Hershberger Rd West  
1st Rt. onto Ordway Drive,  
¼ mile, Rt. Into Parking Lot.

#### **IEEE SoutheastCon Design Competition**

A highlight of the annual IEEE SoutheastCon meeting, being held this year on 8-10 April in Ft.Lauderdale, FL, is the Student Hardware Design Competition that provides a challenging game of robotics skill. Each team's robot must successfully pickup five small metallic balls located in random positions on the opponents side of the playing field and bring them back to their side, returning with the balls to the team's original starting square. In the process they must avoid the opponent's vehicle that is trying to do the same thing. Each team has a maximum of 5

minutes to accomplish this. Scoring is based on whether the team gets all of the balls and return to the correct spot, and the amount of time it takes. Additional awards are given for best original hardware design, best mechanical design, best use of custom designed chips (LSI, VLSI), best power system, and best ball retrieval system.

VMI and Virginia Tech are among about 40 schools that participated in this competition. Members of the VMI and Virginia Tech teams will report on their experiences at the design competition, and the plans also are to have them demonstrate their robots in action. The IEEE Virginia Mountain Section is pleased to be a supporter of the VMI and VT teams. Please join us on April 28 to learn of the results and experiences from Southeastcon, as well as to meet and socialize with your friends and colleagues.

## IEEE Virginia Mountain Section Activity Report for 2004

This report covers the year 2004 plus the first quarter of 2005. The Section was active in holding seven dinner meetings/presentations during 2004 and two so far in 2005 as well as accompanying ExCom meetings. Topics were chosen to appeal to a wide range of interests for industry, academic, and student participants. For 2004, the subjects included FACTS devices, Digital Photography, Photovoltaic Applications, a joint meeting with ACS where U.S. Representative Bob Goodlatte spoke, the National Lambda Rail, Mid Atlantic Terascale Partnership and VORTEX, and finally Wind Power and Renewable Energy Technologies. The Wind Power and Renewable Energy Technologies presentation by Dr. Jim Lyons drew the largest attendance. The presentation on Digital Photography by Kevin Hurley and the Spring Picnic in May at VMI specifically invited spouses to attend and were well received. During 2004 and 2005, the student paper competition was hosted in February, with cash prizes awarded to all presenters.

The Computer Society, Industrial Electronics Society and Control Systems Society chapters had two meetings over the course of 2004, one of which was a joint section meeting. The Electron Devices and Microwave Theory and Techniques Society chapters had one meeting in 2004.

Other Activities included awarding the first grants from the Dan Jackson Memorial Fund at local science fairs. The section also funded part of the Virginia Tech Hardware Team project which was presented at Southeastcon 2004.

The year 2004 was successful in maintaining or achieving a number of administrative milestones. A break even budget was achieved, and the L-50 and L-31 reports were submitted early in 2005. A Fellow nomination is now

pending. Regular meetings were conducted as scheduled using a Clarion Hotel as a central site. The monthly Newsletter was expanded and the Section WEB page was updated.

The VMS election of officers occurs every November. The past few years, a new secretary/treasurer is nominated, the vice chair is nominated for chair and the old secretary/treasurer is nominated for vice chair. This "system" produces a three year term for each officer, serving all three positions in his term. Other sections may do this differently and have more success in recruiting/retaining officers.

There are significant challenges being addressed at the present time. Presently the Membership Development position and the Virginia Council representative position are vacant. Searches are underway to fill these immediate openings. We would like to have greater attendance at meetings as well as more active student participation. An inordinate amount of effort is being provided by a small core of dedicated individuals instead of spreading tasks more widely among volunteers. We don't seem to be attracting younger members from industry or academia. In 2005 the section is going to hold 2 meetings at VMI and one at Virginia Tech in a change of the recent trend to hold all meetings in Roanoke. This is a deliberate effort to encourage meeting attendance from both Virginia Tech and VMI. Our Industry Applications Chapter lapsed by not having regular meetings in 2004, but a new Chapter Chair has volunteered and been elected, and we are hoping for a reinvigorated IAS chapter in the VMS this year.

Respectfully submitted,

Cyrus D. Harbourt  
2005 Virginia Mountain Section Chair  
cdharbourt@ieee.org  
540-387-8941

## Teacher In-Service Program

IEEE Educational Activities is involved in a new pre-college education initiative. The title of this effort is "Launching our Children's Path to Engineering." This initiative seeks to promote Engineering to pre-college students and their educators through a sustained public awareness program led by IEEE, with broad support of corporations and professional associations.

The purpose of this 2005 initiative is to plan a sustained transnational outreach program to promote interest in Engineering as a course of study and career choice for pre-college students.

EAB has received \$98K to conduct planning work to address several components included in the initiative. One of these components is to institutionalize the Teacher In-service Program (TISP) piloted by the Florida West Coast Section. The program features engineers developing and presenting technologically oriented topics to pre-college educators in an in-service or professional development setting. Region 3 has been selected to scale this program region wide. Region 3 has been the most active TISP region.

The goal is to involve at least 20 Sections in Region 3 in expanding TISP.

