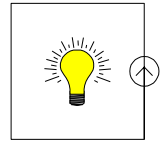




The Central Virginia Current



Vol. 5, No. 1

Newsletter of the IEEE Central Virginia Section

February 2004

Engineers Week Dinner - Thursday February 26, 2004

National Engineers Week is February 22 - 28, 2004. This year's theme is "Turning ideas into reality..."

The Expanded Responsibilities of Engineers in a Technology-Focused Society

Speaker: Dr. Barry M. Horowitz, Professor of Systems and Information Engineering, UVa, Charlottesville, VA

Where: Evers Family Restaurant, US 11, Mt. Crawford, VA

When: February 26, 2004
6:00 P.M. Social
6:30 P.M. Dinner
7:30 P.M. Speaker

Cost: \$11.00 per person, \$6.00 per student. (The Section will pay for IEEE Student Member's meals.)

Directions: I-81 to Exit 240, Go west 1 mile to US 11, north ½ mile to Evers Restaurant on the right.

Reservations: Please make reservations to Howard Arthur of ASHRAE by 11:30 A.M. on 23 February: arthurjh@vmi.edu or 540-464-7581

National Engineers Week is February 22 - 28, 2004. This year's theme is "Turning ideas into reality..."

The 2004 Engineer's Week dinner meeting is being held in conjunction with the Shenandoah Section of the Roanoke Chapter of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

Take pride in your profession and come help us celebrate National Engineer's Week. Our speaker has assured us that the program will be appropriate for engineers and non-engineers so please bring your spouse or significant other to the meeting. Students are also encouraged to attend.

Our speaker is Dr. Barry M. Horowitz, Professor of Systems and Information Engineering, University of Virginia, Charlottesville, Virginia.

Abstract: The occasion of Engineer's Week stimulates the question of how things are going for engineers and the engineering profession as a whole; are they getting better, worse or staying the same. My talk will include the development of some metrics for evaluating the situation and then I will measure the current state of matters using those metrics. This will lead to the identification of needs for the engineering community to respond to in order to sustain the importance of technology and engineering in our society. I will discuss the state of this response and how, as a community, we can do better.

About our Speaker: Dr. Horowitz joined the University of Virginia's faculty as a Professor in the Systems and Information Engineering Department in September 2001, after an industrial career involving the application of systems engineering to many large and complex systems. Since joining the University he has focused his research efforts on design concepts for intelligence systems for tracking and intercepting scenarios related to terrorism. From 1969 through 1996 he was employed in a variety of positions at the Mitre Corporation, including the last five years as President and CEO and the three prior years as Executive Vice President and COO.

As a result of his efforts, in 1996 Dr Horowitz was elected into the National Academy of Engineering. He is also a member of the Tau Beta Pi and Eta Kappa Nu honor societies.

Dr. Horowitz received an MSEE and PhD from New York University in 1967 and 1969 respectively, and a BEE from the City College of New York in 1965.

IEEE Central Virginia Section Organization

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www.cvaieee.org

Meet your 2004 officers:

Chair:

Carlos Whaley is President of Veraxsys, Inc. Veraxsys, headquartered in Forest, VA, supplies automated test and system verification technology and services to wireless and networking OEMs. He also leads an engineering consultancy (Whaley Technologies) which provides system and product engineering support to government and commercial clients. Carlos' nearly 16-year engineering career includes 10 years as an Air Force communications officer with diverse assignments including airborne and ground radar deployment and testing, large-scale internet protocol networking, wireless communications, and low observables (stealth) research.

Carlos received the BSEE degree with Highest Distinction in 1988 from the University of Virginia and the MSEE degree (Distinguished Graduate) in 1993 from the Air Force Institute of Technology (AFIT).

Carlos is serving his second year as Chair of the Central Virginia Section. He has previously served the section as PACE representative (2001) and Vice-Chair (2002).

www.veraxsys.com

www.whaleytech.com

Vice Chair:

Larry Heine is President of Mountain View Product Marketing, Inc. Located near Harrisonburg, VA, Mountain View Product Marketing has provided marketing services to businesses in the western VA area since 2001. Larry's services include technical writing, editing, project management, web site design, and web site hosting.

Prior to establishing Mountain View Product Marketing, Larry spent 25 years in the development of measuring instruments and process control systems with Leeds & Northrup and then 10 years in marketing and product management positions in the process control systems business of Leeds & Northrup and its successors and with Siemens Energy & Automation.

Larry received the BSEE degree from Drexel University and the ME degree from Pennsylvania State University.

Larry has served as the web site coordinator of the Central Virginia Section since 2001. He was Secretary Treasurer in 2002, and has been the membership chair, newsletter editor, and SAMIEEE coordinator since 2003.

www.mountainviewpm.com

www.shenvalleyonline.net

Secretary-Treasurer:

Grace Giras has been employed at Northrop Grumman, Sperry Marine in Charlottesville for the last five years. She is currently investigating navigation sensors for a family of advanced technology surface combatants. The US Department of Defense project name is DD(X) Class Multimission Destroyer Program.

