

eSCANNER

A JOINT PUBLICATION OF THE NORTHERN VIRGINIA AND WASHINGTON SECTIONS

February 2004

Volume 1, No. 2

Help for Job Seekers

By Murty Polavarapu

There are several "virtual" resources for IEEE members who are looking for a job.

The IEEE virtual community called Employment and Career Strategies, found at <https://www.ieee.comunities.org/ecs> has relevant discussions. There I started a folder where people can post job information, including positions they know of, in subfolders they create by job type. They can also list any job boards they have found helpful. (Later someone started an employment folder).

The Computer Society posts resumes directly at

http://www.computer.org/careers/resume/all_resumes.htm.

The IEEE Spectrum advertises one free listing for members at the IEEE job site <http://www.spectrum.ieee.org/jobsite/hrmanagerform/>. This is not revealed at http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=membership/benefits&file=careers.xml&xsl=generic.xsl#employers. You must first establish a web account at http://www.ieee.org/portal/index.jsp?pageID=corp_level1&path=web/accounts&file=index.xml&xsl=generic.xsl to log in.

Washington Section Offers Continuing Education Courses

The Washington Section is pleased to offer continuing education courses during

March and April on two popular topics. Each course will be offered twice, so you can pick the date that suits your schedule. The topics and dates (all Saturdays) are:

- Web Site Design: March 20 and April 17
- Database Management: March 27 and April 24

The courses will be held at the University of Maryland, and will include a discussion of the concepts followed by hands-on experience in a computer lab.

They will run from 9 am to 5 pm, with breaks for lunch and coffee. The fee is \$80 for IEEE members and \$100 for nonmembers. (Course may be canceled for a particular date if fewer than 10 people register for it.) Please see the March Calendar and Diamond Stories for directions and other details, and contact Ms Jackie Hunter at 703-803-8701 or j.hunter@ieee.org to register. (Include IEEE in the subject line of your e-mail.) For technical information, contact Dr. Haik Biglari, 301-228-3538, or hbiglari@fairchildcontrol.com).

IEEE Leads National Engineers Week 2004

By Chris McManes,
IEEE USA

The IEEE is serving as lead society for this year's National Engineers Week (EWeek), February 22-28, and is helping to pave the way for expanding the celebration around the world. "We live in an increasingly global world, so it just makes sense to expand EWeek concepts worldwide," said IEEE EWeek 2004 Chair Joseph V. Lillie. "We think the EWeek model we have established

can serve as a blueprint for engineers around the world."

IEEE President Arthur W. Winston will help kick off the international outreach by delivering a speech to the Hong Kong Section, which will be holding its first EWeek event. The New Faces of Engineering recognition program will this year include non-U.S. engineers, and an ad featuring these distinguished professionals will run in the International Herald Tribune. The ad is running courtesy of a grant from the IEEE Foundation.

A similar piece will appear in The Economist magazine.

IEEE-USA is producing a New Faces of Engineering calendar with one of the 12 U.S. honorees featured each month. The group will also be recognized in a USA Today ad. All of the New Faces ads will run during EWeek National Engineers Week, founded by the National Society of Professional Engineers in 1951, celebrates the engineering profession and the engineers whose creative work improves living standards. Its programs

and activities are designed to instill pride among all engineers, increase public awareness of the key role engineers play and spark an interest in the profession among youngsters. IEEE-USA is coordinating the IEEE's lead effort.

The IEEE's corporate partner is the Fluor Corp. of Aliso, Viejo, Calif., one of the world's largest publicly owned engineering, procurement, construction, and

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CALENDAR OF

events

FEBRUARY

Tuesday, February 3, 2004**Overseas Outsourcing: Short-term and Long-term Predictions and Implications**

- Sponsor:** National Capital Area Consultants' Network
- Speaker:** Geoff Howe, Data Integration Architect
- Time:** Dinner: 6:00 pm; meeting 7:00 pm
- Place:** We will meet in the Corner Seven Café, the restaurant inside the Tysons Corner Marriott, 8205 Leesburg Pike at the corner of Crescent Towers Drive. We will order from the menu.
- More info:** Tonight's speaker will present a summary of recent news events and analyses from a variety of sources about what appears to be the next big trend: the movement of highly skilled IT jobs to low-cost, overseas labor markets. General comments and discussion of the implications of this trend for the independent consultant will ensue.
- Directions:** See announcement for January 6 meeting.
- Contact:** Geoff Howe at 703-507-5151 or geoffhowe@ieee.org

