



# VIRGINIA MOUNTAIN SECTION NEWSLETTER

IEEE Region 3, Council 09, Section 65

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## Thursday, April 16, Holiday Inn Hotel Roanoke Airport The Role of Space Science in the New Millennium

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### Abstract

The space environment has profound effects on modern communication and navigation systems, electrical devices, power systems, spacecraft, astronauts, as well as humans and other life forms on earth. As our society becomes more dependent on technology that is impacted by the space environment, continuing to better understand its fundamental properties becomes even more critical with an ultimate goal of investigating its science, technological impact, and utilization. First, fundamental concepts of the space environment and its impact on modern technology and society will be discussed from the perspective of the interaction of the sun's and earth's atmospheres. The concept of 'space weather' naturally arises from this scenario and several spectacular visual manifestations of space weather and their importance will be discussed. Next, strategies for studying the properties of the space environment will be discussed. These include theoretical, computational, experimental, and observational techniques. Several current space science research agendas being pursued at Virginia Tech in collaboration with other partner institutions will also be showcased.

### Biographical Sketch



Dr. Wayne Scales is currently Professor of Electrical and Computer Engineering in the Bradley Department of Electrical and Computer Engineering at Virginia Tech. He also serves as director of the Center for Space Science and Engineering Research (Space@VT) in the Virginia

Tech College of Engineering. He received the PhD degree in Electrical Engineering and Applied Physics at Cornell University. He did postdoctoral work at the Space Plasma Physics Branch of the Naval Research Laboratory in Washington D.C. His research interests primarily focus on theoretical and computational modeling of the space environment. His professional memberships include the IEEE, American Geophysical Union AGU, American Physical Society APS, and International Union of Radio Science URSI.

**Date:** Thursday, April 16, 2009

**Social:** 6:30 PM

**Dinner:** 7:00 PM

**Talks:** 8:00 PM

**Cost:**

Members & Guests \$20.00

Students \$10.00

**Reserve by 5 PM Monday April 13, 2009**

**Dr. Wilbur Dale (540) 464-7547**

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Please specify the number of attendees.

### Directions to Holiday Inn Hotel Roanoke Airport

2727 Ferndale Drive NW

I-581, Exit 3

Hershberger Rd West

1st Rt. onto Ordway Drive, ¼ mile,

Rt. into parking lot.

## Unemployment Rate for U.S. Engineering and Computer Occupations Jumps Significantly in First Quarter

From Chris McManes  
IEEE-USA Public Relations Manager

WASHINGTON (6 April 2009) -- The unemployment rate for U.S. engineering and computer occupations is increasing more rapidly than for professional occupations in general, according to data released Friday by the Department of Labor's Bureau of Labor Statistics (BLS).

"Engineers create jobs, so these data are very discouraging," IEEE-USA President Gordon Day said. "Engineers strengthen companies and start new ones, leveraging the economy upwards. The fundamental need is for capital to support engineering activity. That's why the government's investments in technology and its efforts to restore the banking system are so important."

The unemployment rate for all engineers jumped from 2.9 percent in the fourth quarter of 2008 to 3.9 percent in the first quarter of 2009. For all computer occupations, the rate went from 3.3 percent to 5.4 percent. In comparison, the quarter-to-quarter rate for all professional workers increased from 3 percent to 3.7 percent.

For electrical and electronics engineers the jobless rate rose from 2.4 percent to 4.1 percent, quarter to quarter. For mechanical engineers, it went from 2.1 percent to 4.2 percent. Aerospace engineers suffered less, with an increase from 1.1 percent to 1.4 percent.

In computer occupations, the rate for software engineers went from 1.9 percent to 4.2 percent. For computer scientists and systems analysts the change was from 3 percent to 5.7 percent.

High-tech managers also experienced unemployment increases. For computer and information systems managers, the rate rose from 2.7 percent to 4 percent. For engineering managers it went from 1 percent to 1.8 percent.

"We at IEEE-USA are concerned about how rapidly engineering and computer-related unemployment is trending upwards," Day said. "In 2007 the overall engineering unemployment rate was only 1.2

percent."

IEEE members can find career enhancement resources at <http://www.ieeeusa.org/careers/>. Help for unemployed and at-risk members is available at <http://www.ieeeusa.org/careers/help/>.

IEEE-USA advances the public good and promotes the careers and public policy interests of more than 210,000 engineers, scientists and allied professionals who are U.S. members of IEEE. IEEE-USA is part of IEEE, the world's largest technical professional society with 375,000 members in 160 countries. See <http://www.ieeeusa.org>.

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