

SCANNER

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TIMOTHY R WEIL

SECURITYFEEDS

PO BOX 11135

TAKOMA PARK MD 20913-1135

Northern Virginia Section Hosts NCA Annual Awards Banquet



Thomas Tullia (left), IEEE Region 2 Chair, presents the IEEE Regional Activities Board (RAB) Achievement Award to Amarjeet S. Basra, for his outstanding contributions in promoting IEEE to college and pre-college students within the IEEE Northern Virginia Section.

By Kerry Hartman
Northern Virginia Section Editor

Over a hundred members and guests from the Northern Virginia and Washington Sections of the IEEE attended

the 2005 National Capital Area Annual Awards Banquet, which was hosted by the Northern Virginia Section in the Grand Ballroom of the Tysons Corner Marriott in Vienna, Virginia on the evening of Saturday, April 16. This gala

event is held every year to celebrate the sections' achievements over the last year and to honor the individuals and organizations who make them happen. The banquet also provides a social opportunity for spouses and partners of members to meet some of the rest of the local IEEE community.

Northern Virginia Section Chair Murty Polavarapu served as master of ceremonies, and the keynote address was delivered by Dr. Hratch Semer-

jian, Acting Director of the National Institute of Standards and Technology (NIST). Following the opening remarks and introductions by Mr. Polavarapu, Dr. Semerjian spoke to the audience about the vital importance of technological innovation to our nation's future, the disturbing trends in worldwide comparative R&D activ-

AWARDS BANQUET

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Oceans 2005 Conference Embraces Global Theme of 'One Ocean'

Humans have always lived along and worked on the massive bodies of water that we know as individually-named oceans, but only recently has the concept emerged of a single global ocean shared by the world community. No matter what organizations or individuals do, their activities influence other actions that in turn affect our global ocean. Today various sources of stress continue to build rapidly and dynamically, and unless we take the right action now, we may well miss the

opportunity to ensure the future of our "One Ocean."

In September, the Oceans 2005 MTS/IEEE international conference will bring together in Washington, D.C. those from around the world who want to make a difference. The annual gathering is a major forum for ocean scientists, engineers, industry end users and suppliers, technologists, educators

OCEANS 2005

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Workshop to Focus on Career Management

An IEEE National Capital Area workshop on Saturday, September 24 will focus on active career management in a time of great transition in jobs and employment.

The workshop will expose participants to information and techniques needed to proactively manage their careers through these turbulent times. Speakers will present the basics of project management and discuss how they can be effectively applied to increase success in professional and personal activities.

Sample topic areas include project management, career shifts caused by rapid and progressive changes in the U.S. workplace, career defense in the face of globalization, and career transitions.

Lunch will be included in the all-day workshop, which will be held at Mitre Corporation in McLean, Virginia. Members of the IEEE Northern Virginia and Washington Sections may attend at no cost. To register, send an email to Jackie Hunter at nca-admin@ieee.org. Please include "National Capital Area Workshop on Active Career Management" in the subject line.

The workshop is being organized jointly by the IEEE Northern Virginia and Washington Sections with the help of IEEE-USA's Professional Activities Committee for Engineers (PACE).

For more information, contact Amarjeet Basra, chair of professional activities for the Northern Virginia Section, at amarjeet.basra@ieee.org, or Shyam Bajpai, chair of professional activities for the Washington Section, at s.bajpai@ieee.org.

Women in Engineering Plans August Meeting

The Washington and Northern Virginia sections will hold a Women in Engineering 2005-06 Kickoff Meeting in August. The date, location and other details will be announced in the online eScanner Calendar of Events. Please check <http://ewh.ieee.org/r2/capital-area/eSCANNER> (case sensitive). For more information, contact Debi Siering at siering@ieee.org.

IEEE International Radar Conference Draws 600 Engineers to Washington

By Mike Cardinale

Do you want to learn the latest in reducing phase noise in traveling wave tubes? How about track data fusion? Engineers from around the world gathered for the 2005 IEEE International Radar Conference, which was held in Northern Virginia from May 9 through May 12, to hear just that.

The international conference, held annually and rotated among host countries, convenes in the Washington area every five years. As in previous years, the IEEE Aerospace and Electronic Systems Society, the Northern Virginia Section, and the Washington Section hosted this conference along with the Institution of Electrical Engineers of the United Kingdom.

RADAR CONFERENCE

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Maj. Gen. George Harrison spoke about radar in the 21st century at a banquet during the 2005 IEEE International Radar Conference.

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Editorial Policies and Procedures

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. 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.

On the Web

eSCANNER Calendar of Events

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

IEEE National Capital Area Virtual Community

Exchange ideas and participate in discussions with local IEEE members at www.ieee-communities.org/nca.

Advertising

Contact the 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 September–October issue is August 1, 2005

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CALENDAR OF events

Tuesday, July 5, 2005

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 nca-admin@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Wednesday, July 13, 2005

Northern Virginia Section Administrative Committee Meeting

Time: 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 nca-admin@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Wednesday, July 20, 2005

Observer Systems in Power Electronics

Sponsor: Control Systems Society, Washington Chapter
Speaker: Mike Gilliom, Fairchild Controls Corp.
Time: 12 noon, pizza provided
Place: Fairchild Controls Corp., 540 Highland Street, Frederick, MD
More Info: See Diamond story, below.
Contact: Please RSVP by July 18 to Mike Gilliom at 301-228-3591 or mgilliom@fairchildcontrols.com.

