

# SCANNER

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## How Does a Project Get to be a Year Late?



Al Henderson (left) and Aaron Bukowitz discuss the practical aspects of managing project scope, following Bukowitz's presentation at an Engineering Management Society meeting.

By Doug Holly  
Washington Section Editor (Acting)

Thirty-four engineers explored how to manage schedule delays along with other problems at the Engineering Management Society

meeting in September. Aaron Bukowitz, a Certified Project Management Professional (PMP) and senior project manager at Acterna Corp., conducted a seminar on handling project scope and keeping projects on track. The meeting was highly interactive,

with participants sharing ideas and experiences, and giving each other useful feedback on specific problems they face.

The meeting was hosted by the Engineering Management Society, and cosponsored by the IEEE Women In Engineering affinity group, the Institute of Industrial Engineers and the Project Management Society.

A project's scope has a pervasive effect on the execution of a project. Mr. Bukowitz shared his insights about project scope, the process for managing scope and how to keep the demon of overrun budgets and schedules under control.

Formulating a project plan is key to getting a project off to a good start. A number of techniques for develop-

ing the plan were reviewed. Did you know that IEEE has a standard for project plans? IEEE Std 1058-1998 includes a useful outline for developing a project plan.

The other major discussion was about managing change and getting a handle on the scope creep that change causes. To achieve a successful project outcome, a project manager has to plan a project well, stay on top of what is going on, and put some controls in place. Many ideas and war stories were shared by the audience and the meeting ran about 30 minutes over as real project problems were discussed and solutions offered.

Finally, how does a project get to be a year late? One day at a time.

## Robust Adaptive Processing Compared to Conventional Methods

On October 25, Greg Schoenig of Science Applications International Corporation (SAIC) in Chantilly gave the first Signal Processing Society presentation of the year, at George Mason University.

In his presentation, "Robust Statistical Outlier Detection with Applica-

tions to Radar and Communications," he related some signal processing theory to a few selected applications. Specifically, he showed the advantages of selected robust adaptive processing algorithms, when compared to conventional techniques.

Mr. Schoenig has been a member of the IEEE since 1996. He received his B.S.E.E. (1999), M.S. in Electrical Engineering (2000), and M.S. in Computer Science (2001) from The Johns Hopkins University. He also received an M.B.A. degree from The George Washington University (2003). He is currently a doctoral candidate in electrical engineering at Virginia Tech, focusing on robust adaptive processing.

The Signal Processing Society will be hosting more speaker series in the next few months. For more information on meetings and events, please contact the chair, Dr. Tim Settle, at [settlet@saic.com](mailto:settlet@saic.com).

### Online eSCANNER

Current information and calendar listings for IEEE meetings and activities in the National Capital Area are available on the Internet at <http://ewh.ieee.org/r2/capitalarea/eSCANNER>.

The web pages are maintained by the SCANNER managing editor and contain additional information that was not available at press time.

## Engineers Without Borders Assists with Projects in Developing World



Two student volunteers (left) from the University of Maryland assisted Lisu villagers with the installation of a septic system for a new health center, as part of an Engineers Without Borders project in Thailand this summer.

The University of Maryland student chapter of Engineers Without Borders (EWB) will meet with IEEE members on Tuesday, December 7 to explain its mission and describe its projects, including one in Thailand. The presentation will start at 7:30 pm, immediately following the Washington Section administrative meet-

ing (see Calendar listing, p. 4).

According to faculty advisor Dr. Deborah J. Goodings, professor of geotechnical engineering, there is a new type of energy being felt in the A. James Clark School of Engineering at the University of Maryland.

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([www.ieeecommunities.org/nca](http://www.ieeecommunities.org/nca))**Calendar Items and Announcements**Please submit calendar items in the format used in the Calendar of Events. You can send email to [ncac-scanner@ieee.org](mailto: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.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](mailto:ncac-scanner@ieee.org).**Advertising**

Contact the Editor or Advertising Manager about ad rates and to place advertising orders. Ads must be submitted by the deadline below.

**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 January–February issue is December 1, 2004**

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# CALENDAR OF *events*

## Tuesday, November 2, 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 Route 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.

## Tuesday, November 2, 2004

### Consultants Network Dinner Meeting

**Sponsor:** Consultants Network, Washington and Northern Virginia Chapter  
**Time:** Dinner at 6:00 pm; meeting at 7:00 pm  
**Place:** Corner 7 Café, Tysons Corner Marriott, 8028 Leesburg Pike, Vienna, VA  
**Directions:** From the east or I-495, take Route 7 West, turn right on Towers Crescent Drive, then immediately right into the Marriott parking lot. From the west on Route 7, turn right onto Old Gallows Road just opposite the Marriott, proceed around to the left until you have completed almost a full circle, and turn left into the Marriott parking lot. Free parking.  
**More Info:** This meeting will be devoted to networking. Visitors are welcome.  
**Contact:** Sai Chiang at 703-203-0771 or creativesystems@ieee.org.