Tuesday, February 3, 2004
Washington Section Administrative Committee Meeting

- Time:** Dinner at 6:00 pm; meeting at 6:30 pm
- Place:** Allie's American Grill, Bethesda Marriott, 5151 Pooks Hill Rd., Bethesda, Md.
- Directions:** From the north, take 270 South to 355 and exit at Wisconsin Ave. From the south, take 495 exit 34 (which is Wisconsin Ave.) to Pooks Hill Rd.
- More info:** All interested IEEE members are welcome to attend.
- Contact:** Jackie Hunter 703-803-8701 or j.hunter@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Wednesday, Feb. 4, 2004
WIE Executive Committee Planning Meeting

- Sponsor:** Washington Area Women in

Engineering (WIE) Affinity Group (Washington, Northern Virginia, and Baltimore Sections)

- Place:** La Madeleine, 7601 Old Georgetown Rd., Bethesda, Md. (301 215 9192)
- Time:** Dinner: 6:30 pm; meeting: 7:00-8:30 pm
- More info:** All interested IEEE members, associates, and friends are invited to attend. The Web site is <http://ewh.ieee.org/r2/washsec/wie/>
- Contact:** Dr. Kiki Ikossi, 703 960 0261 or ikossi@ieee.org

Tuesday, February 10, 2004**◆ Power Amplifiers: Technology and Design Techniques**

- Sponsor:** Washington and Northern Virginia Chapter, Microwave Theory and Techniques Society (MTT-S)
- Speaker:** Dale Dawson Northrop Grumman Corporation Baltimore
- Place:** American Center for Physics College Park, Md.
- Time:** Lecture: 7:00 pm; diner (optional, reservations required): 6:00 pm
- Directions:** see www.acp.org/map.html for detailed directions
- More info:** See Diamond Story, page 5. This is the fourth lecture in the series on Microwave Components for Emerging Systems. Additional information is available at www.ieee.org/mtt-wnva. Contact Roger Kaul.
- Cost:** Lecture: free; optional dinner: \$15
- Contact:** Dinner reservations are required by Friday noon, February 6. Contact Roger Kaul, r.kaul@ieee.org or 410-552-5289, for dinner reservations and information.

Wednesday, Feb. 11, 2004**Northern Virginia Section Administrative Committee Meeting**

- Sponsor:** Northern Virginia Section
- Time:** 6:30 pm
- Place:** Corner Seven Café, Tysons Corner Marriott, 8205 Leesburg Pike at the corner of Crescent Towers Drive
- Directions:** See announcement for January 6 meeting.
- More info:** The Northern Virginia Section Administrative Committee meets

regularly. All interested IEEE members are invited to attend. Jackie Hunter 703-803-8701 or j.hunter@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Contact:**Tuesday, February 17, 2004**
Roundtable Discussion on Marketing

- Sponsor:** National Capital Area Consultants' Network
- Time:** Dinner: 6:00 pm; meeting 7:30 pm
- Place:** Dinner location: Seven Seas Restaurant, 8503 Baltimore Blvd. (Route 1), College Park, Md. Meeting location: University of Maryland, College Park Campus, AV Williams Engineering Building, Room 2460
- More info:** We will focus on methods of marketing our services and getting more business.
- Directions:** See meeting announcement for January 20.
- Contact:** Geoff Howe at 703-507-5151 or geoffhowe@ieee.org

Thursday, February 19, 2004
Network Forensics - What To Do After You've Been Hacked

- Sponsor:** Computer Society Northern Virginia Chapter
- Speaker:** Raghu Dev, U.S. Head of Operations, Paladion Networks
- Time:** 6:00 to 9:00 pm
- Place:** Oracle Facility, Reston, Va.
- More info:** <http://www.cigital.com/ieee/current.html>
- Contact:** Shahid N. Shah, 301-452-4255 (mobile) or shahid.shah@ieee.org

Tuesday, February 24, 2004
◆ Very Long Baseline Interferometry and High Precision Observations of the Low-Mass**X-Ray Binary Scorpius X-1**

- Sponsor:** Washington and Northern Virginia Chapter, Antennas and Propagation Society (APS)
- Speakers:** Dr. Bernard J. Geldzahler, NASA; Dr. Charles F. Bradshaw, The Mitre Corporation
- Time:** Refreshments and social: 6:30-7:00 pm; lecture: 7:00-8:00 pm

CALENDAR

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CALENDAR

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Place: The Mitre Corporation, Conference Center, South Lobby entrance, Mitre 1 Building, 7525 Colshire Drive, McLean, Va. (Tysons Corner)