Thursday, July 21, 2005

There will be no meeting of the Industrial Applications Society and Power Engineering Society chapters in July.

Tuesday, August 2, 2005

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 nca-admin@ieee.org. Please include the term IEEE in the subject line of your e-mail.

Wednesday, August 10, 2005

There will be no meeting of the Northern Virginia Section Administrative Committee in August.

Thursday, August 18, 2005

There will be no meeting of the Industrial Applications Society and Power Engineering Society chapters in August.

DIAMOND STORY

Wednesday, July 20, 2005

Observer Systems in Power Electronics

Power electronics is becoming more and more a popular and low cost solution for power conversion applications. Due to the nature of power electronics, it is also becoming a greater interest to the control systems community as a whole. Complex conversion topologies are creating a demand for complex controllers, and the transient nature of power converters is generating interest in hybrid and adaptive controllers as well. In the interest of lowering cost, observer-based

controllers may be used to approximate system characteristics, but the designer must first overcome obstacles with linearization and error drift.

Mike Gilliom graduated from Virginia Tech with a B.S.E.E. in 2002. He is currently working to complete his master's thesis which deals with complex control systems in the field of power electronics. He has been working with control systems in power electronics for four years and has a strong interest in bringing more powerful and complex controllers into the field of power conversion and motor drives.

RADAR CONFERENCE

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Six hundred attendees from around the world participated in the conference's technical sessions, tutorials and exhibits. Meanwhile, their families and companions were provided opportunities to tour the museums and sights of Washington and Baltimore. During downtime, attendees availed themselves of the relaxation and easy radar reading in the Fred Nathanson Memorial Study Center. The Study Center, named for early radar pioneer Fred Nathanson, featured a library of radar books, along with a copier, comfortable reading chairs, and plenty of complementary coffee. Fred was a Fellow of the IEEE and spent the early part of his radar career at Johns Hopkins University Applied Physics Laboratory.

Held at the Crystal Gateway Marriott, the conference opened with a welcome by the conference chair, Tom Fagan. This was his third and final year as the general chair. It was followed by short videos of leaders of various supporting countries welcoming the attendees. Then, Dr. Taylor Lawrence of Northrop Grumman chaired the keynote session and a discussion panel on The Future Directions in Spaced Based Radar.

Technical sessions included radar systems, components integration, radar data and signal processing, phenomenology, adaptive processing, tracking, synthetic aperture radar (SAR), antenna technology, simulation, and emerging technologies. These papers featured leading research by world renowned and rising young researchers and practitioners in the radar field. In addition, 35 students from around the world presented technical poster papers that showed the varied and vibrant research ongoing with radar systems. An award for the best student paper was presented to Igal Bilik from Israel.

Tutorials included an Introduction to radar, radar cross section, electronically scanned radar systems, tracking and Kalman filtering, SAR, bistatic radar, space-based radar, radar for automotive applications, radar waveform design, radar performance modeling, and clutter modeling. Local members Dr. Scott Goldstein and Dr. Mike Picciolo, both with Science Applications International Corp. (SAIC) in Virginia, double teamed to deliver an informative tutorial on space-time adaptive processing (STAP). Dr. Joe Guerri from the Defense Advanced Research Projects Agency (DARPA) presented an advanced tutorial on knowledge-aided STAP.

At the Wednesday evening banquet, Dr. Muralidhar Rangaswamy, who is an IEEE Senior Member, was presented the 2005 Nathanson Young Engineer Award for his work in non-Gaussian clutter modeling and adaptive signal processing, his extensive publications on radar research, and his support of numerous IEEE activities, including the Transactions on Aerospace and Electronic Systems. Mr. John Entzminger Jr. was presented the Warren D. White award for contributions to the art of radar engineering. Mr. Entzminger, a Fellow of the IEEE, received the reward for his distinguished 38-year career and his leadership in defense research and development in the critical areas of intelligence, surveillance, reconnaissance and targeting sensors.

The banquet speaker was Major General George Harrison, who spoke on 21st Century Radar—What Do Users Want. He is director of strategic initiatives at the Georgia Tech Research Institute, Atlanta, Georgia.

As a final note, Mr. Fagan read a greeting during the banquet from President George W. Bush welcoming the attendees of the IEEE International Radar Conference to Washington, D.C.

Volunteers and Friends of IEEE are Recognized at NCA Awards Banquet

The following are the 2005 award recipients:

NORTHERN VIRGINIA SECTION AWARDS

Charles Sisung, Administrative Award, in recognition of his dedicated service as 2004 Treasurer.

Syed Ahmed, Administrative Award, in recognition of his dedicated service as 2004 Secretary.

Kerry Hartman, Volunteer of the Year, for dedicated and distinguished service to the Northern Virginia Section.

Communications Society Chapter, Outstanding Chapter, for providing an excellent speaker program and events for the chapter members.

KEMA, Inc., Sustaining Friend of IEEE Northern Virginia Section, for sponsoring Power Engineering Society Chapter meetings at their facility.