## Wednesday, November 3, 2004

### ◆ Making A Many-Colored Processing Engine: Signal Processing with Optical Filters

**Sponsor:** Lasers and Electro-Optics Society, Washington and Northern Virginia Chapter  
**Speaker:** Christi Madsen, Lucent Technologies  
**Time:** Light refreshments at 6:00 pm; lecture at 6:30 pm; optional dinner following the lecture with the speaker at a nearby restaurant.  
**Place:** University of Maryland, A.V. Williams Building, Room 2460, College Park, MD  
**Directions:** From the north or I-495, take Route 1 South. Approx. 2 miles south of the Beltway, turn right onto Campus Drive, then immediately take Paint Branch Drive and the A.V. Williams Building will be on the right. From the south on Route 1, turn left onto Campus Drive, and follow above directions. Ample parking is available after 4:00 pm. See <http://www.parking.umd.edu/themap/>.  
**More Info:** See Diamond, story page 5.  
**Contact:** Dominique Dagenais at 301-951-7095 or dominique\_dagenais@avanex.com, or Lucy Zheng at 703-578-2721 or lzheng@ida.org.

## Wednesday, November 3, 2004

### ◆ What is Outsourcing Costing Us? and You Can Get Here From There

**Sponsor:** Washington Area Women in Engineering (WIE), Washington, Northern Virginia, and Baltimore Chapter  
**Cosponsors:** Information Theory Society (Washington and Northern Virginia Chapter); Society for Social Implications of Technology (Washington and Northern Virginia Chapter); Engineering Management Society (Washington and Northern Virginia Chapter)  
**Speaker:** Dr. Anita J. LaSalle, American University  
**Time:** Dinner 7:00-7:30 pm (pizza and drinks provided); lecture 7:30-9:00 pm  
**Place:** Mitre Corporation, Building 2 Conference room 1N100A/B, 7515 Colshire Drive, McLean, VA. Please check in at the main guard desk in Building 2, on the same level as the meeting room.  
**Directions:** Off Route 123 in Tysons Corner. Free parking. See [http://www.mitre.org/about/locations/mitre2\\_map.html](http://www.mitre.org/about/locations/mitre2_map.html).  
**More Info:** See Diamond story, page 5 and <http://ewh.ieee.org/r2/washsec/wie>. All interested IEEE members, associates and friends are invited to attend.  
**Contact:** RSVP if possible to Dr. Kiki Ikossi at 703-960-0261 or ikossi@ieee.org.

## Saturday, November 6, 2004

### GOLD Community Outreach Event

**Sponsor:** Graduates of the Last Decade, Northern Virginia Chapter  
**Time:** 11:00 am to 1:00 pm  
**Place:** Parkview Community Center, Recreational Facility, Warder St. and Otis Place NW, Washington, DC  
**More Info:** This event is a follow-up to the July 17 GOLD outreach event. Volunteers are needed to help about 30 kids construct and operate their own simple electric motor. No need to remember your electromagnetic theory, and no math required! Just a willingness to help during the assembly process and maybe explain how a magnet can repel a coil of copper wire (you remember, right?).  
**Contact:** If you'd like to help, please send an email to Chuck Baldi at [cbaldi@ieee.org](mailto:cbaldi@ieee.org) or Syed Ahmed at [syed.f.ahmed@ieee.org](mailto:syed.f.ahmed@ieee.org), so we can coordinate the number and let you know of any last-minute changes.

## Monday–Wednesday, November 8–10, 2004

### ◆ Wireless Certification and Telecommunications Certification Body Requirements Workshop

**Sponsor:** Electromagnetic Compatibility Society, Washington and Northern Virginia Chapter  
**Speaker:** TBA, from Federal Communications Commission  
**Place:** November 8: FCC Laboratory, 7435 Oak-

land Mills Rd., Columbia, MD; November 9-10: Washington Laboratories, 7560 Lindbergh Drive, Gaithersburg, MD.

**Directions:** Nov. 8 (FCC Lab): <http://www.fcc.gov/oet/faqs/lab/directions.pdf> or 301-362-3000. Nov. 9-10 (Washington Labs): <http://www.wll.com/news/tuff.html#directions> or 301-417-0220.

**More Info:** See Diamond Story, page 5.  
**Cost:** IEEE Members, \$150; Non-IEEE Members, \$225; Full-time students with copy of valid student I.D., \$75; Unemployed and retired attendees, \$75. Fees include continental breakfast, lunch and copy of program notes. Note: Space during the Nov. 8 session at the FCC is limited to the first 20 Attendees. A 20 percent reduction in the rate will be offered for attendees registered for November 9 and 10.

**Contact:** For registration details, call Lavern Robinson at 301-417-0220; Fax 301-417-9069; or [info@wll.com](mailto:info@wll.com).

## Wednesday, November 10, 2004

### Northern Virginia Section Administrative Committee Meeting

**Time:** Dinner at 6:00 pm; meeting at 6:30 pm  
**Place:** Corner 7 Café, Tysons Corner Marriott, 8028 Leesburg Pike, Vienna, VA  
**Directions:** From the east or I-495, take Route 7 West, turn right on Towers Crescent Drive, then immediately right into the Marriott parking lot. From the west on Route 7, turn right onto Old Gallows Road just opposite the Marriott, proceed around to the left until you have completed almost a full circle, and turn left into the Marriott parking lot. Free parking.  
**More info:** All interested IEEE members are invited to attend.  
**Contact:** Jackie Hunter at 703-803-8701 or j.hunter@ieee.org. Please include the term IEEE in the subject line of your e-mail.