Directions: From Reagan National Airport: Take George Washington Parkway North approximately 6 miles to Route 123 South, McLean exit. Exit onto Route 123, (also called Dolley Madison Blvd.); follow south for approximately 4 miles to traffic light at Anderson Road (on left). Turn left onto Anderson Road, take right at Colshire Drive. Use East or West Parking Lots,

enter South Lobby. Alternatively, take I-66 West. Take Exit 67 to Route 267 (Dulles Toll Road). Take Exit 19A, following signs to Route 123 South (also called Dolley Madison Blvd) Tysons Corner. Go to first traffic light at Anderson Road (on left). Turn left onto Anderson Road, take right at Colshire Drive and continue to second entrance to MITRE parking lot. Use East or West Parking Lots, enter South Lobby. From Dulles Airport: Take the Dulles Airport Access and Toll Road to Exit 19. Take Exit 19A, following signs to Route 123 South, Tysons Corner. At the light at the end of the ramp, proceed across Route 123 (also called Dolley

Madison Blvd.) onto Anderson Road. Take right at Colshire Drive and continue to second entrance to mitre parking lot. Use East or West Parking Lots, enter South Lobby. From Route 495 (Beltway): Take Exit 46B (McLean, Route 123). Take Route 123 North, (also called Dolley Madison Blvd) go to the third traffic light at Anderson Road. Turn right onto Anderson Road, take right at Colshire Drive and continue to second entrance to Mitre parking lot. Use East or West Parking Lots, enter South Lobby.

Contact: RSVP (requested) to dc_aps@yahoo.com. Contact Scott Kordella, kordella@mitre.org or 703-883-6282



DIAMOND STORIES



Tuesday, February 10, 2004

Power Amplifiers: Technology and Design Techniques

(Sponsored by MTT-S)

The topic will be device technology and circuit design techniques suitable for 1,000-watt internally matched power transistors at L-Band and for 200 watts at S-Band. Although SiC and SiGe have allowed this plateau to be reached, some of the steps along the way are not as well known and the talk will show some of these steps. In addition, some of the classic papers on matching networks and the circuit topologies that lead to broad bandwidth will be discussed. Second- and third-harmonic terminations will also be discussed, as will examples of circuit topologies applied to the present day technologies of SiC and SiGe internally matched power transistors.

Dale E. Dawson received degrees in electrical engineering from the University of Virginia and from Johns Hopkins University. The University of Virginia has microwave programs with the National Radio Astronomy Observatory, and this started his interest in microwave circuits. During the past 15 years at Westinghouse/Northrop Grumman, Mr. Dawson has been associated with a variety of GaAs MMICs, including power amplifiers and phase shifters. He was among the first to try on-wafer power

measurement techniques (1989) with the aim of lowering the cost of known good power MMIC amplifiers. He has created foundry libraries in the progression of microwave software. The course he teaches at Johns Hopkins covers several types of large-signal models and also covers broadband matching techniques that make best use of the power devices and their associated large-signal models.

Tuesday, February 24, 2004

Very Long Baseline Interferometry and High Precision Observations of the Low-Mass X-Ray Binary Scorpius X-1

(Sponsored by APS)

Very long baseline interferometry (VLBI) is used to obtain effective antenna apertures of thousands of kilometers (millions of wavelengths) with relatively small antennas spaced a large distance apart. The very long baseline array (VLBA) and the very large array (VLA) are two U.S. radio telescope arrays employing VLBI that extend the angular resolution capability of radio astronomy observations. Aperture synthesis in radio astronomy is the process of combining multiple antennas to create a single large effective aperture. The aperture synthesis technique used in radio astronomy has processes similar to the processes developed for

synthetic aperture radar. However, in astronomy, calibrating the observational data is manually intensive, error prone, and more an art than a science. The first half of our discussion will be an overview of the VLA and VLBA, the uses of VLBI, aperture synthesis and calibrating very long baseline interferometer data. We will then discuss some of our observations of Scorpius X-1 and conclude with a radio "movie" developed from 56 hours of VLBI data.

Dr. Bernard J. Geldzahler is the program executive for space operations at NASA headquarters with principal responsibility for the Deep Space Network. He has 25 years' experience in radio astrophysics with a specialty in VLBI. Taking a broad band approach, Dr. Geldzahler has also observed with optical, X-ray, and gamma ray telescopes. The emphasis of his research is compact galactic radio sources looking for microquasars to gain insight into the energy and momentum generation of the more distant, powerful quasars and active galactic nuclei. Dr. Geldzahler received a B.A. degree in astronomy and a B.S. degree in mathematics from the University of Illinois. His Ph.D. degree was awarded by the University of Pennsylvania; much

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maintenance services organizations. Fluor is introducing "Connecting the World to Engineering" in 2004, a series of teleconferences designed to connect a business leader with undergraduate engineering students to engage in a live presentation and discussion of a selected engineering topic. The project will also include online interactive forums between engineering students, engineer moderators, and subject matter experts.