Mitre Corporation, Sustaining Friend of IEEE Northern Virginia Section, for hosting Northern Virginia Section events at their facility.

SAIC, Sustaining Friend of IEEE Northern Virginia Section, for support of Northern Virginia Section activities and events.

Alexandria Research Institute, Friend of IEEE Northern Virginia Section, for support of Northern Virginia Section activities and events.

Fred Seelig, Past Chair, Communications Society Chapter.

P. Jeffrey Palermo, Past Chair, Power Engineering Society Chapter.

Richard Chen, Past Chair, Control Systems Society Chapter.

Syed Ahmed, Past Chair, Graduates of Last Decade (GOLD) Affinity Group Chapter.

Amarjeet S. Basra, Past Chair of Northern Virginia Section, in recognition and appreciation for distinguished service and outstanding leadership.

Shery Salama, George Mason University Student Chapter President.

Myles Rodgers, DeVry University Student Chapter President.

Robert Moffatt, First Place, Fairfax County Regional Science and Engineer-

ing Fair, "Design of a Variable Gain Amplifier for TDLAS."

Kelly O'Briant, First Place, Northern Virginia Regional Science & Engineering Fair, "Increasing the Efficiency of Low Cost Solar Cells: A Study of Manufacturing Initiatives"

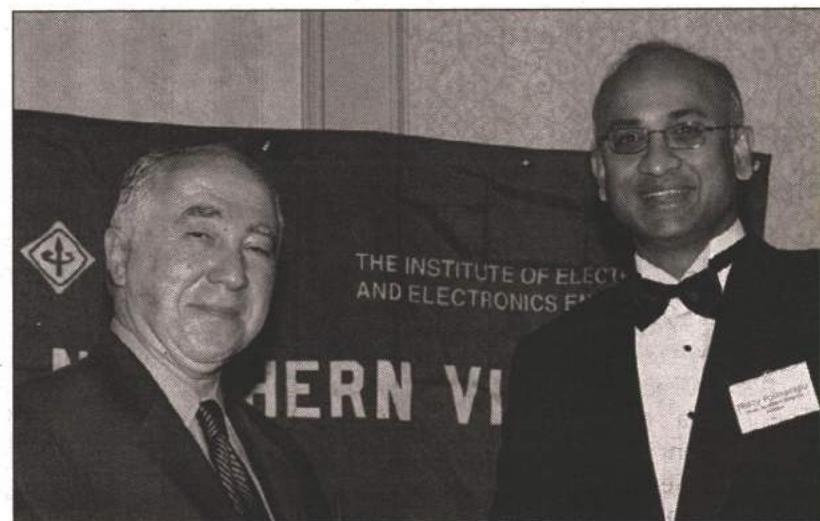
Mary Paul, First Place, Prince William-Manassas Regional Science Fair, "Flexing the Flux."

WASHINGTON SECTION AWARDS

Haik Biglari, Administrative Award, in recognition of his dedicated service as 2004 Treasurer.

Kiki Ikossi, Administrative Award, in recognition of her dedi-

NCA AWARDS
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Master of ceremonies Murty Polavarapu (right), chair of the Northern Virginia Section, thanks the banquet keynote speaker Hratch Semerjian, acting director of NIST.

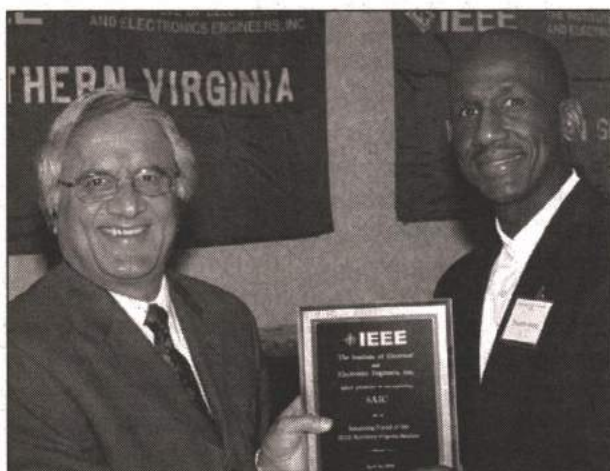


Patricia Strother congratulates Peter Sypher, recipient of the James F. Strother Meritorious Service Award, named in honor of her husband. Sypher received the award for his leadership and dedication to IEEE, Region 2 and the Northern Virginia Section.



Thomas Tullia (left), IEEE Region 2 Chair, presents the Dedicated Service Award, for distinguished service to the Washington Section, to Gideon Kantor.

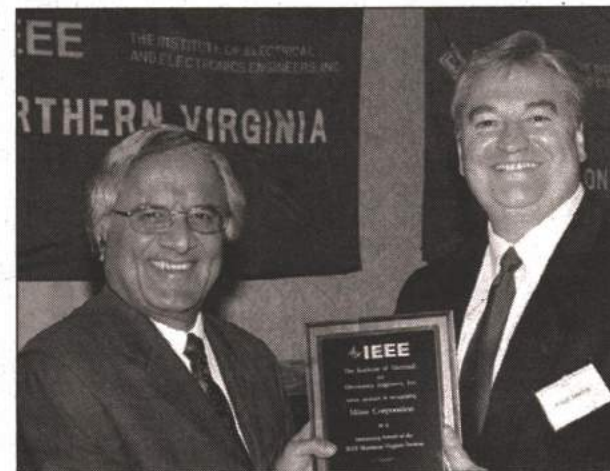
Sustaining Friends of IEEE Northern Virginia Section



Timothy Settle (right) accepts a plaque from Amarjeet Basra recognizing SAIC as a Sustaining Friend of IEEE Northern Virginia Section.