## Thursday, November 11, 2004

### Power Engineering Society Meeting

**Sponsor:** Power Engineering Society, Northern Virginia Chapter  
**Time:** 6:30 pm  
**Place:** KEMA Consulting, 4400 Fair Lakes Court, Fairfax, VA  
**More Info:** Please see the eSCANNER for details about the topic and speaker not available at press time.  
**Contact:** Sirak Belayneh at [sbelayne@addistech.com](mailto:sbelayne@addistech.com) or 202-787-2356.

## Tuesday, November 16, 2004

### ◆ Imaging in the THz: Technology and Applications

**Sponsors:** Microwave Theory and Techniques Society (W/NV); Lasers and Electro-Optics Society (W/NV); Electron Devices Society (W/NV); Nuclear and Plasma Sci-

CALENDAR  
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**CALENDAR**

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**Speaker:** Dr. Mark J. Rosker, Program Manager, Microsystems Technology Office, DARPA Social period at 5:30 pm, catered dinner at 6:00 pm (optional, reservations required), lecture at 7:00 pm  
**Time:** Social period at 5:30 pm, catered dinner at 6:00 pm (optional, reservations required), lecture at 7:00 pm  
**Place:** Mitre Corporation, Building 2, 7515 Colshire Drive, McLean, VA  
**Directions:** Off Route 123 in Tysons Corner. See [http://www.mitre.org/about/locations/mitre2\\_map.html](http://www.mitre.org/about/locations/mitre2_map.html).  
**More Info:** See Diamond story, page 5, and [www.ieee.org/mtt-wnva](http://www.ieee.org/mtt-wnva).  
**Cost:** Lecture is free; optional dinner is \$15 (please pay with exact change or by check).  
**Contact:** Please make reservations for optional dinner by Friday, Dec. 12 or earlier, to Michael Nueslein at [mnueslein@mitre.org](mailto:mnueslein@mitre.org) or 703-883-2674. (No reservations required for lecture.)

**Tuesday, November 16, 2004**

There will be no Maryland meeting of the Consultants Network in November.

**Wednesday, November 17, 2004**

**◆ A Flexible Rapid-Prototyping System for High Power Converters**

**Sponsor:** Control Systems Society, Washington Chapter  
**Speaker:** Chris Smith  
**Time:** Noon (pizza provided)  
**Place:** Fairchild Controls Corporation, 540 Highland Street, Frederick, MD  
**More Info:** See Diamond story, page 6.  
**Contact:** RSVP by Nov. 15 to Richard Benjamin 301-228-3471 or [rbenjamin@fairchildcontrols.com](mailto:rbenjamin@fairchildcontrols.com).

**Thursday, November 18, 2004**

**◆ Modern Tiger Teams**

**Sponsor:** Engineering Management Society, Washington and Northern Virginia Chapter  
**Cosponsor:** Washington Area Women in Engineering (Washington, Northern Virginia, and Baltimore Sections)  
**Speaker:** Dr. Alex Pavlak  
**Time:** Networking at 6:00 pm; dinner (optional) at 6:30 pm; seminar at 7:30 pm  
**Place:** Allie's American Grill, Bethesda Marriott, 5151 Pooks Hill Rd., Bethesda, MD.  
**Directions:** From the north, take 270 South to Route 355 and exit at Wisconsin Ave. From the south, take 495 exit 34 (which is Wisconsin Ave.) to Pooks Hill Rd.  
**More Info:** Traditional Tiger Teams are cobbled together to respond to crisis. While their construction is primitive, they can be spectacularly effective. Modern Tiger Teams boost performance by integrating advanced teamwork with total problem-solving within the context of a temporary small group of experts. Their hallmark is constructive conflict, a passionate clash of ideas among experts. While this increased sophistication minimizes dysfunctions and improves major crisis performance, it also allows Tiger Teams to be effective

for low profile everyday firefighting. See Diamond Story, page 6, for more on Dr. Pavlak.

**Cost:** No charge for the program only. Dinner from the Early Bird menu, \$15 per person for IEEE, WIE, IIE members, \$20 per person for non-members, collected at the door.

**Contact:** To insure adequate seating and food, please contact Doug Holly at [dougholly@ieee.org](mailto:dougholly@ieee.org) by 5:00 pm, Wednesday, Nov. 17, to register. Please state in your e-mail if you will or will not be joining us for dinner.

**Wednesday, December 1, 2004**

**The Navy's Silver Fox Unmanned Aerial Vehicle**

**Sponsor:** Aerospace and Electronics Systems Society, Washington and Northern Virginia Chapter  
**Cosponsor:** Antennas and Propagation Society, Washington and Northern Virginia Chapter  
**Speaker:** Dr. Keith Krapels  
**Place:** General Dynamics, 4121 Wilson Boulevard Suite 302, Arlington, VA  
**Time:** Lecture at 5:00 pm; dinner at 6:30 pm (optional at nearby restaurant)  
**Directions:** One block from the Ballston Metro stop.  
**More Info:** The Silver Fox UAV was developed to give the Navy a low cost a bird's eye view during operations. As the U.S. began preparing its forces for Operation Iraqi Freedom, the Department of the Navy called on the Office of Naval Research (ONR) to help find immediately deployable solutions for some Navy and Marine Corps needs. ONR's Tech Solutions office, which finds quick technology solutions for the Navy and Marine Corps, developed a small unmanned aerial vehicle (UAV) that could give Marines up-to-date imagery on the battlefield.  
**Cost:** Lecture is free; dinner (optional) is paid by attendees.  
**Contact:** Dan Purdy, 703-588-1920, [purdyd@onr.navy.mil](mailto:purdyd@onr.navy.mil). Please RSVP before Oct. 29 to Carmen Bray at [carmen.bray@gd-ais.com](mailto:carmen.bray@gd-ais.com) (preferred) or 703-469-3886.