Fluor CEO Alan L. Boeckmann will lead the first teleconference. Joe Lillie, who is also the IEEE's Regional Activities Board treasurer, will moderate. The event is slated to reach college students in Africa, Canada, Europe, South America and the United States. Doug Gorham, IEEE's precollege education manager, has arranged the participation of South Africa's University of Pretoria.

Michael N. Geselowitz, director of the IEEE History Center, contributed a brief history of electricity and link to www.discoverengineering.org to an EWeek bookmark; and a hands-on activity on the back of the EWeek poster. He recommends a visit to the IEEE Virtual Museum (<http://www.ieee-virtual-museum.org/>) for exhibits on technologies that use electricity and magnetism.

The IEEE Women in Engineering affinity group is promoting Introduce a Girl to Engineering Day (http://www.eweek.org/site/News/Eweek/real_benefit.shtml) on February 26. The goal is to mobilize a target of

11,000 women engineers who, along with their male colleagues, will reach out to an estimated one million girls that day and throughout the year. IEEE-USA volunteer Joey Duvall is chairing this year's event. She hopes it interests more girls in the profession, and supports a national effort to increase the ranks of engineers in the United States. "The heart and soul of Introduce a Girl to Engineering Day are the young women we inspire," said Duvall, an RF systems engineer at Lockheed Martin in Orlando, Fla. "I've had a great deal of support from key role models throughout my journey, and I never doubted I could become an engineer. That's the message I hope to give to my younger, future colleagues."

Although not scheduled during EWeek, the IEEE will participate in a United Nations briefing, "Girls and Technology: New Educational Opportunities," on 25 March in New York (<http://www.un.org/dpi/ngosection/janmar04.pdf>). Sylvia Wilson-Thomas, former chair of IEEE-USA's Career & Workforce Policy Committee, will speak at the event.

Because of the IEEE's support, the Future City Competition, which IEEE-USA introduced to EWeek in 1993, is able to bring three additional teams to its national finals in Washington. Future City is up to 34 U.S. regions and reaches more than 30,000 middle-school

students. Pilot programs have been started in Egypt, India, Japan and Sweden. For more information, visit www.futurecity.org. Also in the nation's capital, the IEEE's Lillie will promote EWeek through a nationwide radio media tour, and will help judge the final portion of the Future City national competition. IEEE-USA will present its Best Communications System award at the competition for the fourth consecutive year, and IEEE members Dominique Green and Lowell Smith will work as judges.

The IEEE Life Member Committee is funding a longitudinal study to see where Future City alumni have landed professionally, and to conduct a demographic analysis of current participants. The study is designed to serve as a fund-raising tool so potential sponsors can see evidence of Future City's success. IEEE-USA and IEEE Spectrum magazine commissioned a survey of members and student members to find out what they like about engineering. Spectrum is featuring the findings in its February issue.

For more information on how you can get involved in EWeek, visit www.eweek.org or www.ieeeusa.org/eweek. An EWeek engineer volunteer kit is available at <http://www.eweek.org/site/Engineers/kit.shtml>.

Chris McManes is IEEE-USA's senior marketing communications and public relations coordinator.

DIAMOND STORIES

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of his graduate work was done at the National Radio Astronomy Observatory and the Max Planck Institut fuer Radioastronomie. Dr. Geldzahler undertook post-doctoral studies at MIT and the U.S. Naval Research Laboratory. He is a member of the International Astronomical Union, American Astronomical Society, MIT Enterprise Forum, Washington-Baltimore Chapter, and the Fibonacci Society.

Dr. Charles F. Bradshaw is a

principal engineer at The Mitre Corporation. He has 25 years of experience in communication and computer systems design and development. He also observes as an active radio and X-ray astronomer on national radio and X-ray telescopes. He is a member of an international team of astronomers who observed in July-August 2003 the Low-Mass X-ray Binary (LMXB) system Scorpius X-1 with radio telescopes worldwide and concurrently with the European Space

Agency's Integral X-ray Satellite.

Dr. Bradshaw received B.S. and M.S. degrees in Electrical engineering from George Mason University, and a Ph.D. degree in computational space sciences from George Mason University's School of Computational Sciences. He is an Affiliate Assistant Professor, School of Computational Sciences, George Mason University, member of the American Association for the Advancement of Science, and the American Astronomical Society.