On behalf of KEMA, Inc., Jeffrey Palermo (right) accepts the Sustaining Friend of IEEE Northern Virginia Section award from Amarjeet Basra.



Fred Seelig (right) accepts the Sustaining Friend of IEEE Northern Virginia Section award from Amarjeet Basra, on behalf of his employer, Mitre Corp.

National Cryptologic Museum Offers Peek at Cold War Technology

By Pete Sypher
Scanner Editor

An interesting place to spend a half day on a hot Saturday this summer is the National Cryptologic Museum on a corner of Fort George G. Meade near Laurel, Maryland. The museum is in Building 9900 of Fort Meade, but there are no guards or checkpoints to pass when visiting the museum. Anyone with an interest in radio communications, cryptography, code breaking, or the picket flights we made during the Cold War will enjoy this museum.

Many of the displays, and the special aircraft at the adjacent National Vigilance Park, involve the reception of radio signals. Interception and radio direction finding go back to World War I days, as shown by the then state-of-the-art receiver in the "direction-finding tractor." There is a wall display on the Zimmermann Telegram, in which the Imperial German Foreign Minister proposed an alliance with

Japan and Mexico during WWI. The promised reward for Mexico was the return of part of the American Southwest.

There is a lot of electronic equipment for code-breaking intercepted signals, dating from World War II days. The German Enigma and Japanese Purple encryption/decryption devices are on display with explanatory materials. Our actions in both the European and Pacific theaters of WWII were greatly aided by our interception and code breaking of radio and cable traffic. The outcome of the naval Battle of Midway depended on our code-breaking efforts. You can see a movie about this battle and the role of code breaking in a small theater in the museum.

The museum, opened December 1993, is one result of an attempt to "demythologize" the National Security Agency (NSA). In the past, NSA was shrouded in almost complete secrecy. In the post-Cold War era, some revelation of NSA's activi-

ties was thought to be in the best interests of the agency, particularly with congressional appropriations in mind.

The museum is a creation of NSA, with some assistance from the Smithsonian. The display quality and interpretation of the museum's holdings equal or exceed the Smithsonian's. The museum has a good audio tour available. By stopping at the gift shop and surrendering your driver's license, you get a "portaphone" that has over 60 topics, selectable by a keypad.

Exhibits include a Cray supercomputer, mass-storage devices, and many encryption-decryption devices. These include the venerable KY-3 and the KW-7, and more recent crypto boxes, such as the KG-27, KG-81, KG-84, KG-85, KY-57, KY-65/75, KY-99, KY-100, the HY-2 vocoder, and the currently used STU-III. I would venture to say that there are many current and former workers in communication security in our membership who could show

their families the crypto boxes they used or installed.

Other displays feature espionage and aerial reconnaissance, and honor those who lost their lives flying in the vicinity of the totalitarian countries during the Cold War. The museum has a library, and you are free to wander through the stacks. Near the entrance are free pamphlets on cryptography, the KGB, aerial reconnaissance and the role of women in cryptography.

Near the old motel building housing the museum is National Vigilance Park. A footpath winds through a wooded area between the museum and the park. Three aircraft are on display, a RU-8D, a C-130 Hercules, and an EA-3B. The Army RU-4D is a modified Beechcraft L-23D twin-engine piston plane with a vertical dipole antenna on each wing, and the C-130A had an extensive suite of radio interception equipment aboard. The Navy EA-3B Skywarrior played a role in the Navy's secret reconnaissance war against the USSR and the Warsaw Pact countries.

The museum's hours are 9:00 am to 4:00 pm Monday through Friday, and 10:00 am to 2:00 pm on the first and third Saturdays of each month. The museum is closed on all federal holidays. It is behind the Shell station at the northeastern corner of the intersection of Maryland Route 32 and the Baltimore-Washington Parkway (Route 295). Admission is free. The museum's website can be viewed at www.nsa.gov/museum.

NCA AWARDS

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cated service as 2004 Secretary.

James C. Tilton, Chapter Chair of the Year, in recognition of his contributions to the Geoscience and Remote Sensing Society Chapter.

Doug Holly, Volunteer of the Year, for dedicated and distinguished service to the Washington Section.

Richard Benjamin, Past Chair of the Control Systems Society Chapter, in recognition and appreciation of his valued services and contributions.

Howard Needham, Past Chair of the Washington Section, in recognition and appreciation for distinguished service and outstanding leadership.

Nicholas Dobson, First Place, Prince George's Area Science Fair, "Do They Really Care If It Says Fragile."

Ameer Abutaleb, First Place, Montgomery County Science Fair, "A Nonlinear Analog VLSI Model for the Cochlea."