**Wednesday, December 1, 2004**

**Annual GOLD Year-End Networking Event**

**Sponsor:** Graduates of the Last Decade, Northern Virginia Chapter  
**Time:** 6:30 pm to 10 pm  
**Place:** eCiti Restaurant & Bar McLean, 1524 Spring Hill Rd. (entrance on Tyco Blvd.), McLean, VA.  
**More Info:** All GOLD members are welcome to attend.  
**Cost:** Food and drinks provided.  
**Contact:** RSVP to Syed Ahmed at [syed.f.ahmed@ieee.org](mailto:syed.f.ahmed@ieee.org) or Chuck Baldi at [cbaldi@ieee.org](mailto:cbaldi@ieee.org).

**Tuesday, December 7, 2004**

**Washington Section Administrative Committee Meeting & Engineers Without Borders Presentation**

**Time:** Dinner at 6:00 pm; meeting at 6:30 pm, Engineers Without Borders at 7:30 pm  
**Place:** Allie's American Grill, Bethesda Marriott, 5151 Pooks Hill Rd., Bethesda, Md.  
**Directions:** From the north, take 270 South to Route

355 and exit at Wisconsin Ave. From the south, take 495 exit 34 (which is Wisconsin Ave.) to Pooks Hill Rd.

**More info:** Engineers Without Borders is an exciting program that promotes engineering projects to help people around the world. Please see the related story, page 1. All interested IEEE members are welcome to attend.

**Contact:** Jackie Hunter 703-803-8701 or [j.hunter@ieee.org](mailto:j.hunter@ieee.org). Please include the term IEEE in the subject line of your e-mail.

**Tuesday, December 7, 2004**

**Consultants Network Annual Business Meeting and Election**

**Sponsor:** Consultants Network, Washington and Northern Virginia Chapter  
**Time:** Dinner at 6:00 pm; meeting at 7:00 pm  
**Place:** Corner 7 Café, Tysons Corner Marriott, 8028 Leesburg Pike, Vienna, VA  
**Directions:** From the east or I-495, take Route 7 West, turn right on Towers Crescent Drive, then immediately right into the Marriott parking lot. From the west on Route 7, turn right onto Old Gallows Road just opposite the Marriott, proceed around to the left until you have completed almost a full circle, and turn left into the Marriott parking lot. Free parking.  
**More Info:** We will hold our annual business meeting and election of new officers. There will also be an opportunity for networking.  
**Contact:** Sai Chiang at 703-203-0771 or [creativestems@ieee.org](mailto:creativestems@ieee.org).

**Wednesday, December 8, 2004**

**Northern Virginia Section Administrative Committee Meeting**

**Time:** Dinner at 6:00 pm; meeting at 6:30 pm  
**Place:** Corner 7 Café, Tysons Corner Marriott, 8028 Leesburg Pike, Vienna, VA  
**Directions:** From the east or I-495, take Route 7 West, turn right on Towers Crescent Drive, then immediately right into the Marriott parking lot. From the west on Route 7, turn right onto Old Gallows Road just opposite the Marriott, proceed around to the left until you have completed almost a full circle, and turn left into the Marriott parking lot. Free parking.  
**More info:** All interested IEEE members are invited to attend.  
**Contact:** Jackie Hunter at 703-803-8701 or [j.hunter@ieee.org](mailto:j.hunter@ieee.org). Please include the term IEEE in the subject line of your e-mail.

**Thursday, December 9, 2004**

**Power Engineering Society Meeting**

**Sponsor:** Power Engineering Society, Northern Virginia Chapter  
**Time:** 6:30 pm  
**Place:** KEMA Consulting, 4400 Fair Lakes Court, Fairfax, VA  
**More Info:** Please see the eSCANNER for details about the topic and speaker not available at press time.  
**Contact:** Sirak Belayneh at [sbelayne@addistech.com](mailto:sbelayne@addistech.com) or 202-787-2356.

**Tuesday, December 21, 2004**

There will be no Maryland meeting of the Consultants Network in December.



# DIAMOND STORIES



## Wednesday, November 3, 2004 Making A Many-Colored Processing Engine: Signal Processing with Optical Filters

(Sponsored by W/NV LEOS Chapter)

The ultimate information capacity of optical fibers is far beyond currently deployed systems, even with the exponential growth in system capacity over the past 20 years. Even now, the performance of high-capacity long-distance wavelength-division-multiplexed (WDM) networks depends significantly on reconfigurable optical filters for bandwidth management and adaptive filters for compensating analog impairments. Optical filters are also key elements in optical code generation and detection with applications in optical packet header processing. Whether the end goal is for communications or high-speed signal processing, optical filters that can operate on amplitude, phase and polarization are critical to unleashing the full potential of optical systems. To be practical, a cost-effective implementation that can scale in optical circuit integration density and functionality is required.