Prior to moving to Charlottesville, Ms. Giras specialized in scientific visualization at the Pittsburgh Supercomputer Center. There she animated tornadoes, colliding galaxies, accretion disks, kinky DNA, smog over LA,

Local Conferences: 2004 Southeastcon

March 26 - 28, 2004
Greensboro Downtown Marriott
Greensboro, NC

www.southeastcon.com

2004 IEEE Systems and Information Engineering Design Symposium

April 16, 2004
Omni Charlottesville Hotel
Charlottesville, VA

www.sys.virginia.edu/sieds04/

Section Meeting - Tuesday March 16, 2004

Top 10 Data Mining Mistakes - Dr. John Elder, Elder Research, Inc.

Where:	Wood Grill Buffet 576 Branchlands Blvd. Charlottesville, VA
Phone:	(434) 975-5613
When:	Tuesday March 16, 2004 6:30 P.M. Dinner 7:00 P.M. Speaker
Directions:	Rt. 29 north about 1 mile north of Hydraulic Road. Turn right at the Toys R Us.

Data Mining is a promising interdisciplinary field whose practitioners discover key patterns in historical data by which to make effective decisions today. It gives one a "crystal ball" which has enhanced performance in noisy, data-rich fields ranging from the stock market to credit risk assessment, and marketing to fraud detection.



But, Data Mining is still as much an art as a science, providing one many convenient ways to do wrong things with one's data. Case studies of (often personal) errors -- both simple

and complex -- will be drawn from real-world consulting engagements. "Best Practices" for Data Mining will be (accidentally) illuminated by their (rarely described) opposites. These common errors range from allowing "after-the-fact" variables into the pool of candidate inputs, to subtly inflating results, through early up-sampling.

You'll hear cautionary tales of endangered projects and embarrassed teams -- and, thereby perhaps, avoid such a fate yourself.

Dr. John Elder heads a Data Mining consulting firm with offices in Charlottesville, Virginia, and Washington, DC. Elder Research, Inc. (ERI) focuses on investment and commercial applications of pattern discovery, including cross-selling, stock selection, image recognition, biometrics, drug efficacy, credit scoring, market timing, and fraud detection.

John earned Electrical Engineering degrees from Rice University, and a Ph.D. in Systems Engineering from the University of Virginia, where he is currently an adjunct professor, teaching Optimization. He spent five years in high-tech defense consulting, four heading research at an investment management firm, two in Rice's Computational & Applied Mathematics department, and has led ERI since 1995.

Dr. Elder is active in Statistics and Engineering conferences and boards and is a Program cochair of the 2004 Knowledge Discovery and Data Mining conference. Since Fall of 2001, he's been honored to serve on a panel guiding technology for the National Security Agency.

www.datamininglab.com

K-12 Educational Activities:

Chances are that growing up you had an interest in science and engineering from your earliest memories. Your parents probably have (or had) stories of how you were always taking things apart to see how they worked. Since no new knowledge could be gained through reassembly, most of us skipped that step. If you were lucky, you found an adult engineer who took you under his or her wing and introduced you to our amazingly interesting and challenging profession. Maybe it was a parent, or a neighbor, or a scoutmaster, or someone at the radio club. Whoever it was, they helped to shape your life as an engineer.

Would you like to have that same positive impact on the lives of children in your community who have an interest in engineering? You can, and we as your section are here to help! We will work with you to organize your qualifying K-12 outreach program. We'll also help to locate needed funding via corporate sponsors.

Some ideas include:

- Legos Mindstorms robotics
- Other robotics competitions
- Giving a guest lecture/demonstration at local schools
- Sponsoring an "EE Assembly" to teach E and M principles (VA Council has a bicycle-driven generator demonstrator we can probably use)



So whether it's as simple as a half hour demo at your daughter's elementary school or as involved as mentoring a robotics team through a year-long program, please consider getting involved with our K-12 youth. Please contact me if you have an idea and you'd like the section's support. Also, please e-mail me with any K-12 activities you're already involved with, so we can share those ideas with the section and IEEE as a whole.

Carlos Whaley - carlos.whaley@ieee.org or (434) 258-4962

(Meet your 2004 officers, continued from p.2)

and other exotic phenomena based on scientific data. Her career includes process control computer systems for electric power dispatch and development of high payload, vision assisted robotics for moving 35 ton bowls of solid state rocket fuel, loading 100 pound yarn spools on textile machine creels, and warehouse automation.

Grace Giras is a past IEEE Section Chair for both the Pittsburgh and Central Virginia Sections. She is a registered Professional Engineer in the Commonwealth of Pennsylvania and holds a BSEE from Carnegie Mellon University.

Professional Activities:

Eric Christenson is employed by Cableform, Inc, Zion Crossroads, VA, writing software and designing hardware. Cableform makes microprocessor based solid state DC motor controls at medium power levels (between 50 and 1000 Volts DC and between 100 and 2000 Amps).

In previous positions, Eric has been responsible for building tools for embedded systems and support of fellow engineers resolving crises in the field, a stable and accurate thermocouple measurement circuit, and the programming behind "The Wavelet Handbook." He holds US patent 5,106,192 on making an interferometer that can determine not only the fractional wavelength part of the reflector position but also the whole number of wavelengths.

Eric graduated in 1986 with the BS in EE and CS from Rose-Hulman Institute of Technology.

Eric is an outdoorsman. and enjoys hiking and canoeing locally.



IEEE February & March 2004 Calendar of Events

- Thursday February 26 - Engineer's Week dinner at Evers Family Restaurant, Mt. Crawford, VA
- Tuesday March 16 - Top 10 Data Mining Mistakes at Wood Grille Buffet, Charlottesville, VA

MEMBERS: Please post in your workplace!
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