JOINT AWARDS

Karen Winstedt, Past Managing Editor, IEEE National Capital Area Scanner.

Daniel Purdy, Past Chair, Aerospace and Electronic Systems Society Chapter.

Vincent Karasack, Past Chair, Antennas and Propagation Society Chapter.

Hrayr Sayadian, Past Chair, Electron Devices Society Chapter.

Robert Munzner, Past Chair, Engineering in Medicine and Biology Society Chapter.

Saurabh Dalal, Past Chair, Lasers

and Electro-optics Society Chapter.

Eric Adler, Past Chair, Microwave Theory and Techniques Society Chapter.

Murty Polavarapu, Past Chair, Society for Social Implications of Technology Chapter.

David Booth, Past Chair, Life Members Affinity Group Chapter.

Kiki Ikossi, Past Chair, Women in Engineering Affinity Group Chapter.

2005 IEEE FELLOWS

The honor of IEEE Fellow is bestowed on the recipient who has had an extraordinary record of accomplishments in any of the IEEE fields of interest. The total number selected in any one year does not exceed one-tenth percent of the total voting Institute membership. The following newly elected Fellows are from the National Capital Area.

Jeremy E. Allnutt, George Mason University, Fairfax, Virginia, for contributions to the propagation of signals from satellites through the atmosphere.

Filbert J. Bartoli, National Science Foundation, Arlington, Virginia, for leadership in optoelectronic materials and devices.

William Gerard Bath, Johns Hopkins University Applied Physics Laboratory, Laurel, Maryland, for contributions to automation and netting of Navy radar systems.

Joseph Raymond Guerci, Defense Advanced Research Projects Agency (DARPA), Arlington, Virginia, for

contributions to advanced radar theory and its embodiment in real world systems.

John Melngailis, University of Maryland, College Park, Maryland, for contributions to focused ion beam applications.

Jerry Meyer, Naval Research Laboratory, for contributions to semiconductor optoelectronics.

Bruce Paul Strauss, United States Department of Energy, Washington, D.C., for leadership in low temperature superconducting materials and magnet systems.

Paul J. Werbos, National Science Foundation, Arlington, Virginia, for invention of backpropagation and pioneering of neural network training.

Junku Yuh, National Science Foundation, Arlington, Virginia, for contributions to autonomous underwater robots.

SPECIAL AWARDS

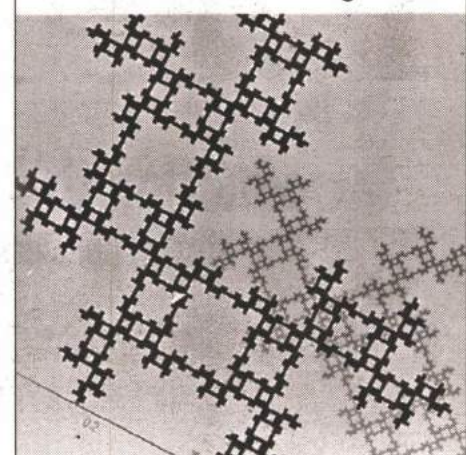
Peter Sypher, James F. Strother Meritorious Service Award, for his leadership and dedication to IEEE, Region 2 and the Northern Virginia Section.

Gideon Kantor, Dedicated Service Award, for distinguished service to the Washington Section.

Amarjeet S. Basra, IEEE Regional Activities Board (RAB) Achievement Award, for outstanding contributions in promoting IEEE to college and pre-college students within the IEEE Northern Virginia Section.

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200 Attend Student Professional Awareness Conference at GMU



GMU 2005 SPAC, May 4 – (left to right) Shery Salama, president of GMU IEEE Student chapter; Michael Katrivanos, webmaster; Dr. Guy Beale, faculty advisor; Abdi Hussein, secretary; and Khalid Al-Muhanna, vice president.

By Kerry Hartman
Northern Virginia Section Editor

On Wednesday, May 4, this year's edition of the annual GMU Student Professional Awareness Conference (SPAC) was held in George Mason University's Dewberry Hall. More than 200 students attended the day-long event, which was organized by the IEEE Student Chapter of GMU's School of Information Technology and Engineering, and supported by a large number of student volunteers. Highlights of the conference included attendance by Dean White

and local IEEE leaders, and presentations by several engineering professionals.

Faculty adviser Dr. Guy Beale opened the program and introduced the speakers. The roster of presentations began with an Introduction to Intellectual Property by patent attorney Kerry Hartman. Mr. Hartman discussed various forms of legal protection available for intellectual property and some of the differences between them. Also discussed were several career paths available in the field of patents and patent law. Mr. Hartman's presentation is avail-

able in zipped PDF form at <http://techlaw.8k.com/SPAC-2005.zip>.

The next speaker was Aristotelis Psitos, a senior primary patent examiner in the EE corps of the U.S. Patent and Trademark Office. Looking back on the remarkable changes during his 30-year career in electronics, Mr. Psitos welcomed new graduates to this exciting and rewarding field. Mr. Psitos also advised new engineers to be aware of the wide range of different career options available to them.

Alina Koos of Northrop Grumman Corporation provided a presentation on the growing industry of mobile communications and portable computing. Fred Seelig of Mitre Corporation topped off the program of speakers with his popular and career-savvy presentation on What You Look For in a First Job.