This talk addresses optical filters in the context of their analog and digital relatives. Dr. Madsen will show how well-known filter types are related to the underlying interference mechanisms and how digital filter theory concepts are beneficially translated to the optical domain. Then, the present capabilities of integrated optics for implementing adaptive optical filters and an overview of some challenges ahead will be discussed. Adaptive filters implemented using high-index-contrast silica-on-silicon planar waveguides with applications to tunable chromatic dispersion compensation and polarization monitoring, control and polarization mode dispersion compensation will be used as examples. With state-of-the-art integrated optical filters, we have the ability to realize a many-colored, high-speed and cost-effective processing engine that truly harnesses the power of photonics.

**Dr. Christi K. Madsen** is a distinguished member of the technical staff at Bell Laboratories, Lucent Technologies, an IEEE Senior Member, and an OSA Fellow. She received a B.S.E.E. from the University of Texas at Austin in 1986, a M.S.E.E. from Stanford University in 1987, and her Ph.D. degree from Rutgers University in 1996, all in electrical engineering.

She joined AT&T Bell Laboratories in 1987. Her research has focused on the application of digital filter and signal processing techniques to optical filters for high-speed, high-capacity optical communication systems. In 1998, Dr. Madsen invented a class of tunable, multi-stage optical allpass filters that allow any phase response to be approximated and have application in chromatic dispersion compensation and polarization mode dispersion compensation. She holds 14 U.S. patents and has presented more than 70 technical talks and papers.

## Wednesday, November 3, 2004 What is Outsourcing Costing Us? and You Can Get Here From There

(Sponsored by WIE)

Two topics will be covered: one biographical and one research on an IT topic that is much in the news. The research part, "what is all of this outsourcing really costing?" examines outsourced software projects and the implications to organizations in terms of real

costs and risks. The biographical part, "you can't get here from there," includes anecdotes, pitfalls, career detours and the continuing saga of life as a woman engineer. Discussion and a Q&A session will follow.

**Dr. Anita J. La Salle** is a professor, chair of the Information Technology Department, and director of the M.S. in Information Technology Management program in the Kogod School of Business at American University in Washington, D.C. Dr. LaSalle earned her B.S. and M.S. in mechanical engineering from the New Jersey Institute of Technology and her Ph.D. in computer science from Stevens Institute of Technology. She has more than 40 years of experience in industry, government and academe, and is currently a consultant to the National Science Foundation. She has published more than 40 journal articles, book chapters, and conference proceedings. Her primary research focus is in the areas of software project risk analysis and the hidden costs of software project outsourcing.

**Monday-Wednesday,  
November 8-10, 2004**

## Wireless Certification and Telecommunications Certification Body Requirements Workshop

(Sponsored by W/NV EMCS Chapter)

This three-day tutorial will be directed primarily at engineers seeking to understand the testing and regulatory requirements for wireless equipment. Held in cooperation with the Federal Communications Commission and ETS-Lindgren, the course content will focus on measurements and approvals procedures needed for radio products sold in the United States.

The Nov. 8 session slated for the FCC Laboratory in Columbia, MD is entitled "Rules and Roles of Telecommunications Bodies" and will be presented by FCC engineers and staff. The sessions to be held at Washington Labs in Gaithersburg, MD on Nov. 9 and 10 will emphasize testing and laboratory requirements, SAR issues, certification procedures, and demonstrations.

Attendees will have the opportunity to meet representatives from the Chinese Ministry of Post and Communications, who are attending this conference as part of an exchange program between the United States and China.

**Tuesday, November 16, 2004**

## Imaging in the THz: Technology and Applications

(Sponsored by W/NV MTTTS Chapter; W/NV LEOS Chapter; W/NV EDS Chapter; W/NV NPSS Chapter; W/NV CCS Chapter; and Optical Society of America (National Capital Section))

*"Since we have become accustomed to think of waves of electrical energy and light waves as forming component parts of a common spectrum, the attempt has often been made to extend our knowledge over the wide region which has separated the two phenomena and to bring the closer together."* [Rubens, H. & Nichols, E. F., Phys. Rev. 4 (1897)

314-323]. More than a century after these words were written, the terahertz ( $10^{12}$  Hz) still remains the most immature and underutilized part of the electromagnetic spectrum.

This talk will discuss some of the potential applications for which the THz might be most

**DIAMOND STORIES**

*continues on page 6*

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**INFORMATION SESSIONS**

Tuesday, Nov. 9, 2004  
Thursday, Nov. 11, 2004  
Wednesday, Nov. 17, 2004

6 p.m. - 7:30 p.m. Room 204

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## Nanotechnology Innovations Featured at Electron Devices Society Meeting

By Hrayr Sayadian, Ph.D., J.D.  
Chair, Electron Devices Society,  
Northern Virginia and  
Washington Chapter

Nanotechnology was the focus of a presentation co-sponsored by the Electron Devices Society, Northern Virginia and Washington Chapter, on July 29, 2004, as part of the ongoing Atlantic Nano Forum activities.

The presentation, "Innovative Technologies," featured two nanotechnologists: Van Crocker, director of intellectual property for NanoInk, Inc., and Sam Antrazi, president of 4Wave, Inc. Mr. Crocker discussed Dip Pen Nanolithography™, and Mr. Antrazi discussed Atomic Layer Engineering through ion beam deposition. The presentation was moderated by Hrayr Sayadian, principal of Sayadian Patent Law Office.