**To support the expansion of TISP a training session will be held in Atlanta on July 23, 2005. There is funding to cover the cost of travel for volunteers for this training.**

In addition, there is funding to cover the cost of materials and supplies for developing a presentation for teachers.

**Anyone interested in participating in this program or desiring further information should contact our Section Chair, Cy Harbourt.**

**IEEE-USA White Paper:  
U.S. Prosperity at Risk; Gigabit  
Networks Should be National  
Priority**

WASHINGTON (8 April 2005) The United States should deploy widespread wired and wireless gigabit networks as a national priority, according to a white paper from the IEEE-USA Committee on Communications and Information Policy (CCIP).

"Providing Ubiquitous Gigabit Networks in the United States," issued 14 March, says that our nation must act promptly to ensure that a new generation of broadband networks "of gigabit per second speed" is ubiquitous and available to all. Failure to act will "relegate the U.S. telecommunications infrastructure to an inferior competitive position" and undermine the future of the U.S. economy.

"Priority deployment of gigabit networks is essential for the United States to maintain its world leadership in the knowledge economy," IEEE Life Fellow and IEEE-USA CCIP member Dr. John Richardson said. "Information drives our lives and our prosperity. The problem is that current networks aren't fast enough to distribute that information properly."

Digital data rates, or speeds, are typically expressed as megabits per second (Mb/s) or gigabits per second (Gb/s). A megabit is one million bits; a gigabit is one billion bits. Current broadband networks, such as DSL or cable modems, have an asymmetric speed of about 2 Mb/s. Gigabit networks are capable of digital rates 50 to 5,000 times as fast, with equal upstream and downstream speed. Symmetric speed means information can be downloaded and uploaded at the same rate. With asymmetric systems, upstream speeds lag behind downstream delivery rates.

Omnipresent U.S. gigabit networks, readily achievable by deploying optical fiber and high-speed wireless, would carry numerous benefits. These include providing the U.S. economy with superior ability to compete globally; stimulating economic activity in digital home entertainment; enhancing online education and training; and facilitating health care remote diagnosis and consultation (telemedicine).

Congress, the Executive Branch and private-sector initiatives could secure these benefits for our nation's global competitiveness and quality of life by adopting "principles leading to ubiquitous, symmetric gigabit availability as a national priority," according to the CCIP white paper

(<http://www.ieeeusa.org/volunteers/committees/ccip/docs/Gigabit-WP.pdf>).

Such principles include regulatory flexibility and encouragement of user-owned networks.

"The key fact of modern telecommunications is the convergence of voice, data, image and video into digital bit streams," said Richardson, a former chief scientist at the National Telecommunications and Information Administration. "We need faster networks to carry these bit streams to users. Broadband speed and penetration in the United States are pitiful compared to levels in Japan and South Korea. This means that U.S. prosperity is at risk because it depends, in large part, on fast and easy exchange of information."

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**Next Meeting**

**Thursday, May 19  
Picnic & Astronomical  
Observatory visit  
at McKethan Park, in  
Lexington, VA.**

**VMS OFFICERS**

**Chairman: Cy Harbourt**  
<mailto:cdharbourt@ieee.org> 387-8941

**Vice Chairman: Jim Squire**  
<mailto:squirejc@vmi.edu> 464-7548

**Sec./Treasurer: Jan Helge Bohn**  
[mail to:bohn@ieee.org](mailto:bohn@ieee.org) 231-3276

**VMS EXECUTIVE COMMITTEE**

**Chris Bonadeo** [cbonadeo@vt.edu](mailto:cbonadeo@vt.edu)

**David Geer** [dgeer@ieee.org](mailto:dgeer@ieee.org)

**Ira Jacobs** [jjacobs@vt.edu](mailto:jjacobs@vt.edu)

**F. Gail Gray** [fggray@vt.edu](mailto:fggray@vt.edu)

**Junior Past Chairman: Shawn  
Addington** [AddingtonJS@vmi.edu](mailto:AddingtonJS@vmi.edu)

**VMS Chapter Chairs**

**Computer, Control Systems, &  
Industrial Electronics:**

**David Livingston**  
<mailto:d.livingston@ieee.org>

**Industrial Applications**

**Glenn Skutt** [gskutt@vpt-inc.com](mailto:gskutt@vpt-inc.com)

**MTT and Electron Devices**

[mailto:dain\\_miller@ieee.org](mailto:dain_miller@ieee.org)

**COMMITTEE CHAIRS**

**VA Council Representative -open**

**PACE – Howard Moses**

**Publicity- Jim Squires**

**Student Activities – D. Livingston**

**Awards –Shawn Addington**

**Membership Development I. Jacobs**

**NEWSLETTER**

**Editor: Ira Jacobs**  
<mailto:ijacobs@vt.edu> 231-5620

Contact Newsletter Editor to be added to the VMS listserv

**WEBSITE**

<http://www.ewh.ieee.org/r3/virginia-mountain>

**Webmaster: Chris Bonadeo**  
[cbonadeo@vt.edu](mailto:cbonadeo@vt.edu)