Photographs from the 2005 SPAC will soon be available on the chapter's website at <http://ite.gmu.edu/~ieee/main.htm>.

Student Club Completes First Year

By Amarjeet Basra

The IEEE Student Club at Thomas Jefferson High School for Science and Technology in Alexandria, Virginia is now fully established. The club wrapped up its first academic year at a May 25 meeting with a presentation by IEEE Life Member Bernie Rudwick. He talked to students about college planning, selection of a major, and job opportunities.

This is the first IEEE high school club at the Section level, and is a pilot project. The club's charter was presented to the students and faculty on October 27, 2004 at a meeting attended by Dave Booth, Sherry Salama, Myles Rodgers and Amarjeet Basra. The charter was signed on November 8 by Randy Latimer, student branch counselor, and Joshua Strong, division manager for science and technology. The charter was then approved by Region 2. The club

was inaugurated on December 8 at a meeting attended by Marc Apter, vice president of the IEEE Regional Activities Board, Dave Booth, Amarjeet Basra, and Shery Salama.

The Student Club charter provides that the management of the affairs of the Student Club shall be in the hands of an executive committee consisting of duly elected student officers, a counselor appointed by the Thomas Jefferson High School for Science and Technology, and a representative of the IEEE Northern Virginia Section.

The student members of the club elected a chair at the inauguration on December 8 and completed the election of vice-chair, secretary and treasurer at the next meeting on December 15. Dave Booth was appointed by the Section Chair as the Northern Virginia Section's representative to the Student Club for the school year.

AWARDS BANQUET

continued from page 1

ity and student interest in engineering, and NIST's prominent role in maintaining our innovative capabilities. A copy of Dr. Semerjian's presentation may be viewed online in PDF form at the IEEE National Capital Area Forum of the IEEE Virtual Communities (<https://www.ieeevirtualcommunities.org/nca>).

At the conclusion of Dr. Semerjian's address, the awards ceremony was held. Current Section Chairs Mr. Polavarapu and Ron Ticker (Washington) announced the awards, and Past Section Chairs Amarjeet Basra (Northern Virginia) and Howard Needham (Washington) were on hand to present each award to its recipient. In addition to the individuals honored for their service to the sections, the following local organizations were recognized for their continuing support to chapter and section activities: KEMA, Inc.; Mitre Corporation; SAIC; and Alexandria Research Institute.

The ceremony also included several special categories of awards. The IEEE winners from five area

high-school science fairs received awards and cash prizes, and some of the prize-winning exhibits were on display at the ballroom entrance. The nine newly elected IEEE Fellows from the National Capital Area were also recognized for extraordinary records of accomplishment in their respective fields. Region 2 Director Thom Tullia was on hand to present Special Awards to Amarjeet Basra, Gideon Kantor, and Peter Sypher for extraordinary leadership, service, and contributions to the sections. See p. 4 for lists of award recipients and photos.

The banquet was organized by Office Manager Jacquelyn Hunter. Highlights of the menu included country French chicken and a flourless chocolate cake. Thanks to all of the banquet attendees, and thanks to all of the staff and volunteers who support the sections with their time and expertise throughout the year. Please join us next year at the 2006 banquet, which will be hosted by the Washington Section.



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IEEE Region 2 Meeting Focuses on Strategic Planning, Budget, Policy and Member Program Initiatives

By Jerry Gibbon, Chair
Region 2 South Area

The IEEE Region 2 meeting was held in April at the BWI Sheraton Hotel with 35 members representing the 20 sections in the region. The three section chairs from the South Area were present. The new Region 2 chair, Thomas Tullia, as well as the new chair-elect, John Dentler, both of whom began 2-year terms in January, presided over the meeting.

Several initiatives that deserve members' attention were discussed by the representatives. First, the executive board approved a difficult budget for the 2005 year regional expenses. The board agreed to consider a proposal for adding an additional dollar to the membership fee to help support Region 2 expenses and the sections in 2006; it has to be approved this fall to make it into next year's planned revenue stream. The section chairs are asked to show their support for this measure, since all the funds will come back to the section members and there is no decrease in the section's rebate from the IEEE headquarters. The other IEEE regions have already implemented this.

The representatives received a presentation on the awards program and were asked to submit names of deserving members for consideration of recognition for their support to IEEE.

OCEANS 2005

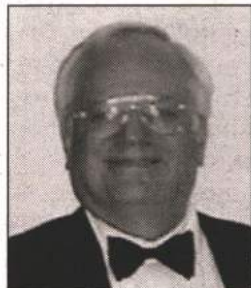
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and researchers, policymakers, and others from throughout the world to present their latest research results, state-of-the-art technologies, future concepts, and innovative ideas to their peers and the public.

The "One Ocean" theme will be explored in plenary sessions and associated events on homeland maritime security; global observation and exploration; emerging ocean science, technology and engineering; ocean education and outreach; and proactive global cooperation and engagement.

Oceans 2005 will be held from September 19 to 23 at the Marriott Wardman Park Hotel. It is organized and sponsored annually by the Marine Technology Society (MTS) and the IEEE Oceanic Engineering Society (OES), and is the largest international professional meeting and exposition devoted to the full spectrum of ocean sciences, technology, policy, engineering, and education.