NanoInk, Inc. is a Chicago-based company commercializing the Dip Pen Nanolithography™ (DPN) meth-



IEEE members who attended the Electron Devices Society meeting in July learned about the latest innovations in nanotechnology.

od of nano-scale manufacturing. The DPN™ process was developed by Professor Chad Mirkin at the Northwestern University Nanotechnology Institute. It is a patented

process used to build nanometer scale structures and patterns by drawing materials directly onto a surface. Mr. Crocker described how DPN users can build at resolutions

ranging from many micrometers down to 15 nanometers, using virtually any material, and he explained how these features enable numerous commercial applications.

4Wave has been selected as a SEMI showcase company for innovations in thin film processing. It provides advanced thin film technologies used in the production of nanometer-scale components in the computer and telecommunications industries.

Mr. Antrazi described the importance of atomically engineered thin-film devices to future integrated circuit memory elements, integrated circuit transistors, extreme ultraviolet lithography masks, disk-drive heads, and telecommunications lasers. He explained how 4Wave developed technologies enable the fabrication of thin film materials at the atomic scale, with Angstrom level precision and functionality.

For more information on the activities of the Electron Devices Society, Northern Virginia and Washington Chapter, see [www.ewh.ieee.org/r2/no\\_virginia/eds](http://www.ewh.ieee.org/r2/no_virginia/eds).

## GOLD Northern Virginia Chapter Announces New Officers for 2005

By Syed F. Ahmed  
Chair, GOLD,  
Northern Virginia Chapter

The many accomplishments of the Northern Virginia Chapter of the Graduates of the Last Decade (GOLD) affinity group during the past year include sponsoring of an outreach event at the Parkview Community Center in Washington, DC to promote awareness of electrical engineering among community youth. GOLD and the Computer Society co-sponsored a technical presentation on network forensics. We teamed up with IEEE-USA to participate in Engineering Week back in February. We have also sponsored several networking events, including a joint picnic with the IEEE Northern Virginia Section.

I am also pleased to announce new officers for 2005, as follows:

Chair: Chuck Baldi  
Vice Chair: Kerry Hartman  
Treasurer: Van Le  
Secretary/Web: Lowell Turner  
Membership: Syed F. Ahmed

Please welcome the new officers. We will continue to grow the IEEE Northern Virginia GOLD affinity group with your help in the future.

### DIAMOND STORIES

*continued from page 5*

useful and describe some of the key component developments which must be made in order to exploit the THz for commercial and government applications. In particular, the concept of THz imaging for remote sensing will be considered. Despite its generally limited atmospheric propagation, the THz has the potential to provide sensor information in IR-blind conditions (e.g., fog, rain, dust, smoke). Furthermore, THz imaging could offer clear advantages over conventional (i.e., MMW) all-weather imaging approaches. A current DARPA program, Terahertz Imaging Focal Plane Array Technology (TIPT), is focused on the development of such a class of sensors. Component technologies that are being addressed include high power sources, detectors, and integration technologies. Such technologies stand not only to revolutionize THz imaging, but will also find wide applicability to other emerging THz applications.

**Dr. Mark J. Rosker** joined the Defense Advanced Research Projects Agency in July 2003. Dr. Rosker came to DARPA from NASA's Jet Propulsion Laboratory (JPL) in Pasadena, CA, where he was a member of the Submillimeter Wave Advanced Technology Group. Dr. Rosker is the author of more than 70 technical papers and conference proceedings.

### Wednesday, November 17, 2004 A Flexible Rapid-Prototyping System for High Power Converters (Sponsored by Washington CSS Chapter)

Although digital controllers offer an enormous benefit to power electronic designers, they are far from perfect. In some cases moving to a digital controller just trades one set of design problems for another. Fixed point controllers require work on the front end to determine scaling factors, and if the right debug tools are not available, then information about the system can be hidden from the designer. Mr. Smith will discuss a system for using a MATLAB target PC as a closed-loop controller in a power electronics circuit. The key piece is a Power Interface Board which uses an FPGA to tie the power system to MATLAB's controller. He will explore the unparalleled ease with which controllers can be developed using this system and will give examples of the complex systems it is capable of producing.

**Chris Smith** graduated from Virginia Tech with a B.S.E.E. in computer engineering in the fall of 2001. His interest in hybrid vehicles brought him to the power electron-

ics field where he worked on his master's degree in electrical engineering also at Virginia Tech. With a strong computer background he primarily concentrated on implementation of control systems for power electronics. His experience in motor drives, high power conversion, microprocessors, and fuel cells totals more than 4 years.

### Thursday, November 18, 2004 Modern Tiger Teams (Sponsored by W/NV EMS Chapter, and WIE)

**Dr. Alex Pavlak** (Ph.D. M.Eng., P.E.) is an engineer who has led several successful Tiger Teams. Prior to 1992, Dr. Pavlak spent 8 years managing ballistic missile R&D projects for General Electric; 8 years as the president of ConSuntrator, Inc., a solar energy R&D company; and 9 years as director of low frequency active sonar at Martin Marietta. For the past 12 years, he has been investigating the limits of expert problem solving teams. He offers training workshops; coaching services for workgroups and disrupted projects; guest lectures and talks on the topics of Tiger Teams, project troubleshooting, problem-solving, advanced teamwork and system synthesis.