Nanotechnology Talks Continue

The Washington/Northern Virginia Chapter of the Electron Devices Society (EDS) held its last meeting of the fall Nanotechnology Series In December. Ms. Deb Newberry, coauthor of the recent book *The Next Big Thing Is Really Small: How Nanotechnology Will Change the Future of Your Business* spoke on societal implications of nanotechnology. She shared many of the observations gleaned from the recent National Science Foundation Workshop on the same subject.

The Chapter is pleased to cosponsor the monthly meetings of the newly formed Atlantic Nano Forum (www.atlanticnanoforum.org) featuring distinguished speakers on nanotechnology. Dr. Anantha Krishnan of Defense Advanced Research Projects Agency and Dr. Harry Dorn of Virginia Tech spoke at the January 22, 2004 meeting. A February 12 seminar featured Dr. Rick Claus, CEO of Nanosonic, Inc. Meetings of Atlantic Nano Forum are held at Burns, Doane, Swecker & Mathis, L.L.P., Suite 500, 1737 King Street, Alexandria,

National Engineers Week Family Day Event Set for 21 February in Washington

By Chris McManes, IEEE-USA

The IEEE, which is serving as lead society for National Engineers Week (EWeek) 2004, invites you to the National Building Museum in Washington for EWeek's "Zoom into Engineering Family Festival" February 21. The event runs from 10 am to 4:30 pm, and admission is free. The Family Festival will kick off EWeek activities in the nation's capital. It brings together multiple societies to provide hands-on engineering activities and expose children and adults to the ways engineers improve our standard of living. Youngsters can build bridges, solve design challenges and create skyscrapers in a LEGO construction zone; cast mem-

Va. Attendance is free but space is limited. RSVP to Tammy Pasto at 703-299-6948 or tammyp@burnsdoane.com. Please check the EDS website at http://www.ewh.ieee.org/r2/no_virginia/eds/ or the website of Atlantic Nano Forum (www.atlanticnanoforum.org) for details.

bers from the popular children's television show Zoom will perform a couple of short skits and sign autographs.

Members of the U.S. military will demonstrate the key role engineering plays in our nation's defense, and a FIRST Robotics competition will display children using their brain power. NASA representatives will be on hand to discuss how its engineers successfully landed two rovers on Mars, more than 100 million miles from earth.

IEEE members will be on hand to demonstrate how small electric motors operate and answer questions about careers in engineering and other high-tech professions. Giveaways will include a calendar highlighting the 12 2004 nominees for EWeek's New Faces of Engineering recognition program.

The IEEE helped to launch the first Family Festival when the organization last served as lead society in 1993. This year's event has financial support of the IEEE and international design-build firm BE&K. Two years ago, the festival attracted a National Building Museum record of 5,000 people.

Editorial Policies and Procedures

Calendar Items and Announcements

Please submit calendar items in the format used in the Calendar of Events. You can use the form at <http://members.aol.com/scannered> (preferred method) or send email to ncac-scanner@ieee.org. If possible, include a synopsis of the event and a biographical sketch of the presenter including academic background, current position, notable achievements, and IEEE and other professional affiliations.

Conferences and Seminars

IEEE organizations planning to host conferences and seminars in the DC metro area are encouraged to provide information to the SCANNER editor for publication in the calendar of events, as separate advertisements, or both. These events can also be included on our webpage. You are encouraged to coordinate these activities with the NCA Section Chairs listed above to seek local section and member support and participation.

Other contributions, such as reports on chapter events and other member activities, reviews of books by or of interest to members, are most welcome. Please submit them to the managing editor, electronically if possible, at NCAC-Scanner@ieee.org.

Scanner Web Page

The Calendar is maintained at <http://ewh.ieee.org/r2/capitalarea/> eSCANNER (case sensitive). Check here for events submitted too late for print publication.

Deadlines

The editor reserves the right to set policies and procedures necessary to provide members with a newsletter that is informative and timely. Deadlines must be strictly adhered to to keep the publication on schedule. If you are planning an event and have insufficient information by the deadline, please contact the managing editor.

The deadline for the upcoming issue will always be published on this page.

The deadline for the next issue of the eSCANNER is Monday, March 1, 2004. (Publication of the March issue will be delayed.)

Attendance at IEEE meetings

IEEE meetings are open to members and guests. When meetings include meals, please make timely reservations, and cancel in sufficient time if necessary. Any IEEE member may attend the monthly Section administrative committee meetings. Please see the Calendar of Events for times and places.

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