The concept of "One Ocean" emphasizes the need for global cooperation and engagement to protect our internationally connected waters, as well as the critical



Jerry Gibbon

They also were asked to consider holding Members Professional Awareness Conferences (MPAC) and other PACE activities (section plans are due to Region 2 by June) to support the continuing interest of members in planning their careers, as well as job fairs to help members seeking employment, and continuing education support planning.

Region 2 has more than 34,500 members of all levels and represents 11 percent of the IEEE membership. This gives us the opportunity to prepare good policy recommendations to take to the IEEE Sections Congress 2005 (SC05) in Tampa, Florida on October 14-18. The section chairs should ask their representatives to submit suggestions to Region 2 prior to SC05. A caucus meeting of Region 2 will be held at SC05 and all section chairs should plan to attend. The Region 2 budget for SC05 is expensive and the sections are encouraged to support additional representatives attending SC05. Several chapters within each section also need additional support to remain active; these include AES-10 in the Baltimore section and R-07 in the Washington section.

The goal for the new Region 2 officers for the next two years is to improve communications between members and share ideas. To do this, Region 2

role that the "One Ocean" plays in global commerce, weather, jobs, food supply, recreation, national defense, and mineral and energy resources. "One Ocean" also reinforces the many interrelationships among the scientific and engineering disciplines, and Oceans 2005 provides an unequalled opportunity to network with colleagues from across the entire spectrum of oceanic and marine interests.

Ocean professional societies serve a vital role in advancing the science and developing the cutting-edge technologies that are essential for the future of our "One Ocean." Other ocean, atmosphere, space, and related professional societies and organizations are invited to join in this ocean community conference and participate in planning, hosting events, holding concurrent meetings, program execution, or other activities.

For more information, see www.oceans2005.org, or contact one of the executive co-chairs: Barry Stamey at barry.stamey@mitretek.org or 703-610-1652; Fred Klein at fred.klein@mitretek.org or 703-610-1596; or Steve Holt at sholt@mitretek.org or 703-610-1709.

has set in motion two initiatives: (1) activate the virtual community website (already online), and (2) update the Region 2 web page. Both tasks have been started and current information is being posted to help members stay in touch. In fact, the agenda and presentations from the Region 2 spring meeting are online for members' review and comments.

Region 2 members will be hearing more about new policy issues, regional strategic plans, and opportunities to volunteer for Region 2 positions supporting sections in our area.

To learn more, contact the South Area Chair, Jerry Gibbon, at j.t.gibbon@ieee.org or 202-276-2265.

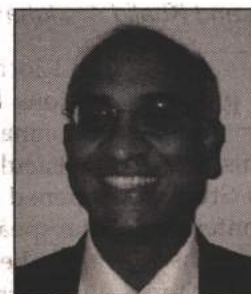
Congratulations to These New Senior Members!

Chris J. Brantley (W)
Gabe F. D'Alleva (NV)
Lei Hao (NV)
Peter N. Johnson (NV)
Ralph H. Justus (NV)
Juergen Lorenz (W)
Prabhat Prabhat (W)
Thikkavarapu R. Reddy (W)
Steven J. Sampson (NV)
Yang Wang (NV)
Edmund A. Williams (NV)
William H. Wolfe (NV)

If you need assistance with advancing to Senior Member level, please contact Michael Cardinale cardinal@ieee.org for Northern Virginia (NV) Section members, or Howard Needham at howardn@ieee.org for Washington (W) Section members.

Northern Virginia Chair's Column

By Murty Polavarapu



Murty Polavarapu

I am pleased to report that the Northern Virginia Section hosted a very successful National Capital Area Annual Awards Banquet (see separate article for details). I offer my personal congratulations to all the award winners.

Over the last month, I had the opportunity to be present for the IEEE student branch activities at George Mason University and DeVry University. The George Mason University student branch held a very successful Student Professional Activities Conference (SPAC) and the DeVry student branch hosted a presentation by a team from BAE Systems that included an alumnus of DeVry who is also an IEEE member. Both events were well attended and are testimonials to the vibrancy of our

student chapters.

The Northern Virginia Section is taking the lead in Region 2 in organizing a Member Professional Activities Conference (MPAC), working jointly with the Washington Section (see story, p. 1). This will be a valuable workshop for IEEE members to learn the job

survival skills that are needed in the fast-changing global climate. If you have specific items that you would like to see addressed at this workshop, please contact our PACE Chair, Amarjeet Basra, at amarjeet.basra@ieee.org. I look forward to your participation in making this event a success.

As we enter the summer season, I hope that all of you will have a chance to enjoy the season and recharge your batteries to engage in a full menu of IEEE activities for the fall.



DeVry Workshop—On April 20, members of DeVry University's IEEE Student Chapter participated in an electronics workshop at the university's Crystal City campus. Several dozen young women from area high schools attended the workshop, which was conducted as part of the all-day Young Women in Science and Technology event. From left to right: student member Abdul Hadi Sid Hadi, student member Britany Scott, Northern Virginia Section Director Kerry Hartman, Chapter Webmaster Kathy McCarroll, and Chapter President Myles Rodgers.