## New Managing Editor Joins SCANNER Staff

Elsie Grant has been named managing editor of the IEEE National Capital Area SCANNER. She will report to Peter Sypher, editor, and will work with Kerry Hartman, Northern Virginia Section editor, and Doug Holly, acting Washington Section editor.

As the managing editor, she is responsible for compiling, editing and publishing the SCANNER, which is mailed six times a year to members in the Washington and Northern Virginia sections.

Ms. Grant brings more than 20 years of experience in editing, technical writing and publications design to the position.

She holds a B.A. in journalism from the University of Maine and an M.F.A. from the Maryland Institute College of Art.

In addition to the printed newsletter, Ms. Grant's responsibilities include updating the monthly eSCANNER, which is available on



Elsie Grant

the Internet at <http://ewh.ieee.org/r2/capitalarea/eSCANNER>, and compiling a monthly eSCANNER message, which is sent to all members of the two Sections with a valid email address on file, to notify them of upcoming meetings and other activities.

## Washington Academy of Sciences Seeks Science Fair Judges

The Washington Academy of Sciences (WAS) is expanding its Science and Technology Aptitude Recognition for Schools (STARS) youth-in-science outreach program, and is recruiting volunteers to assist with judging school science project contests.

Last year, the program included not only participation in senior high school science fairs, but also a pilot program at Burning Tree Elementary School, a robotics competition involving 22 Middle Schools, and participation in a space science summer camp.

WAS is interacting with many area schools and allocating a large number of awards to secondary school students. Award winning student projects will be recognized in the WAS Journal and on its website.

Volunteers will have the opportunity to participate as a judge in

one or more school science project contests. Typically this will involve about a four-hour commitment at a participating school in the Washington, D.C., Maryland or northern Virginia area, sometime between January 15 and March 31.

The number of schools and students benefiting from the STARS program depends on the commitment of the volunteers who participate as judges. "Our biggest asset is your expertise and dedication," said Paul Hazan, WAS vice president for the Junior Academy.

If you are interested, please send a one-line email message by November 30 to Mr. Hazan, at [pmhazan@washacadsci.org](mailto:pmhazan@washacadsci.org). Please state, "I would like to be included in the WAS Judges' Roster," and include your name, email address, postal address and telephone number. You will be notified as soon as the schools set their event dates.

## UMD CHAPTER OF EWB

*continued from page 1*

"Along with the outstanding accomplishments of the students and the faculty that we have come to expect from an excellent college of engineering, there is a fundamental desire emerging among our students to ensure that their engineering has positive and meaningful social impact," she said. "We see this in the development of the new master's in engineering and public policy program, [which is] expected to admit students as early as January 2004. And we see it in a new organization, Engineers Without Borders."

Five student members of the University of Maryland EWB chapter traveled to northern Thailand with their faculty advisor in June to build a health center for the Lisu hill tribes. They worked in collaboration with two other student chapters. In the eight days they spent on site, they undertook the final design and construction of the waste treatment system for the health center, including outside plumbing, installation of a septic tank, and construction of the leach field. On rainy days, they focused on finishing work inside the building, including completing the wiring for the center.

The students worked alongside Lisu villagers, under the direction of Jason Priebe, an aeronautical engineer from Colorado, and Johnny Morse, an American resident of Thailand, with the assistance of tri-lingual (Lisu, Thai, and English) Thai co-workers.

The health center is operational,



Lisu villagers watch a University of Maryland student work on the installation of a septic system for a new health center.

and will be dedicated by the Queen of Thailand later this year. In September, the University of Maryland chapter received an award from the national EWB organization recognizing the success of the chapter's collaboration on the project in Thailand.

Energized by their first success, the students have started design work for a second project located on a Native American reservation in South Dakota. Native American reservations are the only American communities eligible for EWB projects, as the strong focus of the organization is on the pressing needs of the developing world. Design for that project will

take place over this academic year, and construction is scheduled for early in June 2005. The chapter is also hoping to return to Thailand for another project, and is working toward selecting an additional international project in another country.

Practicing engineers are key partners to the student team at all stages of the process to ensure the project will serve the needs of the community effectively and over the long term. Student enthusiasm and commitment are contagious, and the EWB chapter invites practicing engineers to lend their support to its projects.

You can visit the University of Mary-

land Engineers Without Borders student website at [www.eng.umd.edu/ewb](http://www.eng.umd.edu/ewb), and the national website at [www.ewb-usa.org](http://www.ewb-usa.org).



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## Robert D. Misner

Robert David Misner, 84, an electronic scientist who served as a U.S. Naval Officer during World War II, followed by a 50-year career with the Naval Research Laboratory (NRL), passed away August 28, 2004.

Mr. Misner was born in Waynesville, Illinois on May 1, 1920, son of Oscar L. Misner and Elizabeth Clara Nyren Misner. Robert Misner was valedictorian of Waynesville Township High school. He received a physics degree from Illinois Wesleyan University and George Washington University.

Mr. Misner specialized in electronic warfare, intelligence, and magnetic recording research. Not only was he the Navy's leading expert on high-performance, wide-bandwidth, high-dynamic range instrumentation magnetic tape recorders, but also under his leadership, the Signal Exploitation Branch at NRL made fundamental contributions to the Navy's abil-



Robert D. Misner  
(1920-2004)

ity to intercept, identify, and counter enemy communications signals that are still in use today. He also founded an electronic engineering and consultant business, MEMRE, furnishing research, production and equipment

in the data recording area.

His honors and awards include the U.S. Navy Distinguished Civilian Service Award, the Navy's highest honorary award to civilian employees, the Navy Meritorious Civilian Service Award and the Silver Medal for Electronic Warfare Technology. In June 1998, he was awarded the Naval Space Technology Medallion. This public recognition, after 38 years of secrecy, was for his contributions toward the development and successful operation of our Nation's first reconnaissance satellite. Also in 1998, on the occasion of the Laboratory's celebration of its 75th anniversary, his work on the Navy's High Frequency Direction Finding system was recognized as part of one of NRL's 75 greatest accomplishments.

He was a member of the Institute of Electrical and Electronics Engineers; Sigma Xi; the Scientific Research Society; American Association for the Advancement of Science; and the Association of Old Crows. Mr. Misner was listed in

Who's Who in American Men of Science, the Dictionary of International Biography, and the National Register of Prominent Americans.

Mr. Misner also was active in agriculture and grain farming. He played an active part in soil conservation activities and wildlife protection, and enjoyed managing his Illinois farms. He was a resident of the Washington, D.C. area since 1942 and a member of the Anacostia Methodist Church, Friendly Methodist Church and most recently the Mt. Vernon United Methodist Church in Alexandria, Virginia.

He was married on June 4, 1949 in Bloomington, Illinois to Virginia Bernice Fuehrer. She preceded him in death, in 1999, after 50 years of marriage. He is survived by and was devoted to his two daughters, Robin Beth Boatman and Christie Marie Motley, and five grandchildren, Raina and Riviera Boatman and Matthew, Natalie and Collin Motley.

## Conferences Focus on Wearable Computers, Mixed Reality and Augmented Reality Fields

The 3rd IEEE and ACM International Symposium on Mixed and Augmented Reality (ISMAR04) will be held November 2-5 at the Double Tree Crystal City in Arlington, VA. It will be collocated with the 8th IEEE International Symposium on Wearable Computers (ISWC04) October 31-November 3, to bring together the MR/AR and wearables communities.

In the last decade, mixed reality (MR) and augmented reality (AR) have evolved from being experi-

mental technologies to mainstream research activities that are starting to show impact on industry and society. By their very nature, MR and AR are highly interdisciplinary fields involving signal processing, computer vision, computer graphics, user interfaces, human factors, wearable computing, mobile computing, computer networks, distributed computing, information access, information visualization, and hardware design for new displays and sensors. MR/AR con-

cepts are applicable to a wide range of applications.

The International Symposium on Mixed and Augmented Reality is the premier forum in the field. A series of independent conferences on augmented reality and mixed reality started in 1998, and led to the first joint symposium in 2002.

This is a great opportunity for the exchange of new ideas in this exciting field! For more information, see the conference web sites at <http://www.ismar04.org> and <http://iswc.net>.

## IEEE Virtual Community Requires Web Account

As of November 15, an IEEE web account is required to participate in the IEEE Online Communities. If you do not have an IEEE web account yet, register for one at <http://services1.ieee.org/membersvc/registration/intro.htm> for IEEE members, and at <http://shop.ieee.org/IEEEStore/signin.aspx?returnURL=default.aspx> for non-members (click on the link to "All other valued customers").

If you are already a member of the virtual community, please update your online community profile with your web account login name and password. This can be done by:

1. Logging in as usual at <http://www.ieeecommunities.org>.
2. Clicking on the "Edit Profile" link on the main page.

3. Adding the IEEE Member Number to the designated field.
4. Changing the User Name to the IEEE Web account user name.
5. Clicking on the "Update Account" button at the bottom of the page.
6. Back at the main page, clicking on the "Change Password" link.
7. Enter the current password and the Web account password in the design-

nated fields and click the "Change Password" button.

If you have not participated in the community in the last 365 days, you should have received by now an email notifying you of the cancellation of your membership in the community. You are welcome to re-join the community using your IEEE Web Account.

## AESS Seeks Officer Nominations

The Aerospace and Electronic Systems Society, Northern Virginia and Washington Chapter, is seeking nominations for officers. Chair, co-chair, secretary, meeting coordinator and other positions are available.

Officers will be elected at the next AESS meeting. If you would like to become involved in AESS, please contact Dr. Dan Purdy at 703-588-1920 or [purdyd@onr.navy.mil](mailto:purdyd@onr.navy.mil); or Roger Oliva at [roger.oliva@anser.org](mailto:roger.oliva@anser.org).

## Members May Change Their Section Affiliation

As an IEEE member, your mailing address automatically determines your Section affiliation (i.e., Northern Virginia, Washington, Baltimore, etc.). However, you may choose to affiliate with a neighboring Section instead of the one assigned. This is a common request from commuters who live near Section boundaries.

Once the change is made, you will receive meeting notices, newsletters and other information from the new Section, and only that Section. You will be on the new Section's roster with the mailing address provided. Contiguous Section affiliation status remains on your record until such time as it is manually removed. If you relocate out of the area contiguous to the Section assignment requested, you will be automatically reassigned to the appropriate Section.

To make a request for change of Section affiliation, you can send an email to [contiguous@ieee.org](mailto:contiguous@ieee.org). The email must include name, member number, current Section and the Section with which you wish to be affiliated.