Goddard Space Flight Center Recognizes James Tilton for Excellence in Information Science & Technology

James C. Tilton, an IEEE Senior Member, is the recipient of NASA Goddard Space Flight Center's fifth annual Excellence in Information Science and Technology Award. The award was presented at an Information Science and Technology Colloquium on May 18.

Dr. Tilton is a computer engineer with the Computational & Information Sciences and Technology Office (CISTO) at NASA Goddard in Greenbelt, MD. As a member of the CISTO, Dr. Tilton is responsible for designing and developing computer software tools for space and Earth science image analysis, and encouraging the use of these computer tools through interactions with space and Earth scientists. His development of a recursive hierarchical segmentation algorithm has resulted in a patent award and another patent application.

This award is presented annually to the Goddard employee who best exhibits broad, significant contributions to Goddard programs or projects in the areas of information science and technology. The award recognizes career achievement or a specific act of exceptional merit completed in the previous year.

Dr. Tilton received B.A. degrees



Christopher J. Scolese (left), deputy director of NASA Goddard Space Flight Center, presents the Excellence in Information Science and Technology Award to James C. Tilton

in electronic engineering, environmental science and engineering, and anthropology and an M.E.E. (electrical engineering) from Rice University in 1976. He also received an M.S. in optical sciences from the University of Arizona in 1978, and a Ph.D. in electrical engineering from

Purdue University in 1981.

He serves as chair of the Washington and Northern Virginia chapter of the IEEE Geoscience and Remote Sensing Society, and is a member of the IEEE Signal Processing Society, Phi Beta Kappa, Tau Beta Pi, and Sigma Xi.

James Ellenbogen Gets WAS Award for his Nanotechnology Research

James C. Ellenbogen, a member of the IEEE Northern Virginia Section, has been recognized by the Washington Academy of Sciences for his pioneering contributions to the science and technology of electronic computers integrated on the nanometer scale. He received the academy's Award in Engineering at the organization's annual banquet on May 10.

Dr. Ellenbogen is a senior principal scientist with the Nanosystems Group at Mitre Corporation in McLean, Virginia. He is a world-renowned expert on nanotechnology and on next-generation nanometer-scale electronic computers, especially molecular-scale electronic computers.

William A. Wulf, IEEE Fellow and President of the National Academy of Engineering, received the award

for Distinguished Career in Science.

The IEEE Northern Virginia and Washington Sections are affiliates of the Washington Academy of Sciences. For more information about the activities of the academy, visit www.washacadsci.org.



Dr. James Ellenbogen receives the Washington Academy of Sciences Award from Murty Polavarapu.

Russel Jones Receives AAES Chair's Award

IEEE Senior Member Dr. Russel C. Jones is the recipient of the 2005 American Association of Engineering Societies (AAES) Chair's Award.

He received the award at the organization's 26th annual awards ceremony on May 9, at the National Academy of Engineering in Washington, D.C.

Dr. Jones is a private consultant with World Expertise L.L.C., of Falls Church, Virginia, and a member of the IEEE Northern Virginia Section. He is being honored "for his career-long dedication to the highest standards in engineering education, and for his leadership of the U.S. engineering profession in the disciplines' engagement with world organizations in advancing engineering capacity building as the foundation for raising the standard of living of developing nations." He is also editor of International Engineering Education Digest.

Established in 1980, the AAES Chair's Award recognizes an individual who has made outstanding contributions to the welfare of the United States. Suzanne Jenniches, AAES Chair, and John Parker, AAES

MIMO Technology Described at Communications Society Meeting

By Dennis Moen, Chair
Communications Society Chapter (NV)

At its May meeting, the Northern Virginia Chapter of the Communications Society heard an exiting technical presentation by Dr. Victor Shtrom, chief technical officer of Video54, Mountain View, California. He provided an in-depth technical discussion on the topic of Multiple Input Multiple Output (MIMO) systems and their potential use for indoor wireless networking.

MIMO wireless involves the use of multiple antennas at both ends of a radio link, and is emerging as an important technology to enhance wireless performance. Dr. Shtrom's presentation focused on commercialization of MIMO technology, and engineering aspects and tradeoffs in developing early MIMO products. He addressed the key features of MIMO systems that turn multipath propagation, traditionally a pitfall of wireless transmission, into a benefit.

Since its early days in 1993, MIMO has evolved with contributions from hundreds of researchers around the world. Some aspects of MIMO have already entered wireless standards, and many more standards efforts are ongoing.

Dr. Shtrom explained how multiple antennas at each end of a MIMO link can be used in different modes such as transmit-receive diversity, beamforming, antenna subset selection and spatial multiplexing. He presented analytical models based on Rayleigh behavior to explain which mode or option actually maximizes performance and related this to channel conditions and system SNR and QoS requirements, among other factors.

He concluded his presentation by explaining other important tradeoffs for consideration in commercialization of MIMO systems such as the overall system cost, power consumption and manufacturability.

Past Chair, presented the award.

The American Association of Engineering Societies is a federation of engineering societies dedicated to advancing the knowledge, understanding and practice of engineering. AAES's membership represents more than one million engineers in the United States. For more information, go to <http://www.aaes.org>.